GURPS®

Fourth Edition

BASIC SET

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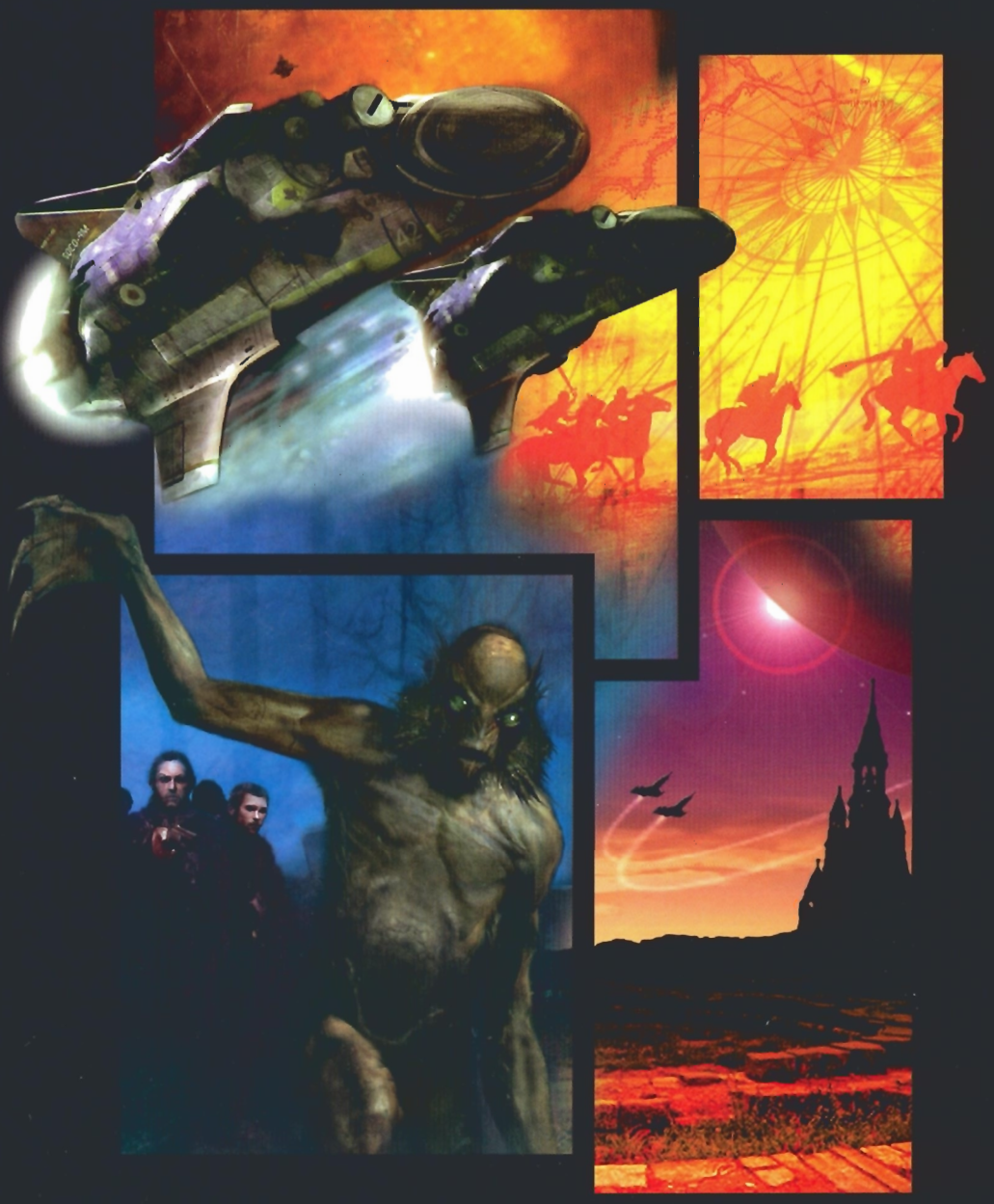

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STEVE JACKSON GAMES

GURPS®

Fourth Edition

Basic Set: Campaigns

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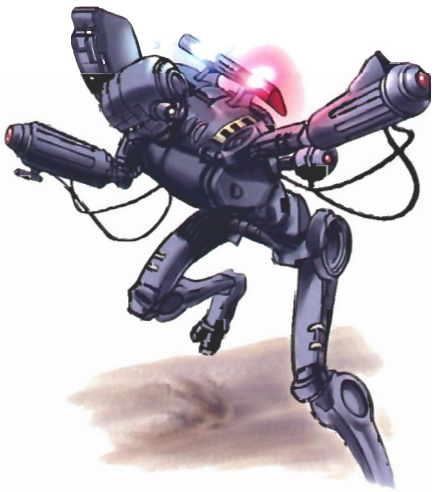


Introduction

This is Book 2 of the ***GURPS Basic Set****, Fourth Edition.*

Why two books? The last edition, after all, was a single book of 256 pages, plus the Instant Characters section.

The short answer is: we added a lot of material. Which translated to a lot of pages. This new edition brings in a great deal of material that's either brand new or previously appeared in other books (especially the two ***Compendiums***). This new ***Basic Set*** weighs in at a total of 576 pages, more than double the length of the last edition. That's quite a stack of paper.

We could still have done it as a single book. But for two reasons, we didn't. First, that would be a thick, *heavy* book, suitable for stopping bullets but just a bit unwieldy to use. And second, it would be an expensive book. Really, too expensive.

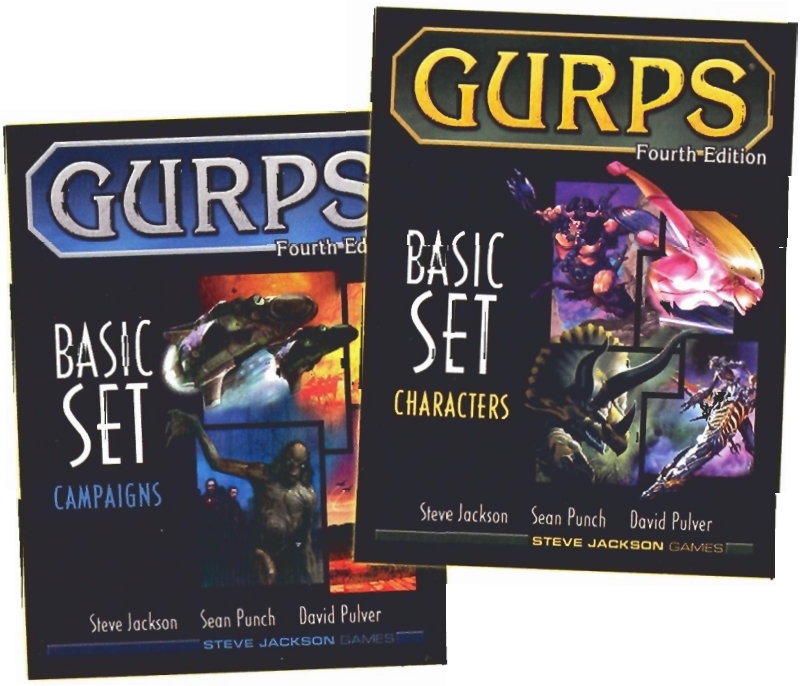
By dividing the manuscript into two parts, we were able to get everything that a player *has* to have into Book 1. That book has the basic system rules and everything for character creation. What it didn't have, in the early drafts, was any combat at all . . . so we added a section with the basics of combat. Now a player needs only Book 1 to get into the game.

Who needs this book? Well, first and foremost, the GM. This book goes into detail about physical feats and combat. It also covers vehicles and technology, animals and monsters, world design, and Game Mastering. "Tool kit" chapters let the GM create new creatures (and even PC races), artifacts, character abilities, and entire game worlds.

But it's not just for GMs. Players who enjoy detail and who want to participate in the creative side of the game will definitely find this book useful . . . and so will players who want to become GMs someday. The point is simply that it's not *required*. Nevertheless, the books *are* intended to work together. The pages and chapters are consecutively numbered, and the index covers *both* books and is repeated in both.

In the final analysis, the answer to "why two books?" is simply *accessibility*. We want the system to be easy to play, easy to learn, and easy to get into. By dividing the text into "necessary for the new player" and "everything else," we hope we've made the new ***Basic Set*** not just easier to carry around, but also a better introduction to the system. Let us know how we did.

– Steve Jackson



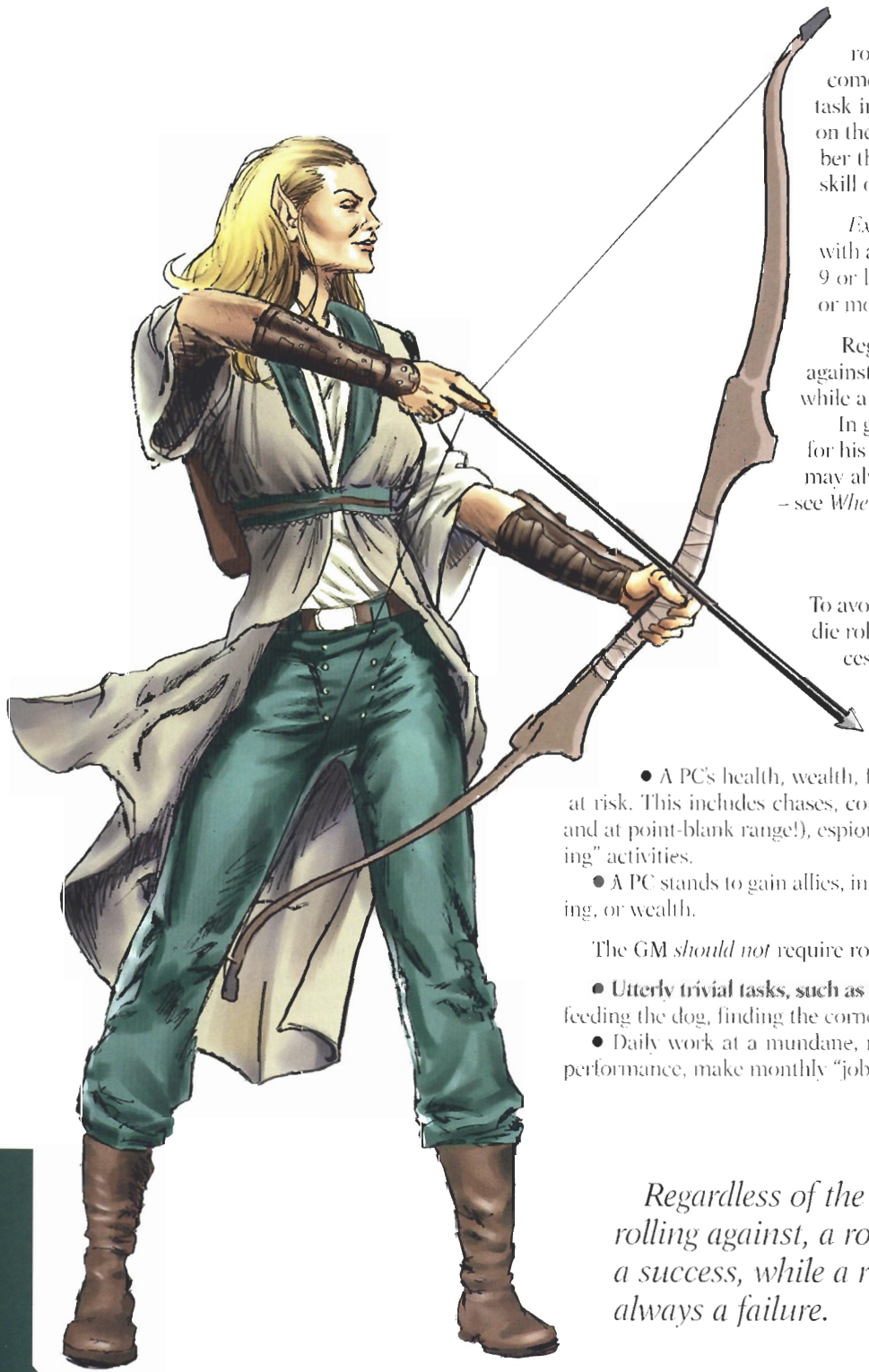
Other Support and GM Tools

Game Masters will also find useful material in the ***GURPS GM's Screen,*** which includes all the tables necessary to run a ***GURPS*** *Fourth Edition* game, copies of ***GURPS Lite*** and the tables of advantages, disadvantages, and skills from the ***Basic Set,*** Book 1, as well as several variant character sheets and other useful tools.

If you have access to the Internet . . . and nowadays that's almost a given . . . there's a great deal of support available, including:

- The free SJ Games webforums at **forums.sjgames.com**.
- *Pyramid* Magazine, which, for $20 a year, gives subscribers several articles a week. A lot of these relate directly or indirectly to ***GURPS***. There are also reviews, cartoons, and other bits of data and inspiration.
- **e23** is our electronic publishing division . . . which, as of this writing, is not yet up and running. But it will be. Check out **www.sjgames.com/e23/** and see what you find. We have already prepared dozens of PDFs, ranging from short adventures to whole ***GURPS*** sourcebooks, and we get more ready every week. This will be a very valuable resource. You can purchase game material online, in PDF format, in the same shopping cart you use for your Warehouse 23 orders!
- And, of course, the ***GURPS*** website itself (**www.sjgames.com/gurps/**) is constantly being updated with information about all ***GURPS*** products in and out of print. One brand-new feature will be implemented for many ***GURPS*** books by the time you read this: the book's complete bibliography will be online, and every book that's currently in print will have a hotlink to **amazon.com**!

Chapter Ten
Success Rolls



Whenever a character attempts to perform an action (e.g., use a skill), roll three dice to determine the outcome. This is called a *success roll*. The task in question *succeeds* if the total rolled on the dice is *less than or equal to* the number that governs the action – most often a skill or an attribute. Otherwise, it *fails*.

Example: If you attempt to pick a lock with a Lockpicking skill of 9, you must roll 9 or less on 3d to succeed. On a roll of 10 or more, you fail.

Regardless of the score you are rolling against, a roll of 3 or 4 is *always* a success, while a roll of 17 or 18 is *always* a failure.

In general, the player makes the die rolls for his character's actions. However, the GM may always choose to roll the dice in secret – see *When the GM Rolls* (p. 344).

When to Roll

To avoid bogging down the game in endless die rolls, the GM should only require a success roll if there is a chance of *meaningful failure* or *gainful success*. In particular, the GM *should* require success rolls when . . .

- A PC's health, wealth, friends, reputation, or equipment are at risk. This includes chases, combat (even if the target is stationary and at point-blank range!), espionage, thievery, and similar "adventuring" activities.
- A PC stands to gain allies, information, new abilities, social standing, or wealth.

The GM *should not* require rolls for . . .

- **Utterly trivial tasks, such as crossing** the street, driving into town, feeding the dog, finding the corner store, or turning on the computer.
- Daily work at a mundane, nonadventuring job. (To evaluate job performance, make monthly "job rolls"; see *Jobs*, p. 516.)

Regardless of the score you are rolling against, a roll of 3 or 4 is always a success, while a roll of 17 or 18 is always a failure.

When the GM Rolls

There are two sets of circumstances under which the GM should roll for a PC and not let the player see the results:

1. When the ***character*** *wouldn't know for sure whether he had succeeded.* This is true of all rolls to gain information, whether through skills such as Detect Lies, Interrogation, Meteorology, and Search, advantages like Intuition and Oracle, or supernatural divinatory abilities. In this situation, the player declares that he is using his ability and the GM rolls in secret. On a success, the GM gives the player true information – the lower the roll, the better the information. On a failure, the GM either gives no information at all or *lies* (the higher the roll, the more severe the lie), as appropriate.

2. When the ***player*** *shouldn't know what's going on.* This includes most Sense rolls, rolls to use Danger Sense, etc. Suppose the party is walking along a jungle trail. A jaguar is on a limb ahead. The GM should not say, "There's a jaguar ahead of you. Roll to see if you notice it." Neither should he say, "Everybody make a Vision roll. Does anybody have Danger Sense?" Either of these approaches gives too much away. Instead, the GM should roll for each character in secret. If anyone succeeds, the GM can say, "You notice a jaguar on a branch 20 yards ahead!" If nobody succeeds . . . they're in for a surprise.

MODIFIERS

The rules often specify *modifiers* for certain success rolls. These bonuses and penalties affect the *number you are rolling against* – your "target number" – and not the total rolled on the dice. Bonuses always improve your odds, while penalties always reduce them.

For instance, the Lockpicking skill description states, "-5 if working by touch (e.g., in total darkness)." This means that if you are working in the dark, you must subtract 5 from your Lockpicking skill for that attempt. If your Lockpicking skill is 9, you roll against 9 minus 5, or 4, in the dark.

A specific scenario might provide modifiers to allow for the relative ease or difficulty of a particular situation. For instance, an adventure might state that a lock is +10 to open due to the fact that it is primitive and clumsy. If your Lockpicking skill were 9, you would roll against 9 + 10, or 19. Since the highest roll possible on 3d is 18, it would seem that success is assured. This is almost true, but not quite – see *Critical Failure* (p. 348).

Modifiers are cumulative unless stated otherwise. For instance, if you tried to open that primitive lock in the dark, *both* modifiers would apply, and you would roll against 9 - 5 + 10, or 14.

See *Culture* (p. 23), *Language* (p. 23), *Tech-Level Modifiers* (p. 168), *Familiarity* (p. 169), *Equipment Modifiers* (p. 345), and *Task Difficulty* (p. 345) for discussions of common modifiers.

Base Skill vs. Effective Skill

Your *base skill* is your actual level in a skill, as recorded on your character sheet. Your *effective skill* for a particular task is your base skill plus or minus any modifiers for that task. In the Lockpicking examples above, base skill is 9 in all cases, while effective skill is 4, 19, and 14 in three different situations.

The terms "base skill" and "effective skill" apply to *all* success rolls, not just to skill rolls. When you make an

Default Rolls

When a task calls for a skill roll, you must have *some* ability with the required skill in order to attempt the task. Ideally, you want points in that skill . . . but an untrained person can take a stab at most tasks. For instance, *anyone* can swing a sword – although only a trained warrior is likely to have much success at it.

A skill that anyone can attempt without study is said to "default" to an attribute or another skill. This means you can attempt the desired action by rolling against one of your attributes or other skills *at a penalty*. This "default roll" is just an ordinary success roll.

Example: Lockpicking skill defaults to "IQ-5"; that is, anyone can open a lock, *without training*, by making a success roll against 5 less than his IQ. If your IQ is 10, you can open an ordinary lock on a roll of 5 or less on 3d. The smarter you are, the better your chances – but training is always preferable!

The description of each skill shows what skills or attributes it defaults to, and at what penalties. If a skill offers multiple defaults, always choose the best one.

Example: Interrogation defaults to "IQ-5, Intimidation-3, or Psychology-4." If you're not a trained interrogator, you can still get answers out of a prisoner by outthinking him (IQ-5), frightening him (Intimidation-3), or playing "mind games" with him (Psychology-4). If you had IQ 12, Intimidation at 14, and Psychology at 13, your defaults would be 7, 11, and 9, respectively. Roll against 11, the highest of the three.

The Rule of 20

If you have a basic attribute over 20, treat it as 20 for default purposes. For instance, if you have IQ 25, your default Lockpicking skill (IQ-5) is 15 – not 20. No such limit applies to defaults to other *skills*.

"No Default"

Some actions are *impossible* without training. Skills like Alchemy, Karate, and magic spells have *no default*. If you lack the proper training, you can't attempt these things at all.

Equipment Modifiers

The quality of your equipment modifies your skill rolls for tasks that normally require equipment:

No equipment: -10 for technological skills, -5 for other skills. Note that many skills cannot be used *at all* without equipment!

Improvised equipment: -5 for technological skills, -2 for other skills.

Basic equipment: No modifier. This is the case most of the time.

Good-quality equipment: +1. Costs about 5× basic price.

Fine-quality equipment: +2. Costs about 20× basic price.

Best equipment possible at your TL: +TL/2, round down (minimum +2). Not usually for sale!

If you have "basic" or better equipment that is not in perfect condition, the following modifiers apply *in addition to* quality modifiers:

Missing important items: -1 per item.
Damaged equipment: -1 to -3.

Equipment modifiers reflect the quality of:

- Special "tools of the trade," for criminal, military, and espionage skills such as Disguise, Explosives, Forgery, Forward Observer, Holdout, and Lockpicking.
- The contents of your backpack, for outdoor skills like Fishing and Survival.
- Your instruments or lab, for scientific and medical skills such as Alchemy, Diagnosis, Meteorology, Navigation, and Surgery.
- Your shop or toolkit, for Armoury, Carpentry, Electrician, Electronics Repair, Engineer, Machinist, Masonry, Mechanic, Smith, and other skills used to build or repair things.
- Your studio, for artistic skills – Artist, Jeweler, Photography, etc.

Example: For First Aid skill, "improvised" might mean leaves and clean mud; "basic," sterile bandages; "good," a standard first-aid kit; "fine," a crash kit (found in most ambulances); and "best," an entire hospital. Missing antiseptic would give -1, while a first-aid kit salvaged from a wrecked vehicle might give -1 or worse for damaged equipment.

attribute roll, defense roll (p. 374), self-control roll (p. 120), etc., your base skill is your unmodified score, while your effective skill is your final, modified target number.

You may not attempt a success roll if your effective skill is less than 3, unless you are attempting a *defense roll* (p. 374).

Task Difficulty

If the GM feels that a success roll should be easier or harder in a particular situation, he may assess a *difficulty modifier.* This is separate from modifiers for the culture, equipment, language, tech level, etc. of the person attempting the task, in that it applies to anyone who attempts the task. It is cumulative with all other modifiers.

For instance, if the GM rules that the only way to sway a particular audience is to make a Public Speaking roll at -2, the difficulty modifier is -2. *Any* speaker has -2, in addition to personal modifiers (for culture, language, Voice, etc.), when dealing with that audience.

Many skills suggest difficulty modifiers – e.g., the -5 to use Lockpicking skill by touch – but the possible variety of tasks is essentially infinite. Here are some guidelines for GMs:

+10 – *Automatic.* Tasks so trivial that the GM should waive the need for a success roll, except under extraordinary circumstances. *Example:* A Driving roll to start a car.

+8 or +9 – *Trivial.* Situations where failure is extremely unlikely, and would require *incredibly* bad luck. *Example:* A Driving roll to drive around an empty parking lot.

+6 or +7 – *Very Easy.* Tasks where failure is possible, but would require bad luck. *Example:* A Driving roll to drive down an empty suburban street.

+4 or +5 – *Easy.* Most *mundane* tasks, including rolls made by ordinary people at day-to-day jobs. *Example:* A Driving roll to commute to work in a small town.

+2 or +3 – *Very Favorable.* Mildly risky tasks that most people would undertake without hesitation. *Example:* A Driving roll to commute to work in a teeming metropolis.

+1 – *Favorable.* Tasks that most people *would* hesitate at, due to the risk, but that a career adventurer would regard as easy. *Example:* A Driving roll to compete in a road rally.

0 – *Average.* Most *adventuring* tasks, and the majority of skill use under stress. *Example:* A Driving roll in a car chase.

-1 – *Unfavorable.* Stressful tasks that would challenge a novice adventurer, but not an old hand. *Example:* A Driving roll in a *high-speed* car chase.

-2 or -3 – *Very Unfavorable.* Stressful tasks that would challenge a professional. Skilled adventurers still routinely accept such risks! *Example:* A Driving roll in a high-speed car chase on a busy freeway.

-4 or -5 – *Hard.* Tasks so challenging that even an expert will look for alternatives. A true "master" is still unlikely to feel challenged. *Example:* A Driving roll to keep the car on the road while shooting a gun out the window during a high-speed chase.

-6 or -7 – *Very Hard.* Situations that even the masters might have second thoughts about. *Example:* A Driving roll in a high-speed chase during a blizzard.

-8 or -9 – *Dangerous.* Tasks at which even the greatest masters expect to fail. *Example:* A Driving roll while shooting a gun in a high-speed chase during a blizzard.

-10 – *Impossible.* No sane person would attempt such a task. The GM may wish to forbid such attempts altogether. *Example:* A Driving roll to steer a car with the knees while firing a bazooka two-handed during a chase through a blizzard.

These modifiers assume a *trained* character. To get an idea of how tough a task would be for someone working at default, add the default penalty to the difficulty modifier.

Example: Someone who never learned to drive is using Driving at its DX-5 default. For him, an everyday commute – "Easy" (+4 or +5) for a trained driver – would be "Average" (DX) or even "Unfavorable" (DX-1), and almost certainly a stressful experience!

The GM can use difficulty modifiers *in place of* other modifiers if the outcome of a task is too unimportant – or the action too hot – to justify stopping to add up a long string of modifiers. For instance, in a car chase involving a car in bad repair, the GM might bump the difficulty up a level or two *instead* of assessing an equipment modifier for the car.

Time Spent

You can reduce the penalty for a tough task – or even get a bonus – by working slowly and deliberately, taking the time to get things right. Conversely, if you are racing to beat a deadline, even the simplest task can become tricky.

Extra Time: Taking more time than usual for a task (as specified by the rules or the GM) gives a bonus to a *noncombat* action: 2× as long gives +1, 4× gives +2, 8× gives +3, 15× gives +4, and 30× gives +5. For instance, taking a work day (eight hours) to do a one-hour task would give +3. This bonus only applies if it would make sense to take extra time for the task at hand (GM's judgment). You can take extra time to open a safe or figure out an alien artifact, but not to neutralize poison or chase a fleeing suspect!

Haste: Hurrying gives a penalty: -1 per 10% less time taken. For instance, attempting a task in half the usual time (-50%) is at -5. The maximum time reduction is normally 90% (taking 1/10 the prescribed time), at -9. In a cinematic game, the GM might allow one attempt at -10 to complete a task *instantly;* e.g., a Mechanic roll at -10 to fix a machine by kicking it! However, you cannot hasten tasks that require a certain amount of time due to natural laws (e.g., a chemical reaction) or the limitations of equipment (e.g., the top speed of a vehicle). When in doubt, the GM's decision is final.

Note that if a skill specifies time modifiers, these override the generic modifiers above. For instance, magic spells have their own rules for extra time (see *Ceremonial Magic*, p. 238) and cannot be rushed save by those with high skill (see *Magic Rituals*, p. 237).

Long Tasks

The GM may define major projects as "long tasks" that require a number of man-hours of work with one or more attributes or skills. For instance, the GM might rule that building a rope bridge over a chasm requires 40 man-hours of DX-based ordinary labor, 24 man-hours of Carpentry work, and eight man-hours of Engineer work.

The normal limit on labor for each person involved is eight hours per 24-hour day. At the end of each day, *each worker* rolls vs. the skill used that day (the GM rolls for NPCs). A success puts eight man-hours of work toward the task; a critical success counts 50% extra. A failure counts as half as much. A critical failure contributes nothing, and *ruins* 2d man-hours of work already done!

A supervisor who works a *full* shift with his workers may opt to coordinate his staff instead of working himself. Make an Administration roll if organization matters more than inspiration, or a Leadership roll in the opposite situation (GM's judgment). On a success, the workers get +1 to their rolls for the day; on a critical success, they get +2. On any failure, the supervisor contributes nothing at all.

It is possible to work longer shifts. To get an NPC to do this, make an Influence roll (see *Influence Rolls*, p. 359). Roll against HT on any day you work more than eight hours, at -1 per hour over 10. On a success, make the usual skill roll and (except on a critical failure) base the man-hours contributed on the time worked. On a failure, your skill roll has a penalty equal to your margin of failure or -2, whichever is worse, *and* you lose FP equal to the size of your penalty – but you still contribute extra labor if your skill roll succeeds. Treat a critical failure as any other failure, except that you are so exhausted that you cannot work the next day!

It is possible to cut corners and reduce the man-hours of labor required, as described under *Time Spent*. *All* workers doing a given type of labor make their skill rolls at the usual penalty for haste. For instance, the manual laborers working on the rope bridge above could reduce their work to 20 man-hours, but they would roll at DX-5.

Likewise, it is possible to take extra time to get a bonus. For instance, if those laborers put in 80 man-hours, they would roll at DX+1. This strategy is likely to backfire if the extra time takes the form of long shifts, however.

Degree of Success or Failure

Once you have calculated effective skill by applying all relevant modifiers to base skill, roll 3d to determine the outcome. If the total rolled on the dice is less than or equal to your effective skill, you succeed, and the difference between your effective skill and your die roll is your *margin of success.*

Example: If you have effective skill 18 and roll a 12, you succeed; your margin of success is 6.

If you roll *higher* than your effective skill, you fail, and the difference between the die roll and your effective skill is your *margin of failure.*

Example: If you have effective skill 9 and roll a 12, you fail; your margin of failure is 3.

Always note your margin of success or failure, as many rules use these margins to calculate results that matter in play. Even when the rules don't call for these numbers, the GM might wish to reward a large margin of success with a particularly favorable outcome, or assess especially dire consequences for a large margin of failure!

Extremely high or low rolls have special effects – beyond those for normal success and failure – regardless of your exact margin of success or failure.

Critical Success

A *critical success* is an especially *good* result. You score a critical success as follows:

- A roll of 3 or 4 is *always* a critical success.
- A roll of 5 is a critical success *if your effective skill is 15+.*
- A roll of 6 is a critical success *if your effective skill is 16+.*

When you roll a critical success, the GM determines what happens to you. It is always something good! The lower the roll, the better "bonus" he gives you.

A *critical hit* is a critical success scored on an attack. The GM does not determine the result. Instead, use the *Critical Hit Table* (p. 556).

Optional Rule: Influencing Success Rolls

Here are two options for GMs who wish to let players spend bonus character points (see p. 498) to influence game-world outcomes. Be aware that rules of this kind tend to encourage players to sacrifice long-term development for short-term success. This is most appropriate for genres where the heroes usually "win" but don't develop much; e.g., classic comic-book supers. The GM might want to set a limit on how many points each player can spend this way per game session.

Buying Success

A player can spend bonus character points to alter the outcome of his *last* success roll. It costs 2 points to turn critical failure into failure, 1 point to convert failure to success, or 2 points to turn success into critical success. Add these costs for multiple shifts (e.g., critical failure to critical success costs 5 points). To keep the PCs from winning every battle with a series of critical hits, the GM may choose to forbid purchase of critical successes, at least in combat.

Note that because "guaranteed success" can destroy suspense, this optional rule is not recommended for horror or mystery games.

Player Guidance

A player can spend bonus character points to specify the game-world effects of a recent success. Whenever he rolls a success (or in a situation that didn't call for a roll), he may spend 2 points and add a *plausible* element to the world or scene. A player who rolls a critical success may spend 1 point for the same effect. This *replaces* any other beneficial effects of the critical success.

Example: Dr. Smith is working at the Federal Laboratory for Advanced Weapons when a giant robot bursts through the front doors, four stories below. Smith makes his Sense roll and notices the attack. Smith's player suggests, "I was walking past the security station and spotted the robot on a monitor. I go over to the console and train the sensors on the robot." The GM hadn't previously mentioned a security station or sensors, but since that fits his view of the FLAW, he agrees. Smith's player pays 2 points and the GM fits the scene in.

In addition to being plausible, a suggestion must be acceptable to the GM and the other players. In general, the GM should go along with suggestions that are imaginative, that move the plot forward, or that save a PC's life. The GM should *not* approve a suggestion that would short-circuit the plot, contradict a previously established fact, or harm or steal the scene from another PC. In borderline cases, the player and GM can negotiate.

The GM should make a note of any element added using this rule, as it becomes a permanent part of the game world!

Critical Failure

A *critical failure* is an especially *bad* result. You score a critical failure as follows:

- A roll of 18 is *always* a critical failure.
- A roll of 17 is a critical failure *if your effective skill is 15 or less;* otherwise, it is an ordinary failure.
- Any roll of 10 greater than your *effective* skill is a critical failure: 16 on a skill of 6, 15 on a skill of 5, and so on.

When you roll a critical failure, the GM determines what happens to you. It is always something bad – the higher the roll, the worse the result.

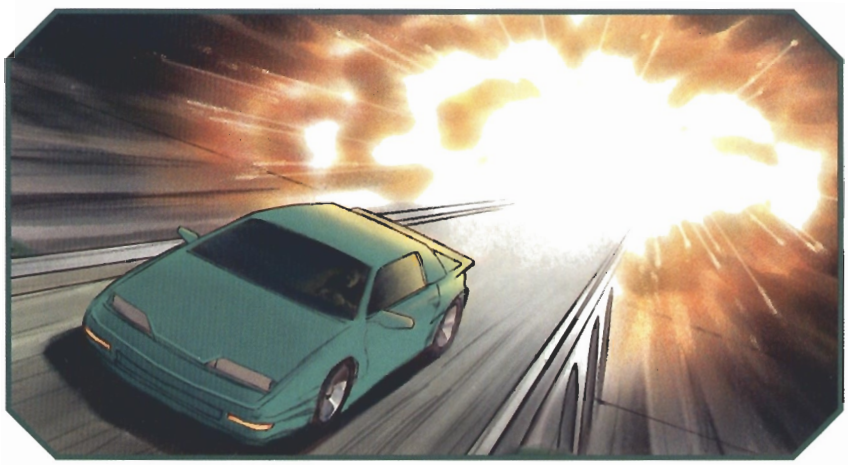
A *critical miss* is a critical failure scored on an attack. The GM does not determine the result. Instead, use the *Critical Miss Table* (p. 556).

Repeated Attempts

Sometimes you will only get one chance to do something (defuse a bomb, jump over a crevasse, remove an inflamed appendix, please the King with a song). Other times you can try over and over again until you succeed (pick a lock, catch a fish, analyze a poison). Still other times you will not know whether you succeeded or failed until it's too late to try again (translate an old treasure map, order in a French restaurant, build a ship). Finally, there are times when you are injured by failure but can afford to fail a few times (climb a wall, impress a savage tribesman).

The GM must use common sense to distinguish between these cases, according to the exact situation in which the players find themselves. As a rule:

- If the first failure kills them or destroys the object of the attempt, that's that.
- If a failure causes damage of some kind, assess the damage and let them try again after a "reasonable" time passes. (Skill descriptions frequently state the time required.)
- If a failure causes no damage, let them try again after a reasonable time, but at -1 per repeated attempt – that is, -1 on the second attempt, -2 on the third, and so on – until they succeed or give up.
- If repeated attempts are the norm for the task (e.g., when attacking in combat), or if it's long task, tell them that their attempt failed but let them try again at no special penalty, in the usual amount of time.



Contests

Sometimes a situation will arise in which two characters must compare attributes, skills, or other traits to settle a competition. The one with the highest score doesn't *always* win . . . but that's the way to bet. A "Contest" is a quick way to handle such a competitive situation without playing it out in detail.

In a Contest, each competitor attempts a success roll against the ability being tested – with all applicable modifiers – and then compares his result to his opponent's. There are two different ways to make this comparison.

Quick Contests

A "Quick Contest" is a competition that is over in very little time – often in one second, perhaps even *instantly.* Examples include two enemies lunging for a gun, or two knife throwers seeing who gets closer to the bull's-eye.

Each competitor attempts his success roll. If one succeeds and the other fails, the winner is obvious. If both succeed, the winner is the one with the largest margin of success; if both fail, the winner is the one with the smallest margin of failure. A tie means nobody won (in the examples above, both fighters grabbed the weapon at once, or the knives hit the same distance from the bull's-eye).

Margin of Victory

The amount by which the winner beat the loser is often important – success by 5 vs. failure by 5 generally means more than success by 2 vs. success by 1! The winner's "margin of victory" is the difference between his margin of success and the loser's margin of success if both succeeded, the sum of his margin of success and the loser's margin of failure if he succeeded and the loser failed, or the difference between the loser's margin of failure and his margin of failure if both failed.

Resistance Rolls

Most abilities that can affect an unwilling subject offer the subject an attempt to resist using an attribute, skill, or supernatural ability. This is sometimes a Quick Contest between the attacking ability and the defender's resistance, in which case two special rules apply:

1. The attacker must ***succeed*** *to win.* He cannot win by having the smallest margin of failure. If he fails his roll, he loses automatically and his subject does not need to attempt a resistance roll.

2. The attacker must ***win*** *to affect the subject.* All ties go to the defender.

Regular Contests

A "Regular Contest" is a slow competition with much give and take – for instance, arm wrestling.

Each character attempts his success roll. If one succeeds and the other fails, the winner is obvious. If both succeed or both fail, the competitors' relative positions are unchanged and they roll again. Eventually, one character succeeds when the other fails. At this point, the one who made his roll is the winner.

The length of *game time* each attempt takes depends on the activity, and is up to the GM. In a combat situation, each attempt takes one second . . . but in a library-research contest, with the fate of the world hanging on who finds a certain obscure reference first, each attempt could represent days of time.

Extreme Scores

If both contestants have a score of 6 or less, a Regular Contest can bog down the game as both sides roll failure after failure. To keep the game moving, raise the *lower* score to 10 and add the same amount to the *higher* score.

Example: For a 5 vs. 3 Contest, add 7 to each score to make it 12 vs. 10.

Likewise, a Regular Contest can become deadlocked if both contestants have scores of 14 or more, because it can take a long time before anyone rolls a failure. To speed up the process, reduce the *lower* score to 10 and subtract the same amount from the *higher* score.

Example: For a 19 vs. 16 Contest, subtract 6 from each score to make it 13 vs. 10.

When both scores are greater than 20 – e.g., a Contest of ST between dinosaurs – even this will not suffice. Instead, reduce the *lower* score to 10 and multiply the *higher* score by (10/lower score), rounding down.

Example: For a 600 vs. 500 Contest, multiply the higher score by 10/500 and set the lower one to 10 to make it 12 vs. 10.

The Rule of 16

If a supernatural attack (magic spell, psi ability, etc.) offers a resistance roll and the subject is *living* or *sapient*, the attacker's effective skill cannot exceed the *higher* of 16 and the defender's actual resistance. If it does, reduce it to that level.

Example: A wizard has an effective skill of 18 with his Mind-Reading spell. If he tries to read the mind of someone with a Will of 16 or less, he rolls against 16. If his subject has a Will of 17, he rolls against 17. And if his target has a Will of 18 or higher, he rolls against 18.

Physical Feats

Below are rules for common physical tasks of importance to adventurers. For tasks not listed here, make DX rolls for matters of precision and HT rolls for feats of endurance. To determine weight moved or work done, use Basic Lift. Movement speed should generally be proportional to Basic Move. For more on basic attributes and secondary characteristics, see Chapter 1.

Climbing

To climb anything more difficult than a ladder, roll against Climbing skill (p. 183). This defaults to DX-5. Modifiers to the roll depend on the difficulty of the climb (see below). In all cases, subtract your encumbrance level from your roll as well. Climbing while heavily laden is a dangerous matter!

Make one roll to start the climb and another roll every five minutes. Any failure means you fall (see *Falling*, p. 431). If you secured yourself with a rope, you will fall only to the end of the rope unless you rolled a critical failure.

The table below gives skill modifiers and climbing speeds for some common climbs. In most cases, use the speeds in the "Regular" column. The "Combat" column is for climbs inspired by rage or terror, which always cost at least 1 FP – or *double* the FP cost given in an adventure or assessed by the GM. Climbs in combat require a Move maneuver.

Type of Climb	*Modifier*	*Combat*	*Regular*
Ladder going up	no roll	3 rungs/sec	1 rung/sec
Ladder going down	no roll	2 rungs/sec	1 rung/sec
Ordinary tree	+5	1 ft/sec	1 ft/3 sec
Ordinary mountain	0	1 ft/2 sec	10 ft/min
Vertical stone wall	-3	1 ft/5 sec	4 ft/min
Modern building	-3	1 ft/10 sec	2 ft/min
Rope-up	-2	1 ft/sec	20 ft/min
Rope-down			
(w/o equipment)	-1	2 ft/sec	30 ft/min
(w/ equipment)	-1	12 ft/sec	12 ft/sec

Digging

Digging rate depends on the type of soil, the digger's Basic Lift (that is, ST×ST/5), and the quality of the tools available.

Loose Soil, Sand, etc.: A man can dig 2×BL cubic feet per hour (cf/hr).

Ordinary Soil: A man can dig BL cf/hr. One man with a pick can break up 4×BL cf/hr, making it into loose soil, which is easier to remove. The most efficient way to dig is with one man with a pick, and two shovelers clearing behind him.

Hard Soil, Clay, etc.: Must be broken up first by a pick, at 2×BL cf/hr;

Different Gravity

A world's gravity is measured in "Gs," with 1G being Earth-normal conditions. In comparison, Mars has 0.38G and the Moon has 0.17G.

Microgravity is extremely low gravity (e.g., that of an asteroid or small moon) – for game purposes, anything below 0.1G.

Zero gravity is weightlessness, or "free fall," as found in space and aboard any spacecraft not spinning, accelerating, or otherwise generating artificial gravity.

In higher or lower gravity, *mass* stays the same, but *weight* changes.

Encumbrance and Move in Different Gravity

If local gravity is more than 1G, multiply the sum of your body weight and the weight of everything you're carrying by (local gravity in Gs)-1. This is the extra weight you're carrying due to high gravity. Add this to your encumbrance when determining Move.

Example: You weigh 150 lbs. and are carrying 30 lbs. of gear. On a 1.2-G world, that amounts to an *extra* weight of (150 + 30) × (1.2 - 1) = 36 lbs. Since you're already carrying 30 lbs., your total encumbrance is 66 lbs.

If local gravity is less than 1G, multiply the weight of the gear you're carrying by the local gravity, and use the modified weight to determine your encumbrance. There is a similar reduction in your body weight; this does not affect encumbrance, but it lets you jump further (see below). In very low gravity, you may be able to move faster than your Basic Move by making a series of running broad jumps instead of walking!

In *zero* gravity, you float in space (unless using magnetic boots, thrusters, etc.). If you can't fly, you must push off from a solid surface to move. Your Move when doing so is equal to ST/2, rounded down. You will keep going at that speed until you grab or collide with something!

Actions in Different Gravity

In gravities other than 1G, the jumping rules (p. 352) need modification. Multiply your normal jumping distances by the ratio of 1G to local gravity. For instance, under 1.25G, you jump 1/1.25 = 0.8 times as far, while under 0.2G, you jump 1/0.2 = 5 times as far. (*Exception:* Do not multiply the bonus high-jump distance you get from a running start!) If this lets you jump at least twice as far as normal, use the rules under Super Jump (p. 89) to determine how fast you can move by bounding along.

When throwing (p. 355), multiply distance by the ratio of 1G to local gravity, just as you would for jumping. *Damage* from thrown objects does not change, as this is based on mass.

Gravity also affects falls. Multiply terminal velocity by local gravity. See *Falling* (p. 431) for what this implies.

In zero gravity, your skills and DX rolls are affected as well; see *Free Fall* (p. 197). This does *not* apply when firing beam weapons (unless they have Recoil 2 or more) or operating vehicles or tools specifically designed for zero gravity (e.g., a spacecraft).

G-Increments and Attribute Penalties

If local gravity differs from your home gravity (see *Home Gravity*, p. 17), you might become disoriented and suffer physiological effects. The change in gravity you can tolerate without penalties is your "G-Increment." This is 0.2G unless you have the Improved G-Tolerance advantage (p. 60).

In higher or lower gravity than usual, count the number of G-Increments from your home gravity, rounding down. This determines the penalties you suffer. For instance, an Earth native used to 1G treats 0.81G to 1.19G as zero G-Increments, but 0.8G or 1.2G counts as one G-Increment.

DX: You are at -1 DX per G-Increment of difference (-1 per *two* full G-Increments, if you have the G-Experience advantage, p. 57). This applies to activities that require agility or judging ballistic trajectories; it affects Broadsword, Driving, and Guns, but not Beam Weapons or Lockpicking.

IQ: You are at -1 IQ per *two* full G-Increments of *higher* gravity, due to reduced blood flow to the brain and general fatigue. Lower gravity has no effect.

HT: You are at -1 HT per *two* full G-Increments of *higher* gravity, because the heart has to work harder. Lower your FP score by the same amount. There is no effect in lower gravity – although microgravity or zero gravity might cause space sickness (see *Space Adaptation Syndrome*, p. 434), or even have lasting ill effects in the long term.

See *Temporary Attribute Penalties* (p. 421) to learn how attribute penalties affect secondary characteristics and skills.

and then shoveled at 2×BL cf/hr. A lone man with both pick and shovel can only remove 0.6×BL cf/hr – he loses time switching between tools.

Hard Rock: Must be broken by a pick at BL cf/hr (or slower, for very hard rock!), and then shoveled at BL cf/hr.

All of the above assumes iron or steel tools! *Halve* speeds for wooden tools (common at TL5 and below). *Divide by 4* (or more) for improvised tools – bare hands, mess kits, etc.

Time Required and Fatigue Cost

To find the time required to dig a given hole, find the volume of the hole in cubic feet by multiplying height × width × depth (all in feet). Then divide the number of cubic feet by the digging rate to find the hours of work required.

Each hour of work costs 1 FP for loose soil, 2 FP for ordinary soil, 3 FP for hard soil, and 4 FP for hard rock.

Hiking

Sustainable cross-country speed on foot depends on ground Move. Start with Basic Move and reduce it for encumbrance (see *Encumbrance and Move*, p. 17), injury (see *General Injury*, p. 419), and exhaustion (see *Lost Fatigue Points*, p. 426), as applicable. The distance in miles you can march in one day, under ideal conditions, equals 10 × Move.

If you have the Enhanced Move (Ground) advantage, you may apply your movement multiple to this distance. For instance, Enhanced Move 1 (Ground) multiplies Move by two, doubling daily marching distance. See *Enhanced Move* (p. 52).

A successful roll against Hiking skill (p. 200) increases marching distance by 20%. Roll daily. A group led by someone with Leadership skill at 12+ may make a single roll against the group's *average* Hiking skill. (Hiking defaults to HT-5 for those who have not studied it.) Success lets the entire group march 20% farther; failure means the whole group must forgo the bonus.

When these rules result in different speeds for different members of a party, the party must either move at the speed of its *slowest* member or split up. Note that a party that has opted to make a single Hiking roll for the entire group has already chosen not to split up!

Terrain

Once you know your ideal daily mileage, modify it for terrain as follows:

Very Bad: Deep snow, dense forest, jungle, mountains, soft sand, or swamp. ×0.20.

Bad: Broken ground (including streams), forest, or steep hills. ×0.50.

Average: Light forest or rolling hills ×1.00.

Good: Hard-packed desert or level plains. ×1.25.

Roads

In fine weather, most roads count as Average terrain, regardless of the surrounding terrain. The best roads might even count as Good terrain, giving a bonus.

In rain, low-quality roads – unsurfaced dirt or gravel – turn to mud. Treat them as Very Bad terrain. Better roads behave as Average (but never Good) terrain in the rain.

In snow or ice, treat roads as Average terrain, but apply the movement penalties given under *Weather* (above) unless the road is cleared.

Time Required and Fatigue Cost

These rules assume you spend the entire day preparing for your hike, hiking, or resting, leaving *no* time for study or other activities. This is true however small your daily mileage – the heavier your load and the worse the traveling conditions, the more slowly you walk and the more frequently you stop to rest.

Should you interrupt your travels for adventuring matters, you will be missing FP when you stop. See *Fatigue Costs* (p. 426) for details.

When these rules result in different speeds for different members of a party, the party must either move at the speed of its slowest member or split up.

Weather

Weather conditions can further modify distance traveled:

Rain: Rain halves *off-road* speed in any terrain. See *Roads* (below) for the effects of rain on roads.

Snow: Ankle-deep snow halves speed in any terrain. Anything deeper divides speed by 4 or more. *Exception:* Skis allow travelers to treat any depth of snow as Average terrain. Replace Hiking skill with Skiing skill (p. 221) when traveling on skis.

Ice: Cold combined with moisture – due to rain, sleet, snowmelt, etc. – results in ice. A coating of ice halves speed in any terrain. *Solid* ice, such as a frozen lake or river, is effectively its own terrain type; treat it as Bad terrain. *Exception:* Treat solid ice as Good terrain for those with skates. Skating skill (p. 220) replaces Hiking skill when traveling on skates.

Holding Your Breath

Adventurers often need to hold their breath – whether to dive or to survive poison gas, strangulation, vacuum, etc. Your HT determines the length of time you can hold your breath, as follows:

No Exertion (e.g., sitting quietly or meditating): HT×10 seconds.

Mild Exertion (e.g., operating a vehicle, treading water, or walking): HT×4 seconds.

Heavy Exertion (e.g., climbing, combat, or running): HT seconds.

These times assume you have one second to take a deep breath (requires a Concentrate maneuver in combat). Multiply all times by 1.5 if you hyperventilate first – or by 2.5 if you hyperventilate with pure oxygen. A successful roll against Breath Control skill (p. 182) multiplies these times by a further factor of 1.5. However, if you are surprised and don't have a chance to take a deep breath – e.g., when a gas grenade goes off in combat – *halve* these times instead.

Regardless of circumstances, each level of the Breath-Holding advantage (p. 41) doubles the time you can hold your breath.

At the end of this time, you start to lose 1 FP per second. At 0 FP, you must make a Will roll every second or fall unconscious, and are likely to die unless you are rescued. See *Suffocation* (p. 436) for details.

Jumping

When you want to jump over something with a Size Modifier *3 less than yours or smaller* (which encompasses most "ordinary" obstacles), the GM should say, "Okay, you jumped over it," and get on with play. Such jumps succeed automatically. But when the obstacle seems really significant, or if the GM put it there as a deliberate hazard, use the following rules.

Jumping Distance

Your Basic Move determines jumping distance, as follows:

High Jump: (6 × Basic Move) - 10 inches. For example, a Basic Move of 6 lets you jump 26" straight up. For a *running* jump, add the number of yards you run to Basic Move in this formula. Maximum running high-jump height is twice standing high-jump height.

Broad Jump: (2 × Basic Move) - 3 feet. For example, a Basic Move of 6 lets you jump 9 feet from a standing start. For a *running* jump, add the number of yards you run to Basic Move in this formula. Maximum running broad-jump distance is twice standing broad-jump distance.

Those with the Enhanced Move (Ground) advantage (p. 52) may apply their movement multiplier to Basic Move before inserting it into these formulas when they have a running start. This is *instead* of adding the number of yards run! For instance, a horse with Basic Move 6 and Enhanced Move 1 makes running jumps as if its Basic Move were 12.

Those who have Super Jump (p. 89) double the *final* jumping distance for each level of that advantage. This is cumulative with the effects of Enhanced Move!

Remember that 12 inches equal one foot, and that 3 feet equal one yard (or one *hex* on a battle map).

To jump over a larger obstruction (e.g., a chair) or onto something (e.g., a table) during a fight takes your entire turn and requires a Move maneuver. Unless the jump is *extreme*, the GM will assume you can make the jump. (Don't interrupt a battle to calculate jumping distance every time somebody jumps onto a chair!)

However, you must make a DX roll when you make a vertical jump or a long horizontal one. A difficult jump (into a pit, for instance) might give -1 to -5 to this DX roll. The GM determines whether you must roll, and at what penalty. On a failure, you fall. It takes two Change Posture maneuvers to stand up again. On a critical failure, you fall off the thing you jumped onto, or land badly if you were jumping down, and take normal falling damage for that height (see *Falling*, p. 431).

To clamber onto a vertical obstacle without risking a DX roll, take two consecutive Move maneuvers. Success is automatic.

Optional Jumping Rules

The following rules for jumping are *optional*. Only use them if you enjoy extra detail!

ST and Jumping

Basic Move is a ready-made measure of jumping ability – after all, it measures running speed, and running is just a series of rapid hops. However, unnaturally strong supers and monsters in fiction can often make mighty leaps without being speedsters. To emulate this, the GM may allow those with Basic Lift in excess of body weight to use the *higher* of ST/4 (round down) or Basic Move in the jumping distance formulas.

Jumping with Encumbrance

For added realism, multiply jumping distances by the encumbrance factors given under *Encumbrance and Move* (p. 17): ×1 for None, ×0.8 for Light, ×0.6 for Medium, ×0.4 for Heavy, and ×0.2 for Extra-Heavy.

Jumping During Combat

The jumping distance formulas assume you take the time to crouch and prepare for the jump. In combat, this takes two consecutive Concentrate maneuvers. Halve all distances if you jump without such preparation.

If you jump over a small obstacle during a fight (anything with a Size Modifier 3 less than yours or smaller), you must use a Move maneuver, and the jump costs one extra movement point.

Jumping Skill

If you have the Jumping skill (p. 203), you may *substitute* half your skill level, rounded down, for Basic Move in the distance formulas. In addition, you may roll against Jumping instead of DX whenever you make a difficult jump.

Lifting and Moving Things

Basic Lift – ST×ST/5 pounds – governs the weight you can pick up and move. The GM may let multiple characters add their BL (*not* their ST) whenever it seems reasonable; e.g., to carry a stretcher or pull a wagon.

One-Handed Lift: 2×BL (takes two seconds).

Two-Handed Lift: 8×BL (takes four seconds).

Shove and Knock Over: 12×BL. *Double* this if you have a running start. The GM can also make allowances for precariously balanced objects, to make them easier to tilt.

Carry on Back: 15×BL. Thus, you can carry more than you can lift by yourself . . . but every *second* that your encumbrance is over 10×BL (that is, Extra-Heavy encumbrance), you lose 1 FP.

Shift Slightly: Depending on your footing and the way you are braced, you could shift or rock 50×BL.

Pulling and Dragging

When you pull a load behind you unassisted, use its full weight. Halve effective weight if you are pulling a sledge over snow or ice, divide effective weight by 10 for a two-wheeled cart, and divide effective weight by 20 for a four-wheeled wagon. (Remember to add the weight of the sledge, cart, or wagon to that of the load before dividing!)

In all cases, if the surface is smooth and relatively level – for instance, a concrete floor, a proper road, or a frozen lake – *halve* the effective weight of the load. This is cumulative with the effects of a sledge, cart, or wagon.

Final effective weight pulled, after all modifiers, cannot exceed 15×BL if you are to have any hope of moving the object at all. Determine your encumbrance level using *effective* weight, and work out Move normally.

Lifting and Moving Things During Combat

In combat, you can pick up an item that weighs no more than your Basic Lift by taking a one-second Ready maneuver. To pick up anything heavier requires multiple, consecutive Ready maneuvers: two if using one hand, four if using two hands. To pick up an unwilling *character,* you must take a second to grapple him first (see *Grappling,* p. 370). He may attempt to break free during the time it takes you to pick him up!

To kick, body-block, shove, or otherwise shift an obstacle in combat requires an Attack maneuver. You can move or knock over up to 12×BL this way. If you have enough space to run your full Move, you can knock over twice this weight (24×BL) by slamming into it at a run. This requires a Move maneuver. These rules are for *inanimate* objects; see *Slam* (p. 371) for rules governing attempts to knock over someone who can actively resist.

If using a combat map, be sure to mark the map or place a counter to indicate an object that has been knocked over. This is especially important for a feature that was drawn on the map! Likewise, objects picked up by fighters should be removed from the map.

In all cases, if an attempt seems reasonable, do not pause the battle to compare weight to BL. Use common sense. Make it fun!

Lifting Skill

A successful roll against Lifting skill (p. 205) increases your Basic Lift by 5% times your margin of success for the purpose of picking up heavy objects. For instance, if you have Lifting at 14, a roll of 9 lets you lift an extra 25%. Roll once per lift.

Running

Your running speed, or ground Move, is equal to your Basic Move score modified for encumbrance – see *Encumbrance and Move* (p. 17). In combat, running is just a series of Move maneuvers. Use the more detailed rules below when it is important to know whether the heroes catch the plane, escape the savage pygmies, or whatever.

Sprinting

Sprinting is all-out running. It is very fast, but also fatiguing (see *Fatigue Cost*, below). Use it when you need to cover a short distance *quickly*, and can afford to arrive at your objective somewhat fatigued.

You can sprint if you run *forward* for two or more seconds. Add 20% to your Move *after one second*. For instance, with a Move of 7, you could sprint at 8.4 yards/second after running for one second at 7 yards/second.

On a battle map, where movement involves discrete one-yard hexes, drop all fractions to get a round Move score; in the example above, you would have Move 8. Assume that even the slowest sprinter gets +1 Move. Thus, sprinters with Move 9 or less can move one extra hex on a battle map.

If you have Enhanced Move (Ground), you can accelerate by your Basic Move every second until you reach top speed. Use your Enhanced Move multiplier *instead* of the 20% bonus above. For instance, with Basic Move 7 and Enhanced Move 2, you run at Move 7 the first second, Move 14 the next second, Move 21 the third second, and your top speed of Move 28 in the fourth second.

You may only move at your maximum sprinting speed if the ground is good and you are running more or less straight at some goal. Any deviation from "forward" movement requires you to run at normal ground Move for one second before you can resume sprinting.

Paced Running

If you need to run a long distance, you will want to pace yourself to avoid exhaustion. Paced running averages exactly *half* the sprinting speed calculated above. For instance, with a ground Move of 7, you would run at 4.2 yards/second on good ground; thus, you could run a 7-minute mile.

Fatigue Cost

After every 15 seconds of sprinting or every minute of paced running, roll against the *higher* of HT or Running skill (p. 218). On a failure, you lose 1 FP. Once you are reduced to 1/3 or less your FP, halve your Move for any kind of running; see *Fatigue* (p. 426).

Note that since paced running is *half* as fast as sprinting but burns FP at *one-quarter* the rate, you can run twice as far before you run out of energy. This is not true for those with the Machine meta-trait (p. 263), because they do not fatigue – in general, such characters will always sprint.

Flying

When flying, use the *Hiking* (p. 351) and *Running* rules with these changes:

- **Substitute "air Move" (equal to twice Basic Speed, dropping all fractions) for "ground Move"** (equal to Basic Move). Apply modifiers **for encumbrance,** injury, and fatigue exactly as you would for ground Move.
- Substitute "Enhanced Move (Air)" for "Enhanced Move (Ground)." For high-speed flight ("running"), handle acceleration with Enhanced Move as described under *Sprinting*.
- Substitute "Flight skill" (p. 195) for "Hiking skill" and "Running skill."
- Ignore terrain, but note that wind and other weather conditions can have comparable effects.

Swimming

Unless you are Amphibious (p. 40) or Aquatic (p. 145), you must roll against Swimming skill (p. 224) any time you enter water over your head. Swimming defaults to HT-4. Roll when you first enter the water, and again every five minutes.

Modifiers: +3 if you entered the water intentionally; a penalty equal to *twice* your encumbrance level (e.g., Heavy encumbrance gives -6); +1 if you are Overweight, +3 if Fat, or +5 if Very Fat (see *Build*, p. 18).

On a failure, you inhale water! Lose 1 FP and roll again in five seconds – and so on, until you drown, are rescued (see *Lifesaving*, below), or make a successful Swimming roll and get your head above water. If you successfully recover, roll again in one minute; if you succeed, go back to making rolls five minutes apart. Yes, you *can* shout for help!

You may try to get rid of armor, etc. after making your first successful Swimming roll. Roll vs. DX for each item you try to remove; roll at -4 to remove shields, helmets, or torso armor. A failed roll means you inhale water, with penalties as above.

Once you reach 0 FP, you must make a Will roll every second or fall unconscious, and are likely to die unless you are rescued. See *Suffocation* (p. 436) for details.

Swimming Speed

Land-dwellers such as humans have water Move equal to Basic Move/5 (round down), although it is possible to modify this slightly; see *Move in Other Environments* (p. 18). Minimum water Move for such characters is 1 yard/second.

Amphibious and Aquatic beings have water Move equal to their full Basic Move.

When swimming long distances, use a 10-second time scale. The number of yards you can swim in 10 seconds is equal to 10 times your water Move, modified downward for encumbrance (see *Encumbrance and Move*, p. 17). For instance, water Move 1 and Heavy encumbrance would let you swim four yards in 10 seconds.

Fatigue Cost

After every minute of top-speed swimming, roll against the *higher* of HT or Swimming skill. On a failure, you lose 1 FP. Once you are reduced to 1/3 or less your FP, halve your water Move; see *Fatigue* (p. 426).

Catching

If someone throws an object *at* you, you may make an active defense roll to avoid it. However, if he deliberately **throws it *to* you – by successfully** lobbing it into your general area – you can try to catch it. Roll against DX or a suitable Sports skill to make the catch, at -4 if you are not taking a Wait maneuver, but at +1 per two full points by which the thrower made his roll. This counts as a parry with your catching hand.

You can also attempt to *intercept* a thrown object en route to a catcher. Treat this as a parry against a thrown weapon (see *Parrying*, p. 376). On a success, you snatch the thrown object out of the air.

If you are swimming slowly, or just staying afloat, make this roll every 30 minutes.

Lifesaving

You can use the Swimming skill to rescue a drowning person. Make a Swimming roll at -5, plus or minus the difference in ST between you and the person you are rescuing. If the players think of good lifesaving techniques, the GM may give them a bonus to this roll.

On a failure, you inhale water and lose 1 FP, but may try again after one minute. On a critical failure, the victim nearly drowned you! This costs 6 FP, and you must break off the rescue attempt.

THROWING

You can throw anything you can pick up – that is, anything with a weight of 8×BL or less. If the object you wish to throw is not already in your hands, you must take one or more Ready maneuvers to pick it up. See *Lifting and Moving Things* (p. 353) for details.

Throwing an object during combat – whether as an attack or not – requires an Attack maneuver. You can throw objects that weigh up to 2×BL using one hand; heavier objects require a two-handed throw. Roll against DX-3 to hit a specific target, or against DX to lob something into a general area. Apply the usual modifiers for target size, speed, and distance.

Throwing Distance

To avoid slowing down the game with math, the GM should allow any throw he deems reasonable . . . but when you *need* to know the exact distance you can throw an object, use the following procedure:

1. Divide the object's weight in pounds by your Basic Lift to get the "weight ratio."
2. Find the weight ratio in the *Weight Ratio* column of the table below. If it falls between two values, use the *higher* value.
3. Read across to the *Distance Modifier* column and find the "distance modifier."
4. Multiply your ST by the distance modifier to find the distance in yards you can throw the object.

Weight Ratio	*Distance Modifier*	*Weight Ratio*	*Distance Modifier*
0.05	3.5	2.0	0.30
0.10	2.5	2.5	0.25
0.15	2.0	3.0	0.20
0.20	1.5	4.0	0.15
0.25	1.2	5.0	0.12
0.30	1.1	6.0	0.10
0.40	1.0	7.0	0.09
0.50	0.8	8.0	0.08
0.75	0.7	9.0	0.07
1.0	0.60	10	0.06
1.5	0.40	12	0.05

Example: You have ST 12, giving a BL of 29 lbs. You need to throw a 120-lb. body over a two-yard pit. Divide weight by BL: 120/29 = 4.1. This falls between 4.0 and 5.0 in the *Weight Ratio* column, so treat it as 5.0. The associated distance modifier is 0.12. Multiplying by ST, your range is 0.12 × 12 = 1.4 yards. Oops! The body just hit the bottom of the pit.

Damage From Thrown Objects

Thrown objects inflict *thrust* damage for your ST (see *Damage Table*, p. 16), modified for weight as shown on the table below. Damage is usually crushing, but the GM may rule that a sharp object does cutting, piercing, or impaling damage instead. A fragile object (or a thrown character) takes the same amount of damage it inflicts; roll damage separately for the object and the target.

Weight	*Damage*
Up to BL/8	Thrust, -2 per die
Up to BL/4	Thrust, -1 per die
Up to BL/2	Thrust
Up to BL	Thrust, +1 per die
Up to 2×BL	Thrust
Up to 4×BL	Thrust, -1/2 per die (round down)
Up to 8×BL	Thrust, -1 per die

Example: You have ST 28, which gives you a BL of 157 lbs. and a thrust damage of 3d-1. You hit a foe with a hurled 50-lb. bag of cement. It is between BL/4 (39 lbs.) and BL/2 (78 lbs.). As shown on the table above, it does straight thrust damage, or 3d-1.

Throwing Skill and Throwing Art

When you throw an object that fits into the palm of your hand – such as a bottle, rock, or grenade – you may roll against Throwing skill (p. 226) to hit a target *or* a general area. Furthermore, if you know Throwing at DX+1 level, add +1 to ST before you multiply it by the distance modifier. Add +2 to ST if you know Throwing at DX+2 or better.

If you have Throwing Art skill (p. 226), you can use it to throw *anything*. Roll against skill to hit. If you know Throwing Art at DX level, add +1 to ST before you multiply it by the distance modifier, and add +1 *per die* to thrust damage. These bonuses increase to +2 if you know Throwing Art at DX+1 or better.

Thrown Weapons

The rules above are for throwing rocks, bodies, televisions . . . anything but *weapons*. Hurled weapons differ in three important ways:

1. Thrown weapons use Thrown Weapon skills (p. 226) to hit, not DX or Throwing (but Throwing Art *does* allow you to throw weapons).

2. Many throwing weapons travel significantly farther than "ordinary" objects due to streamlining and stabilization. Others have *less* range, due to the way they are thrown. For instance, you can hurl a throwing knife as far as these rules suggest, but the range at which it will hit point-first and inflict damage is considerably shorter.

3. Throwing weapons have points, edges, dense striking heads, etc. that focus the force of impact. They almost always do more damage than these rules would indicate.

Extra Effort

Through sheer force of will, you can push your body past its usual limits when you perform physical tasks. This is called "extra effort." Note that if you have the Machine meta-trait, you cannot use extra effort!

You can use extra effort to increase Basic Lift (but *not* ST itself) when digging or lifting; daily mileage when hiking; Move when running or swimming; distance (but *not* Basic Move itself) when jumping; and ST for the purposes of throwing, making a single

ST roll, or drawing or cocking a bow or crossbow that's too strong for you. You *cannot* use extra effort to increase the time you can hold your breath – that would be self-defeating!

To apply extra effort, make a Will roll.

Modifiers: -1 per 5% increase in capabilities (e.g., to add 10% to ST, roll at -2). If you are fatigued, apply a penalty equal to the missing FP. Roll at +5 if you are motivated by fear, anger, or concern for a loved one (GM's decision, but you must usually *fail* a Fright Check or a self-control roll for a suitable disadvantage, or be the victim of a successful Intimidation attempt, to get this bonus).

Extra effort costs FP whether you succeed or fail. Instantaneous feats (e.g., jumps and throws) cost a flat 1 FP per attempt. Ongoing tasks (digging, running, swimming, etc.) require repeated extra effort rolls, and cost 1 FP *per roll*. Hiking works differently – see below. Pay the FP cost for extra effort immediately after you attempt your Will roll. Note that the FP spent on extra effort do not penalize *this* attempt, but give a penalty to *future* attempts until you recover the FP.

On a success, you gain the desired increase in your physical capabilities. This does not guarantee success at the task at hand – you could still fail the DX roll for an extra-effort jump, for instance. On a critical success, you do not have to pay FP for your extra effort.

On a failure, you achieve only what you would have accomplished *without* extra effort.

A critical failure means you lose HP equal to the FP spent on the attempt – including any FP the task would have cost without extra effort – and the task *fails automatically!* If you roll a natural 18, you must also make an immediate HT roll to avoid acquiring a temporary disadvantage appropriate to the task (see below for examples). Handle recovery as described in *Duration of Crippling Injuries* (p. 422). A sufficiently bad HT roll can result in a *permanent* disadvantage!

Notes for Specific Physical Tasks

Instead of rolling against Will to use extra effort, you may make a Will-based roll against a relevant skill (Hiking, Jumping, Lifting, Running, Swimming, or Throwing, as applicable), if that would be better.

Digging: For every hour of digging, make an extra-effort roll and pay 1 FP. This *adds* to the usual FP cost. On a critical failure, the injury is to your back, and will heal only with rest (not First Aid); on an 18, you temporarily acquire the Bad Back disadvantage (p. 123).

Hiking: Make one extra-effort roll per day. Extra effort increases the FP you suffer by two when you stop on the march (see *Fatigue*, p. 426). Assess injury due to critical failure at the end of the day, and base it on the modified FP penalty. For instance, if you would normally be missing 5 FP when you stopped, you would be missing 7 FP if you used extra effort – and if you critically failed, you would end the day with 7 *HP* of injury! When using Hiking skill, make a *single* Will-based Hiking roll at -1 per 5% extra mileage beyond the basic +20% for a successful Hiking roll (-1 for +25%, -2 for +30%, and so on).

Jumping: On a critical failure, apply the injury to the foot or leg (GM's option, or roll randomly); on an 18, you temporarily acquire the Crippled Leg disadvantage (see *Lame*, p. 141).

Lifting and Moving Things: For every minute of continuing effort, make an extra-effort roll and pay 1 FP. (This cost *adds* to the 1 FP per second for carrying encumbrance over 10×BL, if applicable.) Handle critical failures as described for digging. When using Lifting skill, make a *single* Will-based Lifting roll, at -1 per 10% extra Basic Lift. This is *instead* of the usual 5% bonus per point of success.

Running: For every 15 seconds of sprinting or minute of paced running, make an extra-effort roll and pay 1 FP. This *adds* to the FP cost for failed HT rolls while running! On a critical failure, apply the injury to one of your legs; on an 18, you temporarily acquire the Crippled Leg disadvantage (see *Lame*, p. 141).

Swimming: For every minute of swimming, make an extra effort roll and pay 1 FP. This *adds* to the FP cost for failed HT rolls while swimming.

Throwing: Increases to ST affect both damage and distance, but *not* Basic Lift for the purpose of what you can throw in the first place. For that, make a separate extra-effort lifting attempt! Add bonuses for Throwing or Throwing Art skill *after* those for extra effort.

Optional Rule: Extra Effort in Combat

At the GM's option, fighters can use extra effort in combat. These rules work differently from those above – mainly to avoid bogging down combat with extra die rolls and calculations.

You must declare that you are using extra effort and spend the required FP *before* you make your attack or defense roll. A critical failure on the roll causes 1 HP of injury to the arm (if blocking, parrying, or attacking with a shield, weapon, or hand) or leg (if dodging or kicking) *in addition to* the usual critical miss results. DR does not protect you from this damage!

Through sheer force of will, you can push your body past its usual limits when you perform physical tasks.

Feverish Defense: If you take any maneuver other than All-Out Attack, you can spend 1 FP to get +2 to a single active defense roll. (You *can* use this bonus to offset the penalty for parrying multiple times with one hand; see *Parrying*, p. 376.)

Flurry of Blows: If you take an Attack maneuver, you can *halve* the penalty for Rapid Strike (see *Rapid Strike*, p. 370) by spending 1 FP *per attack*.

Mighty Blows: If you take an Attack maneuver in melee combat, you can spend FP to gain the damage bonus of an All-Out Attack (Strong) (see *All-Out Attack*, p. 365) *without* sacrificing your defenses. This costs 1 FP *per attack*.

You cannot use Flurry of Blows and Mighty Blows at the same time!

Sense Rolls

"Sense rolls" include Vision rolls, Hearing rolls, Taste/Smell rolls, and all rolls to use special senses such as Scanning Sense (p. 81) and Vibration Sense (p. 96).

To notice something using a given sense, roll against your Perception score, modified by the applicable Acute Senses advantage (p. 35): Acute Vision for Vision rolls, Acute Hearing for Hearing rolls, and so on.

Comprehension Rolls: A successful Sense roll means you noticed something. That is often sufficient, but in some cases, the GM may require a second roll to *understand* what you have sensed; e.g., to realize that the "owl hoot" you heard is really an Indian warrior, or that the faint scent you noticed belongs to the flower of a man-eating plant. This roll is against IQ for details that anyone could figure out, or against an appropriate skill if the significance would be lost on anyone but an expert.

Danger Sense: If you have the Danger Sense advantage (p. 47) and fail a Sense roll or comprehension roll to notice something *dangerous*, the GM will secretly make a Perception roll for you. On a success, you sense the danger anyhow!

Vision

Make a Vision roll whenever it is important that you *see* something.

Modifiers: Any Acute Vision bonus; +3 for Hyperspectral Vision; modifiers for the size and range of the target (see p. 550); -1 to -9 in partial darkness. In *total* darkness, Vision rolls are impossible without special advantages or technological aids. To spot something in plain sight – e.g., a car coming toward you on the road – roll at +10. This does *not* apply to attempts to spot hidden objects, read text, identify faces, etc.

When you try to spot something that is deliberately hidden, the GM may treat this roll as a Quick Contest against a concealment skill (Camouflage, Holdout, etc.), and may allow – or *require* – a skill such as Observation or Search to replace Perception for the roll.

Note that the curvature of a planet blocks vision beyond the horizon. The normal horizon on an Earth-sized planet is about three miles for an observer five to six feet in height. The GM should increase this for taller observers or those in elevated positions. There is no horizon in space!

Useful Advantages: Night Vision cancels -1 in partial darkness penalties per level, and Dark Vision lets you *ignore* darkness penalties. Peripheral Vision gives you a Vision roll to see anything that is not absolutely, positively, directly behind you – and 360° Vision lets you see even that! Telescopic Vision cancels -1 in range penalties per level.

Limiting Disadvantages: Bad Sight gives -6 to Vision rolls to spot items more than one yard away if you are nearsighted, or items *within* one yard if you are farsighted. Restricted Vision prevents you from noticing anything that isn't in the direction you are looking. Blindness means you can see nothing!

Hearing

Make a Hearing roll whenever it is important that you hear a sound. The GM will often require a separate IQ roll to make out speech, especially in a foreign language.

Modifiers: Any Acute Hearing bonus; +4 for Discriminatory Hearing; -4 for Hard of Hearing. The GM may make this roll easier or harder, depending on the loudness of the sound, surrounding noises, etc.

The range at which you can hear a sound at no penalty is given on the table below. For each step by which you are closer than this, apply +1 to the roll, while for each step by which you are more distant, apply -1. For instance, to hear normal conversation at 8 yards would require a roll at -3.

When you try to hear someone who is attempting to move silently, the GM may treat this roll as a Quick Contest against his Stealth skill. If you are *actively* listening for such activity, the GM may allow you to substitute Observation skill for Perception.

Useful Advantages: Parabolic Hearing allows you to hear distant sounds as if they were nearby. Subsonic Hearing and Ultrahearing can detect sounds that are inaudible to normal humans.

Limiting Disadvantage: If you suffer from Deafness, you can hear nothing!

Hearing Distance Table

Sound	*Range (yards)*
Leaves rustling	1/4
Quiet conversation	1/2
Normal conversation	1
Light traffic	2
Loud conversation	4
Noisy office	8
Normal traffic	16
"Quiet" rock band	32
Heavy traffic	64
Jet takeoff	128
Very loud rock band	256
Metallica	512

Taste/Smell

Taste and smell are two manifestations of the same sense. Make a Taste roll to notice a flavor, or a Smell roll to notice a scent.

Modifiers: Any Acute Taste and Smell bonus; +4 for Discriminatory Smell or Taste (as applicable). The GM may modify this roll for a particularly strong or weak taste or odor, and may apply a penalty if it is specifically disguised.

Useful Advantages: In addition to giving a bonus to your roll, Discriminatory Smell and Discriminatory Taste can reveal sufficient detail to allow you to identify people, locations, and objects with precision equivalent to hearing or vision for a normal human.

Limiting Disadvantage: No Sense of Smell/Taste means that you cannot taste or smell *anything*.

Influence Rolls

An "Influence roll" is a *deliberate* attempt to ensure a positive reaction from an NPC. A PC with an appropriate "Influence skill" can always elect to substitute an Influence roll for a regular reaction roll in suitable circumstances (GM's decision). See *Reaction Rolls* (p. 494) for more on NPC reactions.

Decide which Influence skill you are using: Diplomacy, Fast-Talk, Intimidation, Savoir-Faire, Sex Appeal, or Streetwise. Choose wisely! The GM may allow other skills to work as Influence skills in certain situations (e.g., Law skill, when dealing with a judge). Then roll a Quick Contest: your Influence skill vs. the subject's Will.

Modifiers: All your personal reaction modifiers (although the GM or the skill description may rule that some modifiers do not apply); any specific modifiers given in the skill description; -1 to -10 for using an *inappropriate* Influence skill (GM's decision).

If you *win*, you get a "Good" reaction from the NPC – "Very Good" if you used Sex Appeal. On any other outcome, the NPC resents your clumsy attempt at manipulation. This gives you a "Bad" reaction – "Very Bad" if you attempted specious intimidation (see *Intimidation*, p. 202). *Exception:* If you used Diplomacy, the GM will also make a regular reaction roll and use the *better* of the two reactions. Thus, Diplomacy is relatively safe . . .

If the subject is Indomitable (p. 60), you *lose* automatically unless you have Empathy, Animal Empathy, Plant Empathy, or Spirit Empathy, as appropriate. Intimidation attempts against those with the Unfazeable advantage (p. 95) also fail automatically. On the other hand, you *win* automatically – no roll required – against those with Slave Mentality (p. 154).

Influencing the PCs

Influence rolls are designed to allow PCs to affect NPC reactions. The GM should *not* make Influence rolls on behalf of NPCs and tell the players how to react. Most players form an opinion of an NPC based on the GM's portrayal of the character, and few appreciate being told that they *must* roleplay a good reaction toward an NPC they do not like or trust.

This does not mean that NPCs cannot influence PCs! When an NPC makes a successful Influence roll against a PC, the GM should apply the NPC's margin of victory as a bonus or penalty (as appropriate) to the PC's die rolls when dealing with that NPC. For instance, if a beautiful spy beats the PC's Will by 3 using Sex Appeal, the hero might suffer -3 on self-controls roll for his Lecherousness and -3 to his Detect Lies skill where that spy is concerned. Be creative!

Psychological Warfare

You can use Propaganda skill for media manipulation, and Psychology skill for other "psyops." This is an Influence roll. Apply your *cause's* reaction modifiers rather than your own, and use the *average* Will of the target group in the Quick Contest.

Will Rolls

When you are faced with a stressful situation or a distraction, the GM may require you to roll against your Will to stay focused. On a success, you may act normally. On a failure, you submit to the fear, give in to the pressure, are distracted from your task, etc.

The effects of a failed Will roll in a stressful situation are often identical to those of a failed self-control roll for a mental disadvantage. This does not make Will rolls and self-control rolls interchangeable. Which kind of roll you must make depends on the cause of the stress, not on its effects.

If a *game-world event* causes negative effects (distraction, stunning, etc.) for *anyone* who fails a Will roll, you roll against Will just like anyone else – even if your self-control roll to resist identical effects from a mental disadvantage would be easier or harder.

If a *mental disadvantage* causes a negative effect on a failed self-control roll, you roll against your self-control number to resist – even if your Will roll to avoid that same effect under other circumstances would differ.

However, *modifiers* to self-control rolls and Will rolls to resist a particular effect are usually interchangeable. For instance, a drug that gives +2 to Will rolls to resist distraction would also give +2 to self-control rolls to resist disadvantages that result in distraction.

Fright Checks

A Fright Check is a Will roll made to resist *fear.* Fright Checks can occur as often or as rarely as the GM wishes. In a horror campaign where ordinary people meet shockingly gruesome Things, Fright Checks might be very common! With only minor adaptation, the GM can use these rules for awe, confusion, etc. as well as fear.

As a general rule, "ordinary" frightening things do not require Fright Checks. Fright Checks are for events so unusual and terrifying that they might stun or even permanently scar someone.

What counts as "ordinary" depends on the characters and the setting. This is one place where a character story can be helpful! An ordinary, 21st-century American might have to make Fright Checks for encounters with monsters, dead bodies, and the supernatural. A battle-hardened commando in the same game might not have to roll for dead bodies. And in a fantasy campaign, all these things may be quite normal . . . threatening, but normal. On the other hand, a fantasy character might have to make a Fright Check if transported to the 21st century and given a ride down the interstate . . .

Fright Check Modifiers

The following modifiers are cumulative.

Advantages and Disadvantages: Any Fearlessness bonus or Fearfulness penalty; +2 for Combat Reflexes, or -2 for Combat Paralysis. Other modifiers are conditional: -1 to -4 for Cowardice when your physical safety is at risk; +1 for Daredevil when charging into a scary situation; +1 for Higher Purpose when confronting threats you are sworn to oppose; +1 to +4 for Xenophilia when confronting monsters. Unfazeable characters don't make Fright Checks!

Bodies: +6 for a peaceful-looking body, prepared for burial; +2 for a dead body with no signs of violence; no modifier for most victims of violence; and from -1 to -3 for grisly mutilations. Apply another -6 if the victim was your Dependent!

Heat of Battle: +5 if you are in combat when the terrifying thing happens or you first notice it.

Monsters: A given monster might give a basic -1 to -10 to Fright Checks. For *hordes* of monsters, roll at -1 for 5 monsters, -2 for 10, -3 for 20, -4 for 50, and -5 for 100 or more.

Physical Circumstances: -1 if the body, monster, etc. *touches* you; +1 if you witness it at a great distance (at least 100 yards); or +3 if you view it remotely (using Clairsentience, closed-circuit TV, etc.). Apply -1 if the area is physically isolated, -1 at night or in the dark (or in daylight, if you're a night-dweller!), and -2 if you are (or *think* you are) alone.

Preparation: +1 if you have previous personal experience with this kind of threat; +1 per exposure to this *particular* threat in 24 hours; +1 to +3 (depending on the quality of the report) if you learned the details of this particular situation before you witnessed it.

The Rule of 14

If final, modified Will exceeds 13, reduce it to 13 for the purpose of the Fright Check. This means that a roll of 14 or more is automatically a failure. This rule does not apply to other Will rolls (resistance rolls, rolls to avoid distraction, etc.) – only to Fright Checks.

Fright Check Table

When you fail a Fright Check, roll 3d, add your margin of failure on the Fright Check, and consult the table below. This sometimes gives implausible results. The GM should either reroll these or change them to something more appropriate – especially for Fright Checks stemming from awe (e.g., divine beauty) or mind-warping complexity (e.g., otherworldly geometry or radical philosophical concepts) instead of fear.

Many of these results give a new mental quirk or disadvantage. The GM assigns this trait, which must be related to the frightening event. If possible, it should also be related to the victim's *existing* mental traits! Traits acquired this way reduce the victim's point value.

4, 5 – Stunned for one second, then recover automatically.

6, 7 – Stunned for one second. Every second after that, roll vs. unmodified Will to snap out of it.

8, 9 – Stunned for one second. Every second after that, roll vs. Will, plus whatever bonuses or penalties you had on your original roll, to snap out of it.

10 – Stunned for 1d seconds. Every second after that, roll vs. modified Will, as above, to snap out of it.

11 – Stunned for 2d seconds. Every second after that, roll vs. modified Will, as above, to snap out of it.

12 – Lose your lunch. Treat this as retching for (25 - HT) seconds, and then roll vs. HT each second to recover; see *Incapacitating Conditions* (p. 428). Depending on the circumstances, this may be merely inconvenient, or humiliating.

13 – Acquire a new mental quirk (see *Quirks*, p. 162). This is the only way to acquire more than five quirks.

14, 15 – Lose 1d FP, and take 1d seconds of stunning as per **10.**

16 – Stunned for 1d seconds, as per **10,** and acquire a new quirk, as per **13.**

17 – Faint for 1d minutes, then roll vs. HT each minute to recover.

18 – Faint as above, and roll vs. HT immediately. On a failed roll, take 1 HP of injury as you collapse.

19 – Severe faint, lasting for 2d minutes. Roll vs. HT each minute to recover. Take 1 HP of injury.

20 – Faint bordering on shock, lasting for 4d minutes. Also, lose 1d FP.

21 – Panic. You run around screaming, sit down and cry, or do something else equally pointless for 1d minutes. At the end of that time, roll vs. unmodified Will once per minute to snap out of it.

22 – Acquire a -10-point Delusion (p. 130).

23 – Acquire a -10-point Phobia (p. 148) or other -10-point mental disadvantage.

24 – Major physical effect, set by GM: hair turns white, age five years overnight, go partially deaf, etc. In game terms, acquire -15 points worth of physical disadvantages (for this purpose, each year of age counts as -3 points).

25 – If you already have a Phobia or other mental disadvantage that is logically related to the frightening incident, your self-control number becomes one step worse. If not, or if your self-control number is already 6, add a new -10-point Phobia or other -10-point mental disadvantage.

26 – Faint for 1d minutes, as per **18,** and acquire a new -10-point Delusion, as per **22.**

27 – Faint for 1d minutes, as per **18,** and acquire a new -10-point mental disadvantage, as per **23.**

28 – Light coma. You fall unconscious, rolling vs. HT every 30 minutes to recover. For 6 hours after you come to, all skill rolls and attribute checks are at -2.

29 – Coma. As above, but you are unconscious for 1d hours. Then roll vs. HT. If the roll fails, remain in a coma for another 1d hours, and so on.

30 – Catatonia. Stare into space for 1d days. Then roll vs. HT. On a failed roll, remain catatonic for another 1d days, and so on. If you have no medical care, lose 1 HP the first day, 2 the second, and so on. If you survive and awaken, all skill rolls and attribute checks are at -2 for as many days as the catatonia lasted.

31 – Seizure. You lose control of your body and fall to the ground in a fit lasting 1d minutes and costing 1d FP. Also, roll vs. HT. On a failure, take 1d of injury. On a critical failure, you also lose 1 HT *permanently.*

32 – Stricken. You fall to the ground, taking 2d of injury in the form of a mild heart attack or stroke.

33 – Total panic. You are out of control; you might do *anything* (the GM rolls 3d: the higher the roll, the more useless your reaction). For instance, you might jump off a cliff to avoid the monster. If you survive your first reaction, roll vs. Will to come out of the panic. If you fail, the GM rolls for another panic reaction, and so on!

34 – Acquire a -15-point Delusion (p. 130).

35 – Acquire a -15-point Phobia (p. 148) or other mental disadvantage worth -15 points.

36 – Severe physical effect, as per **24,** but equivalent to -20 points of physical disadvantages.

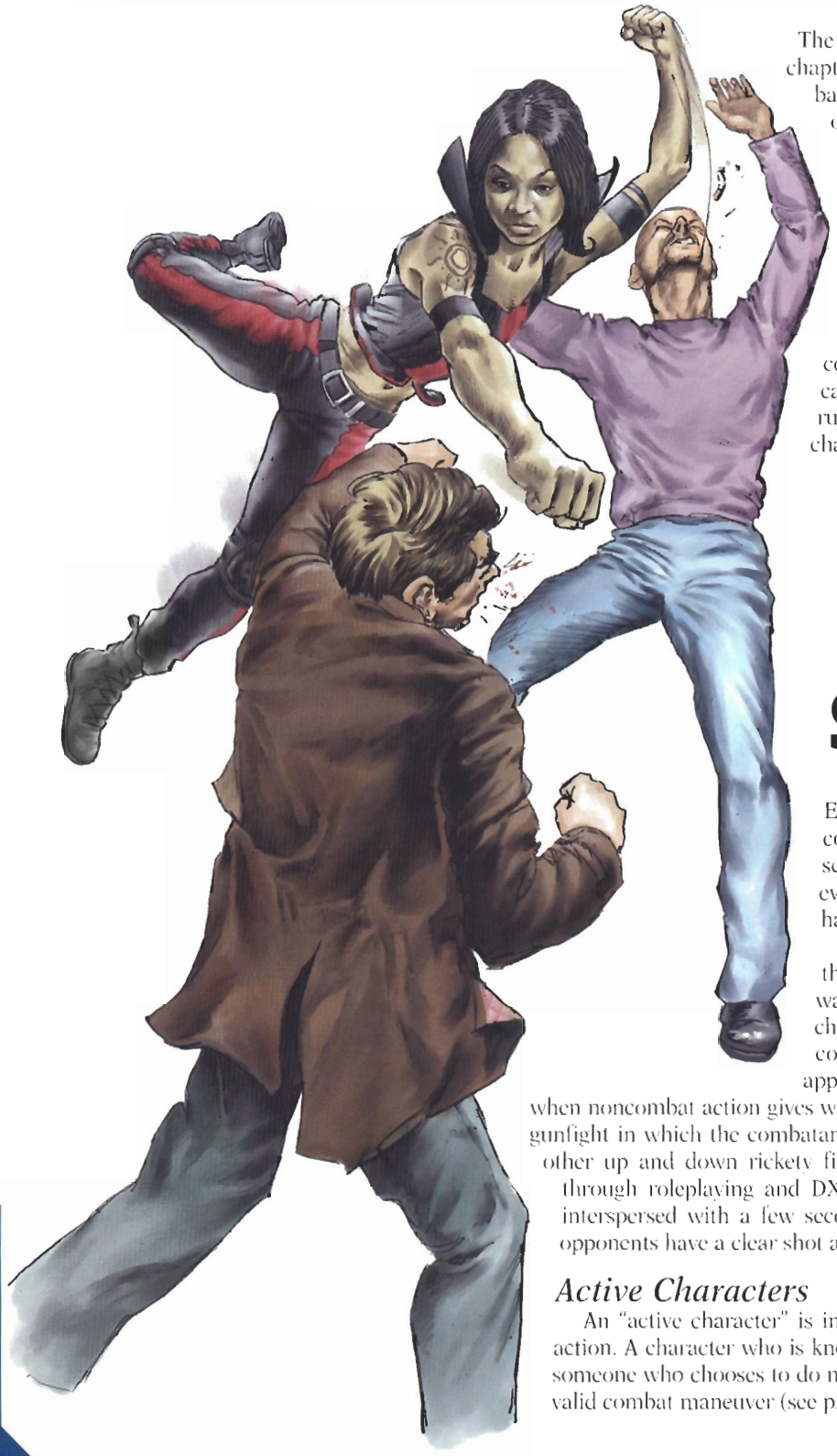
37 – Severe physical effect, as per **24,** but equivalent to -30 points of physical disadvantages.

38 – Coma, as per **29,** and a -15-point Delusion, as per **34.**

39 – Coma, as per **29,** and a -15-point Phobia or other -15-point mental disadvantage, as per **35.**

40+ – As **39,** above, but victim also loses 1 point of IQ *permanently.* This automatically reduces all IQ-based skills, including magic spells, by 1.

Chapter Eleven
Combat



The complete combat system occupies three chapters. This chapter contains the core combat rules. Chapter 12 adds rules for playing out combat using counters or figures on a hexagonal grid. Chapter 13 provides rules for a number of special combat situations. Like the character-creation system in Book 1, the combat system applies equally to PCs and NPCs.

The GM decides when to start using the combat rules. This will generally be when fighting seems likely and combatants begin maneuvering for tactical advantage. The GM may also use these rules to resolve "action" situations such as chases and tournaments.

Combat Turn Sequence

Combat takes place second by second. Each character actively involved in the combat gets one opportunity to act per second, referred to as his "turn." After everyone has taken his turn, one second has passed.

The GM shouldn't feel constrained by the one-second time scale. This is just a way of breaking a battle into manageable chunks! He should feel free to drop out of combat time whenever dramatically appropriate, and to resume combat time when noncombat action gives way to more fighting. Consider a running gunfight in which the combatants leap across rooftops and chase each other up and down rickety fire escapes: the GM could resolve this through roleplaying and DX or skill rolls (against Jumping, etc.), interspersed with a few seconds of combat whenever he feels the opponents have a clear shot at each other.

Active Characters

An "active character" is involved in the combat *and* able to take action. A character who is knocked out, asleep, etc. is not active. But someone who chooses to do nothing *is* still active – "Do Nothing" is a valid combat maneuver (see p. 364).

Turn Sequence

The "turn sequence" is the order in which active characters take their turns. It is set at the start of the fight and does not change during combat. The combatant with the highest Basic Speed goes first and takes his turn, then the one with the next-highest Basic Speed, and so on, in descending order by Basic Speed. Once every active character has taken his turn, one second has passed and another second begins.

Tied Speeds: If multiple NPCs on the same side have the same Basic Speed, the GM simply decides who goes first – it isn't really important. If PCs are involved, ties go to the highest DX. If there's still a tie, GM should roll randomly at the start of the combat to determine who acts first, and use that order throughout the combat.

Sequence Chart: If a combat has many participants, the GM may find it useful to make a quick list of the order in which the combatants take their turns.

"Your Turn"

A given participant's turn is the one-second period that stretches from when he chooses a maneuver until his next opportunity to select a maneuver. This overlaps the turns of other characters.

Each character actively involved in the combat gets one opportunity to act per second, referred to as his "turn." After everyone has taken his turn, one second has passed.

Maneuvers

A "maneuver" is an action that you can take on your turn. Each turn, you must choose *one* of the following maneuvers: Aim, All-Out Attack, All-Out Defense, Attack, Change Posture, Concentrate, Do Nothing, Evaluate, Feint, Move, Move and Attack, Ready, or Wait. Your choice determines *what you can do* on your turn, and sets your options for active defense and movement.

Multiple Maneuvers and Full-Turn Maneuvers

Ordinary characters can only take a single maneuver when it is their turn to act, limiting them to one maneuver per second. However, a few traits allow you to act with superhuman speed and take multiple maneuvers per turn!

Some maneuvers are described as "full-turn" maneuvers. If you take one of these, it's the *only* maneuver you can perform on your turn, regardless of how fast you can act. You are assumed to be performing that maneuver for an entire second.

Active Defense and Maneuvers

The maneuver you choose affects your "active defenses" – your ability to dodge, parry, or block attacks (see *Defending*, p. 374). You only have to select an active defense if you are attacked. Your most recent maneuver governs the active defenses you can use.

For the purpose of active defenses, your maneuver is considered to be in effect until you select another maneuver on your next turn. For instance, if you chose All-Out Defense (which gives a defensive advantage), its benefits would apply if you were attacked after you took your turn, and would persist until it was your turn again and you took a different maneuver.

If you're attacked before you've had a chance to choose a maneuver – usually at the start of combat – you're considered to be taking a Do Nothing maneuver (see p. 364).

Movement and Maneuvers

Most maneuvers allow some form of movement. The Move and Move and Attack maneuvers allow you to move *quickly*, up to a number of yards equal to your full Move score. Other maneuvers, such as All-Out Attack, limit you to a fraction of your full Move.

Many maneuvers restrict movement to a "step." This is movement up to 1/10 your Move, minimum 1 yard, in any direction, a change of facing (for instance, to turn around), or both. You can perform your step before or after the rest of the maneuver; for instance, you could step and attack *or* attack and step.

Some maneuvers allow *no* movement. In particular, you cannot move if you Change Posture or Do Nothing.

For more on movement, see *Move* (p. 364) and *Movement and Combat* (p. 367).

Free Actions

"Free actions" are things you can do during *any* maneuver. Some examples:

Talk. You can *always* talk. If the GM wants to be realistic, he should allow only one sentence of communication per second . . . but it is usually more fun when you ignore this limitation!

Maintain spells or psi. As long as you remain active, you can maintain a spell or ongoing psi ability, no matter what else you do.

Drop an item. You can drop any "ready" item at any time during any maneuver. If you're moving, you may drop it at any point within your reach during your movement.

Crouch. If standing, you may opt to crouch (to make yourself a smaller target for ranged attacks) at the *beginning* of your turn. This will usually slow your movement speed (see *Movement*, p. 367), and you *cannot* crouch and sprint. If you were already crouching, it is a free action to rise from a crouching position at the start of your turn.

Do Nothing

Anyone who is just standing still is assumed to be *doing nothing*. In particular, when combat begins, anyone who has not yet taken a turn is treated as if he took this maneuver before entering combat.

Someone who is conscious but stunned or surprised *must* take this maneuver. On each turn of Do Nothing, he may attempt a HT roll to recover from physical stun or an IQ roll to recover from mental stun. On a success, he recovers at the *end* of his turn – that is, he Does Nothing this turn, but may act normally next turn.

Movement: None!

Active Defense: Any (unless you're tied up, etc.). If you are stunned, however, your active defenses are at -4 until your next turn – even if you recover.

Move

Move, but take no other action except those specified under *Free Actions* (p. 363). You may move any number of yards up to your full Move score. Most other maneuvers allow at least some movement on your turn; take this maneuver if *all* you want to do is move.

Players must tell the GM exactly where their PCs move to so that he can keep track of the combat. The GM decides where his NPCs move, and will inform any players whose PCs are in a position to witness the movement.

If you are controlling a vehicle or riding a mount, take a Move maneuver to spend the turn actively controlling it. Instead of *you* moving, the vehicle or mount moves on your turn (carrying you and other occupants). See *Mounted Combat* (p. 396) and *Vehicles* (p. 462) for details.

Sprinting: If you run *forward* for two or more turns in a row, you get bonus movement on your second and later moves; see *Sprinting* (p. 354).

Movement: See above.
Active Defense: Any.

Change Posture

This maneuver lets you switch between any two "postures" (stances in which you can pose your body). Valid postures are *standing*, *sitting*, *kneeling*, *crawling*, *lying prone* (face down), and *lying face up*. Any posture other than standing slows your movement and penalizes your attack and defense rolls, but also makes you a smaller target for ranged attacks.

You cannot stand up directly from a lying position. If you are lying (prone or face up), you must take a Change Posture maneuver to rise to a crawling, kneeling, or sitting posture first. A second Change Posture maneuver lets you stand from any of these postures. (Going from standing up to lying down, however, only takes one maneuver – or none at all, if the change was involuntary!)

You can switch between kneeling and standing (only) as the "step" portion of any maneuver that allows a step – you don't need Change Posture for that. This is *instead* of using the step to move. Thus, you could go from prone to kneeling with a Change Posture maneuver on one turn, and then stand up in place on your next turn by taking a maneuver that allows a step.

Crouching does *not* require a Change Posture maneuver; see *Free Actions* (p. 363).

Movement: None. You remain in place as you change posture.

Active Defense: Any. Postures other than standing penalize your defense rolls, but also make you a smaller target for ranged attacks.

Aim

This is a full-turn maneuver used to aim a ranged weapon (or a device such as a camera or telescope). You must choose a specific target. You can't aim at something that you can't see or otherwise detect.

Specify the weapon you're aiming with and your target. If you follow an Aim maneuver with an Attack or All-Out Attack with the *same* weapon against the *same* target, you get a bonus to hit. Add the weapon's Accuracy (Acc) to your skill, plus any bonuses for targeting systems used: sights, targeting computers, etc.

If you *brace* a firearm or crossbow, you get an extra +1 to Acc. A firearm or crossbow is braced if you can rest it on a sandbag, low wall, car, etc. A one-handed firearm (e.g., a pistol) is considered braced if used two-handed. A two-handed firearm (e.g., a rifle) is considered braced if you are prone and using a bipod.

If you Aim for more than one second, you receive an additional bonus: +1 for two seconds of Aim, or +2 for three or more seconds.

Your combined bonus from all targeting systems (scopes, sights, computers, etc.) cannot exceed the weapon's base Accuracy. For instance, if you add a telescopic sight that gives +4 Acc to a pistol with Acc 2, the bonus is +2, not +4.

Movement: Step. *Exception:* You *cannot* step if using a braced, two-handed weapon.

Active Defense: Any, but you automatically spoil your aim and lose all accumulated benefits. If you are *injured* while aiming, you must make a Will roll or lose your aim.

Evaluate

This maneuver is the melee combat equivalent of Aim. It lets you take time to study an adversary in order to gain a combat bonus on a subsequent attack. You must specify one *visible* opponent who is close enough to attack unarmed or with a ready melee weapon, or whom you could reach with a single Move and Attack maneuver. You are sizing him up and looking for the right moment to strike.

An Evaluate maneuver gives you +1 to skill for the purpose of an Attack,

Feint, All-Out Attack, or Move and Attack made against *that opponent, on your next turn only.* You may take multiple, consecutive Evaluate maneuvers before you strike, giving a cumulative +1 per turn, to a maximum of +3.

Movement: Step.
Active Defense: Any. This does *not* spoil your evaluation.

Attack

Use this maneuver to make an armed or unarmed attack in melee combat, or to use a thrown or missile weapon in ranged combat. To use a weapon to attack, it must be ready.

If you are using a melee weapon or unarmed attack, your target must be within reach. Resolve the attack as explained under *Melee Attacks* (pp. 369-372). If you took an Evaluate maneuver (above) last turn, you will have a bonus to hit. If you took a Feint (below), your opponent may have a penalty to defend.

If you are using a ranged weapon, your target must be within the weapon's Max range. Resolve the attack according to *Ranged Attacks* (pp. 372-374). If you took an Aim maneuver (p. 364) last turn, you will have a bonus to hit.

Movement: Step. You may step and then attack *or* attack and then step – your choice. To move further and still attack, take All-Out Attack or Move and Attack.
Active Defense: Any.

Feint

"Fake" a melee attack. You cannot Feint someone unless you *could* have hit him with a melee attack – that is, your weapon is ready and your foe is within reach. This maneuver is *not* an attack, though, and does not make your weapon unready.

When you Feint, roll a Quick Contest of Melee Weapon skills with your foe; if either of you is unarmed, you may roll against an unarmed combat skill instead. Your opponent may opt to roll against Cloak or Shield skill, if he is suitably equipped and this would give him a better roll. If his DX is better than his combat skills, he may roll against DX instead.

If you fail your roll, your Feint is unsuccessful. Likewise, if you succeed, but your foe succeeds by *as much as* or *more than* you do, your Feint fails.

If you *make* your roll, and your foe *fails,* subtract your margin of success from the foe's active defense if you attack him with Attack, All-Out Attack, or Move and Attack on your next turn. For instance, if your skill is 15 and you roll a 12, your foe defends against you at -3 next turn.

If you and your foe *both* succeed, but you succeed by more, subtract your margin of victory from the foe's defense. For instance, if your skill is 15 and you roll a 10 (success by 5), and your foe's skill is 14 and he rolls 12 (success by 2), you win by 3, so he will defend at -3 if your next maneuver is to attack him.

You cannot Feint if your foe is unable to observe you! However, if your foe runs away, turns his back on you, or loses sight of you in some way *after* you successfully Feint, he will still suffer his defense penalty *if you attack him on your next turn.* If *you* lose track of the foe, or cannot attack him next turn, your foe's defense penalty vanishes.

A Feint is good for *one* second! But if you Feint and then make an All-Out Attack (Double), the feint applies to both attacks.

In all cases, your allies cannot take advantage of *your* Feint. The defense penalty applies only to *your* next attack.

Shield Feints: After you have attacked your foe once by striking with your shield (see p. 406), you may also Feint with your shield, rolling against Shield skill.

Movement: Step.
Active Defense: Any. However, if you Feint and then parry with an unbalanced weapon, you cannot attack on your next turn, making your Feint pointless.

All-Out Attack

Attack any foe with a ready weapon, making no effort to defend against enemy attacks. If you are making a melee attack, you must specify *one* of these four options before you attack:

- *Determined:* Make a single attack at +4 to hit!
- *Double:* Make two attacks against the same foe, *if* you have two ready weapons or one weapon that does not have to be readied after use. Attacks with a second weapon held in the off hand are at the usual -4 (see *Handedness,* p. 14) unless you have Ambidexterity (p. 39).
- *Feint:* Make one Feint (see above) and then one attack against the same foe. The Feint applies to *this* attack instead of one you make on your next turn.
- *Strong*: Make a single attack, at normal skill. If you hit, you get +2 to damage – or +1 damage per die, if that would be better. This only applies to melee attacks doing ST-based thrust or swing damage, not to weapons such as force swords.

If you are making a ranged attack, you must specify *one* of these two options before you attack:

- *Determined:* Make a single attack at +1 to hit.
- *Suppression Fire:* Take the *entire* turn to spray an area with automatic fire. This is a full-turn maneuver, and you can only choose this option if your weapon has RoF 5+. See *Suppression Fire* (p. 409).

Movement: You may move up to half your Move, but you can only move forward.
Active Defense: You may make *no active defenses at all* from the point you take this maneuver until your next turn. If someone attacks you after you make an All-Out attack, all you can do is hope he misses – you can't dodge, parry, or block!

Move and Attack

Move as described for the Move maneuver (p. 364), but during or after your move, make a single, poorly aimed attack – either unarmed or with a ready weapon.

You attack as described for the Attack maneuver (above), but at a penalty. If you are making a ranged attack, you have a penalty of -2 or the weapon's Bulk rating, whichever is *worse* – and if you took an Aim, you lose all of its bonuses. If you are

making a melee attack other than a slam (p. 371), you have a flat -4 to skill, and your adjusted skill cannot exceed 9.

Movement: As described under the Move maneuver – but since you are trying to do two things at once, you are -2 on any rolls the GM requires to avoid falling, tripping over obstacles, etc.

Active Defense: Dodge or block only. You cannot parry and you may not retreat (see *Retreat*, p. 377).

All-Out Defense

This is the maneuver to choose when you're beset by foes – especially foes who like All-Out Attacks! You must specify *one* of the following two options:

- *Increased Defense:* Add +2 to *one* active defense of your choice: Dodge, Parry, or Block. This bonus persists until your next turn.
- *Double Defense:* Apply two *different* active defenses against the same attack. If you fail your defense roll against an attack, you may try a second, different defense against that attack. For instance, if you fail a block, you may try a dodge or a parry. If you try a parry (armed or unarmed) with one hand and fail, a parry using the other hand *does* count as a "different defense."

Movement: If you choose Increased Dodge, you may move up to half your Move. Otherwise, the only movement you may take is a step.

Active Defense: You may choose any legal active defense, with bonuses as described above.

Concentrate

You *concentrate* on one primarily mental task (even it has a minor physical component, like operating controls, gesturing, or speaking). This may be casting a magical spell, using a psi ability, making a Sense roll to spot an invisible warrior, making a Leadership roll to give orders, making an Electronics Operation roll to operate a sensor, or any similar action, including most IQ-based skill rolls. This is a full-turn maneuver.

Some activities (e.g., casting spells) require you to take the Concentrate maneuver for multiple seconds. If you are forced to use an active defense, knocked down, injured, or otherwise distracted before you finish, you must make a Will-3 roll. On a failure, you lose your concentration and must start over.

Movement: Step.

Active Defense: Any. However, it interferes with concentration as noted above.

Ready

Take a Ready maneuver to pick up or draw *any* item and prepare it for use; e.g., to pull a sword from its sheath or a gun from its holster, or to reload a firearm. In some cases, you may also need a Ready maneuver to regain control of an unwieldy weapon after a swing, or to adjust the reach of a long weapon – see the *Melee Weapon Table* (p. 271).

You can use a Ready maneuver to perform physical actions other than fighting: opening or closing a door, picking a lock, digging, lifting, etc. Continuing activities may require multiple, consecutive Ready maneuvers; see *Other Actions in Combat* (p. 382).

Finally, a Ready maneuver lets you switch an advantage "off" or "on" if it is not always on and does not require an Attack or Concentrate maneuver to use.

For more information, see *Readying Weapons and Other Gear* (p. 382) and *When Is a Weapon Ready?* (p. 382).

Movement: Step.

Active Defense: Any.

Wait

Do nothing *unless* a particular event you specified in advance occurs before your next turn; e.g., a foe moves into range. If that happens, you may transform your Wait into an Attack, Feint, All-Out Attack (you must specify the option before acting), or Ready maneuver. If you are reacting to someone else, this interrupts *his* turn, but he can resume it after you've acted.

You must specify exactly what your action will be when you take the Wait maneuver, and what will trigger it. For instance, "I'll make an All-Out Attack (Determined) with my sword on the first orc to move toward me."

You may take a Wait with a ready ranged weapon; this is known as "covering" a target or area. If so, you must specify the zone that you are covering with that weapon. There is no penalty to cover a one-yard area. For larger areas and additional rules, see *Opportunity Fire* (p. 390).

You can use the *Wait* maneuver for *any* "reflex action" you want to plan in advance, provided you specify both the response and the action that will trigger it. This can include holding a knife at a hostage's throat, or even a noncombat action (e.g., "If Dora sees any orcs, she will pull this rope immediately – otherwise, she does nothing."). An action only qualifies as a "reflex" if you could do it in a *single motion*. The GM's decision is final.

Finally, you can use Wait to coordinate actions with slower friends.

Stop Thrust: If you have a ready thrusting weapon, you can use a Wait to brace your weapon to receive a possible enemy charge. Simply state, "I brace for a stop thrust." You can convert your Wait into an Attack or All-Out Attack against any one foe that moves one or more yards toward you to make a melee attack (armed or unarmed, including a slam or a grapple) or evade (see *Evading*, p. 368). You strike first if you have the longer reach. If you hit and your foe fails to defend, add +1 to thrust damage for every two *full* yards your attacker moved toward you.

Movement: None until your Wait is triggered. At that point, you may move as allowed by the maneuver you specified (Attack, Feint, All-Out Attack, or Ready).

Active Defense: You may defend normally while you are waiting or after your Wait is triggered. But if you defend while taking a Wait, you may not transform your Wait into an All-Out Attack; you must convert your Wait into an Attack instead.

Movement and Combat

Basic movement does not require a game board. Instead, the GM should have a general idea of the environment, and mentally keep track of relative distances between combatants or objects – possibly referring to maps, notes, or diagrams. Should the players ask about reach or distance ("I want to run up and swing at him . . . how far away is he?"), the GM's judgment is final.

Since movement and facing issues are in the GM's head, it's up to the GM how much detail to give the players. The GM might carefully keep track of every yard of movement, taking notes on paper . . . or he might only worry about exact distances when they are of vital importance. Most GMs will want to adopt a middle ground. For example:

GM: "You see Indigo Joe 90 yards north of you. He's at the edge of the cemetery, crouched behind a tombstone, aiming his laser rifle at Kim."

Player: "Damn, he spotted us. Is there any cover nearby? I want to run toward it."

GM: "An outcropping of rock starts 7 yards to your northwest, and there are some trees about 10 yards to the east. Your helicopter is parked 10 yards behind you, if you want to fall back."

Player: "No way! Kim will use a Move and Attack. She runs her full Move toward the rocks, while firing at Indigo Joe with her Gauss rifle."

GM: "Fine. You have Move 5? Okay, you're now 2 yards from cover. Now it's Joe's turn. He fires an aimed shot . . ."

The GM should always provide enough detail to give the players tactical choices, but not so much as to overwhelm them. If things get confusing, a sketch map with a few notes can often help. Groups that desire more detail than *that* should consider using the tactical combat system in Chapter 12 – or at least adopting some of those rules to add extra detail to the guidelines given here.

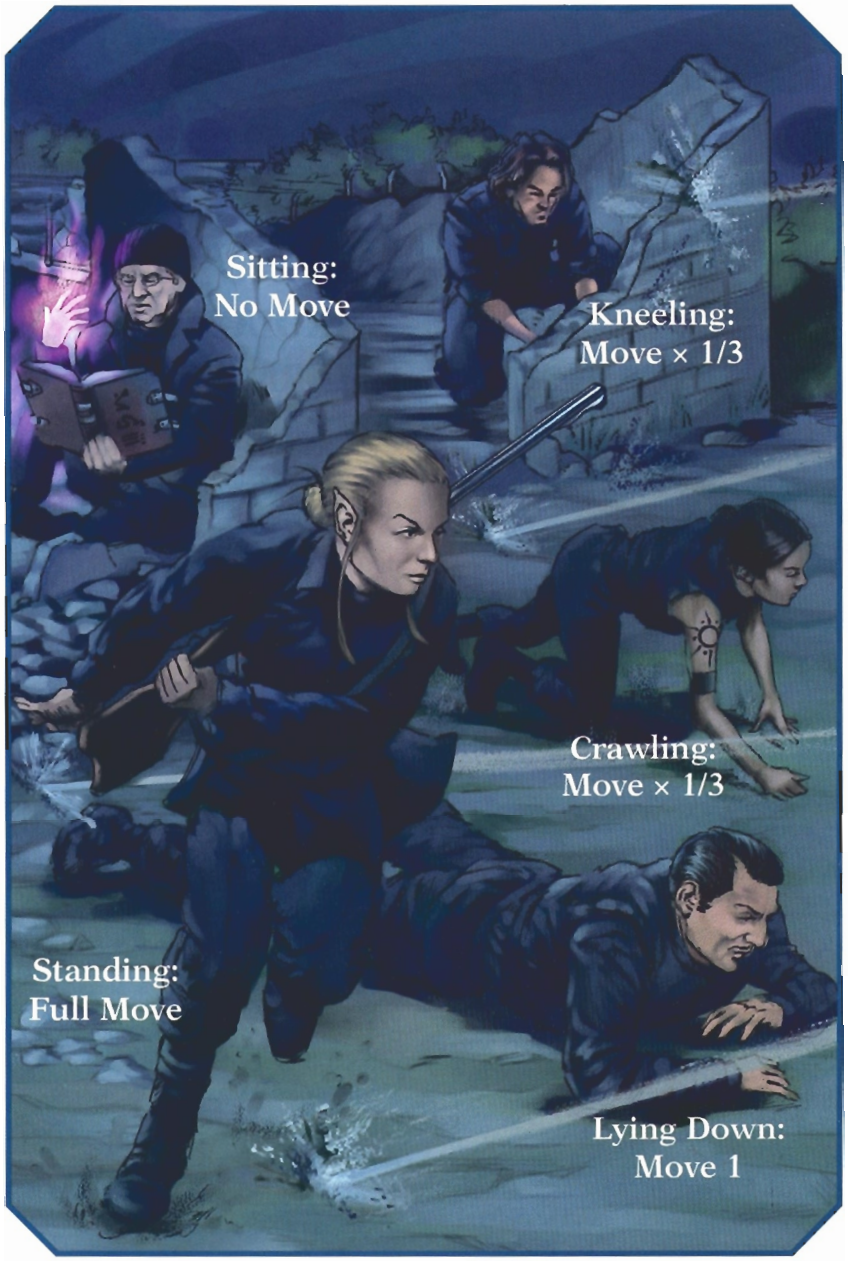
Here are a few "rules of thumb" for movement and combat. See *Mounted Combat* (p. 396) and *Vehicles* (p. 462) for notes on mounted and vehicular combat, respectively.

Movement

A combatant can move a maximum number of yards equal to his *full* Move score if he took a Move or Move and Attack maneuver. He can move up to *half* his Move if he chose an All-Out Attack or All Out Defense (Increased Dodge) maneuver.

Obstacles and bad footing will generally slow movement. The GM decides how many yards of movement a fighter must give up to cover one yard of difficult terrain or to cross a given obstacle. For instance, tangled brush might cut Move in half, while climbing over a fallen body might cost an extra yard of movement.

You can move while in almost any posture, but you only get your full Move if standing. You have 1/3 your Move while crawling or kneeling – and you have a flat Move 1 while lying down (belly crawl or rolling). You cannot move *at all* while sitting!



Step

Most maneuvers allow you to take a *step*, either before or after another action. You may step a distance equal to 1/10 your Move, but never less than one yard. Round all fractions *up*. Thus, Move 1-10 gives a one-yard step, Move 11-20 gives a two-yard step, and so on.

If you are capable of steps greater than one yard, you may break up your movement in a turn. For instance, if you had a two-yard step, you could move one yard, make an attack, and move another yard during an Attack maneuver.

You can use a step to go from a kneeling to a standing posture (or vice versa) *instead* of moving. This requires your entire step, no matter how far you could normally move.

You may always turn to face a different direction as part of any step (or *as* the step, if you just want to change your facing).

Spacing

A human-sized fighter needs about one yard (3') of space; thus, two warriors could move down a passage two yards wide shoulder-to-shoulder – or hold it against a foe. A doorway is about one yard wide, so a single person could hold it. All this assumes room to attack and defend. Noncombatants could be packed in much more tightly, but they would have no room to react.

Moving Through Other Characters

You can always move through space occupied by your allies in combat, and you can run *around* an adversary who does not completely block your path (see *Spacing*, above). But if the GM rules that the only way past an opponent is *through* him, you must either bowl him over (see *Slam*, p. 371) or "evade" him.

Evading

"Evading" is moving through ground occupied by an opponent without trying to knock him down. You can attempt this as part of any maneuver that allows movement, provided you can move fast enough to go *past* your foe – not just up to him.

First, ask if your foe is trying to stop you. If he chooses to let you past, you "evade" him *automatically* – no roll is needed. If your foe wants to stop you, roll a Quick Contest of DX. Modify *your* DX as follows:

-5 if your foe is standing up.

-2 if your foe is kneeling.

+2 if you are approaching your foe from his right or left side.

+5 if you are approaching your foe from *behind*.

+5 if your foe is lying down.

If you win, you evade him and are free to move on. If you lose or tie, he got in your way and stopped you.

You cannot evade *anyone* while you are being grappled (see *Grappling*, p. 370). You cannot evade a foe if there is no logical way you could avoid hitting him, either (GM's decision) . . . but note that huge creatures can step over smaller ones, while small creatures can duck between the legs of larger ones!

On the other hand, if you can use an advantage such as Flight or Super Jump to move up and over the foe's reach in the vertical plane, you can evade him *automatically!*

Crouching

If you are in a standing position, you can elect to crouch at the beginning of your turn, as part of any maneuver. If you don't move, or if you only step, you may also crouch *after* performing another action such as attacking or readying. However, you may not move more than a step and then crouch at the *end* of your movement to avoid attacks – not in one second! But if you are already crouching, you may *leave* your crouch at any time as a free action.

Attacking

An "attack" is an attempt to hit a foe or other target. If you execute an Attack, All-Out Attack, or Move and Attack maneuver (or convert a Wait into any of these), you may try to hit a foe. You can only attack with a weapon if it's ready (see *Ready*, p. 366).

The GM always has the option of ruling, for any reason having to do with the situation, that some fighters cannot attack certain opponents. For instance, eight attackers could not hit one human-sized foe at the same time. (Even three or four attackers at once would be unlikely, unless their victim had no allies!)

There are two basic types of attacks: melee attacks (pp. 369-372) and ranged attacks (pp. 372-374). Your target must be within reach if you're making a melee attack, or within range if you're making a ranged attack. Resolving either type of attack takes three die rolls:

- First is your *attack roll*. If your roll is successful, your attack was a good one.
- Now your foe must make a *defense roll* to see if he can defend against your blow. If he makes this roll, he evaded or stopped the attack, and is not hit.
- If he misses his defense roll, your blow struck home and you *roll for damage*.

Some advantages (e.g., Extra Attack) and combat options (see *All-Out Attack*, p. 365, and *Rapid Strike*, p. 370) let you attack more than once. Resolve such attacks one at a time.

Attack Roll

Your "attack roll" is a regular success roll – see Chapter 10. Figure your *effective skill* (base skill plus or minus any appropriate modifiers) with the weapon you are using.

If your roll is *less than or equal to* your "effective" skill, your attack will hit unless your foe successfully defends (see *Defending*, p. 374). If he fails to defend – or if he can't – you've hit him.

If your roll is *greater than* your effective skill, you missed!

No matter what your effective skill, a roll of 3 or 4 always hits, and is a "critical hit"; see *Critical Hits* (p. 381). A roll of 17 or 18 always misses.

Melee Attacks

When you take a maneuver that lets you make a melee attack, you must specify who you are attacking, and with what weapon. You can make a melee attack using any *ready* melee weapon (including a natural weapon such as a kick, bite, or punch) against any target that is within *reach*.

You can use some weapons in more than one way; e.g., you can swing or thrust with a shortsword. Such weapons have multiple lines on the *Melee Weapon Table* (p. 271). When you attack with a weapon like this, you must indicate how you are using it before you roll.

To Hit

Figure your adjusted chance to hit by:

1. Taking your base skill with the weapon or unarmed attack you are using.

2. Applying all conditional modifiers for your maneuver, situation, posture, and the target's visibility. A detailed list appears under *Melee Attack Modifiers* (p. 547).

The result is your *effective skill*. A roll of this number or less is a successful attack roll. It will hit, unless the target succeeds with an active defense.

Ready Weapons

A one-handed weapon is ready if it's being held in your hand. A two-handed weapon is ready if you are gripping it with *both* hands. Some unwieldy weapons (e.g., the great axe) become unready after each attack unless you are extremely strong; see the *Melee Weapon Table* to learn which weapons are unwieldy, and their ST requirements (always marked ‡).

To draw a new weapon from a sheath, scabbard, or sling, or to ready an unwieldy weapon that became unready after an attack, you must take a Ready maneuver (p. 366).

A natural weapon (punch, kick, etc.) is *always* ready unless the body part in question is occupied or restrained; e.g., you can't punch if you are holding a weapon with the same hand, or bite while wearing a full-face helmet or gripping something with your teeth.

Reach

A melee weapon can only attack a target that is within its reach (measured in yards), as given on the *Melee Weapon Table*. Most weapons have a reach of 1, which means you must be adjacent to your target (that is, within one yard of him). Reach plays a much larger role if using a game board; see Chapter 12.

Melee Attack Options

Before making a melee attack, you may specify some additional options.

Hit Location

It is assumed that you are attacking the target's center of mass (the torso, on a human), unless you specify otherwise. If you wish to target another body part (e.g., the head), see *Hit Location* (p. 398). If you choose to attack his weapon, see *Striking at Weapons* (p. 400).

Deceptive Attack

You may designate any melee attack as "deceptive" before you roll to hit. A Deceptive Attack is intended to get past an opponent's defenses through sheer skill. You can use this option to represent any number of advanced fighting techniques.

For every -2 you accept to your own skill, your foe suffers a -1 penalty on his active defenses against this attack. You may not reduce your final effective skill below 10 with a Deceptive Attack, which normally limits it to skilled fighters.

The GM may opt to speed play by limiting Deceptive Attacks to a flat -4 to skill, giving the target -2 on his active defenses.

Rapid Strike

A Rapid Strike is a melee attack executed swiftly enough that you get one extra attack. You must take an Attack or All-Out Attack maneuver, and you must use a ready weapon to make the extra attack. Make *two* attacks, *both* at -6 to skill. You *can* target multiple opponents this way.

If you *already* have multiple attacks, for whatever reason, you can replace *one* of them (and only one!) with two attacks at -6.

Unarmed Combat

Sometimes you have to fight without weapons, or with improvised weapons. This is *unarmed combat*. Anyone can engage in unarmed combat, but certain skills make you a more effective unarmed fighter. For this purpose:

- *Striking skills* are Boxing (p. 182), Brawling (p. 182), and Karate (p. 203).
- *Grappling skills* are Judo (p. 203), Sumo Wrestling (p. 223), and Wrestling (p. 228).

Striking

See the *Melee Weapon Table* (p. 271) for the reach, damage, etc., of punches, kicks, bites, and other unarmed strikes. For additional options, see *Sample Combat Techniques* (p. 230) and *Special Unarmed Combat Techniques* (p. 403). And see *Hurting Yourself* (p. 379) for the effects of striking an armored target barehanded . . .

Grabbing

You can grab something a foe is holding, like a weapon. To do so, you must have an empty hand (but some weapons, such as whips, can also grab). Make an attack using DX or a grappling skill, with the usual penalty to hit the hand (-4). Your opponent defends normally.

If you hit, you've grabbed hold of your foe's weapon. On subsequent turns, you may try to wrest it from him. Each attempt is a full-turn maneuver. Roll a Regular Contest of ST. If you *win*, you take his weapon away. If you *lose*, you lose your grip on his weapon.

Grappling

"Grappling" is an attempt to grab your foe's *body*. You must have at least one empty hand. On a game board, you must also move into your foe's hex ("close combat").

Each attempt requires an Attack, All-Out Attack, or Move and Attack maneuver. Roll against basic DX or a grappling skill to hit. Your foe may defend normally – he can parry, dodge, or block. You may Evaluate or Feint beforehand to improve your odds of success.

Grappling does no damage, but if you successfully hit, the foe has -4 to DX as long as you're holding on. He may not move away until he breaks free (see *Actions After Being Grappled*, p. 371) or you let go. *Exception:* If you grapple a foe of more than twice your ST, you *do not* prevent him from moving away – you're just extra encumbrance for him!

You may grapple with any or all of your arms. If you grapple with more than two arms, each arm beyond the first two gives a bonus of +2 to hit. An arm committed to grappling cannot make unarmed parries until you let go. Letting go is a free action *on your turn*.

If you are holding onto your foe with *all* your arms, the only further attacks you can make are those listed under *Actions After a Grapple*, below.

Posture: To grapple a prone, kneeling, or sitting opponent, you must kneel or lie down yourself, unless his Size Modifier is two or more greater than yours. You may do this as part of the "step" component of an Attack maneuver.

Hit Location: The rules above assume that you are grappling the torso. To grab another body part, apply *half* the penalty given under *Hit Location* (p. 398) to your roll; see *Grappling and Hit Location*, p. 400. If you hit, your foe has -4 to DX *only when using that body part*. You could grab a weapon arm or hand (to disarm your victim), a leg (to trip him), or the neck (to strangle him). If you grab an arm or hand, you cannot snatch a weapon away, but you *can* force your foe to drop it by winning a Regular Contest of ST – roll once per turn, as explained under *Grabbing* (above). For a related technique, see *Arm Lock* (p. 230).

Actions After a Grapple

Once you have grappled a foe, you may attempt the following moves on subsequent turns (provided your opponent does not break free!). Each action requires an Attack or All-Out Attack maneuver.

Takedown

This is an attempt to bear your opponent to the ground. You may only try this on a standing foe. Roll a Quick Contest, with each contestant using the *highest* of ST, DX, or his best grappling skill. If you are not standing, you have a penalty equal to the usual penalty to hit for your posture. If you *win*, your victim falls down next to you (on a game board, he falls in your hex and any adjacent hex of your choice). If he was grappling you, he loses his grip. If you lose, *you* suffer the same effects! On a tie, nothing happens.

Pin

You may only attempt a pin if your foe is on the ground *and* you are grappling his torso. Roll a Regular Contest of Strength. The *larger* fighter gets +3 for every point by which his Size Modifier exceeds that of his foe. The fighter with the most free hands gets +3. If you *win*, your foe is *pinned* and helpless. You must stay there to hold him down, but you can free one of your hands for other actions. If you lose or tie, nothing happens.

Choke or Strangle

You must have grappled your foe by the neck. You must normally use your hands, and can't do anything else with them (e.g., parry) while holding on – but if you have the Constriction Attack advantage (p. 43), you can use your *body* instead. Roll a Quick Contest: your ST vs. the *higher* of your foe's ST or HT. You are at -5 if you use only one hand, but at +2 per hand

after the first two. If your Size Modifier exceeds your foe's, you can grapple and squeeze his torso instead, in which case you roll at -5 unless you have Constriction Attack. If you *win*, your foe takes crushing damage equal to your margin of victory. DR protects normally. Multiply injury to the neck by 1.5. If any damage – even blunt trauma (p. 379) – penetrates the victim's DR, you also start to suffocate him! On his next turn and every subsequent turn until he escapes, he loses 1 FP; see *Suffocation* (p. 436).

Choke Hold

If you have Judo or Wrestling skill, you may try to apply a hold that can incapacitate *without* crushing the throat or torso. See *Choke Hold* (p. 404).

Arm Lock

If you have Judo or Wrestling skill, you may try to apply a lock to restrain or cripple your opponent's arm. See *Arm Lock* (p. 403).

Neck Snap or Wrench Limb

If you grappled your foe's neck or skull, or a limb or other extremity, you can *twist*. See *Neck Snap or Wrench Limb* (p. 404).

Other Actions

You can bite or use a Striker (provided it has reach C) even if all your hands are busy. If you're not using a hand to grapple your foe, you can use it to Attack or All-Out Attack (either unarmed or with a reach C weapon), or to take a Ready maneuver. You *cannot* Aim, Feint, Concentrate, Wait, or make *ranged* attacks unless you've pinned your foe. You may also perform the following free actions:

- *Release your grip.* Let go of the foe, if you are grappling or pinning him. Or you can release just one hand – but this makes it easier for him to escape.
- *Throw away a ready weapon.* This automatically succeeds and takes no time. You may do this to get a useless weapon out of your way, or to deprive the foe of a chance to grab a useful weapon (e.g., a blackjack) from you.
- *Drag or carry your victim.* If you've pinned your foe, you can move or step normally, dragging or carrying him; see *Lifting and Moving Things* (p. 353) for how much you can lift or drag. He counts as encumbrance, reducing your Move. If you *haven't* pinned him, moving away from him means you automatically release your grip unless you have at least twice his ST. If you're that strong, you can pull or carry him with you!

Actions After Being Grappled

If you have been grappled, you cannot take a Move maneuver unless you have at least twice your foe's ST. Aim, Feint, Concentrate, and Wait maneuvers – and *ranged* attacks – are completely impossible. If you are *pinned*, you can't take any maneuver that requires physical movement! Otherwise, you can do the following:

Attack or All-Out Attack

You can take either maneuver, with certain limitations. You *cannot* use any limb that has been grappled – or bite, if your neck or head was grappled. You're limited to unarmed attacks (striking or grappling) or attacks using weapons with reach C. You can stab with a dagger, but not swing a sword!

Ready

You can Ready an item if you have a hand free, but you must make a DX roll. Failure means you drop the item. Ready maneuvers to switch advantages off and on succeed automatically.

Break Free

If you are grappled, you cannot move away until you break free by *winning* a Quick Contest of ST. Your foe has +5 if he is grappling you with two hands. If he has you pinned, he rolls at +10 if using two hands or at +5 if using only one, and you may only attempt to break free once every 10 seconds. If either of you has three or more arms, each arm beyond the first two gives +2. If your foe is stunned, he rolls at -4; if he falls unconscious, you are *automatically* free! If you successfully break free, you may immediately move one yard in any direction.

Slam

You can deliberately collide with an opponent. This requires an Attack, All-Out Attack, or Move and Attack maneuver. Roll against DX, Brawling, or Sumo Wrestling to hit. Note that the -4 to hit and effective skill cap of 9 for a Move and Attack *do not apply to slams.*

Your foe may block, dodge, or parry (but your body counts as a heavy weapon; see *Parrying Heavy Weapons*, p. 376). If your foe dodges, you must move at least two yards past him if you have enough movement. If you would hit someone else, see *Hitting the Wrong Target* (p. 389).

If you hit, you and your foe each inflict dice of crushing damage on the other equal to (HP × velocity)/100. "Velocity" is usually just the number of yards you moved this turn – but in a head-on collision, add the distance *your foe* moved toward you on his last turn (that is, use *relative* velocity).

If damage is less than 1d, treat fractions up to 0.25 as 1d-3, fractions up to 0.5 as 1d-2, and any larger fraction as 1d-1. Otherwise, round fractions of 0.5 or more *up* to a full die. You *can* use All-Out Attack (Strong) to increase your damage!

If your damage roll equals or exceeds that of your foe, he must make a DX roll or fall down. You knock him down *automatically* if you roll twice his damage or more. If he rolls twice *your* damage or more, though, you fall down instead!

If your opponent dodged and you went past him and hit a solid obstacle, apply your damage roll to yourself (and to the obstacle, if it matters).

You can also slam with a vehicle or mount. Roll against your vehicle-operation skill to hit with a vehicle, or Riding skill to hit with a mount. Figure damage based on the HP of your vehicle or mount.

For additional rules and special cases, see *Collisions and Falls* (p. 430).

Flying Tackle: As slam, but you must have at least two legs and one arm free – most animals and vehicles can't do this! A flying tackle gives you +4 to hit and an extra yard of reach, and you may opt to roll against Jumping skill to hit. However, whether you succeed or fail, you end up lying down (in the same hex as your foe, if you are using a combat map).

Pounce: As flying tackle, but you must have four or more legs. After you attack, make a DX, Acrobatics, or Jumping roll. On a success, you stay on your feet! This is how some animals attack, especially cats: they knock down their foe and then claw or bite. If a mount tries this, the rider must roll vs. Riding-4 or fall off!

Shield Rush: As slam, but you must have a shield. Roll against Shield skill to hit, and add your shield's Defense Bonus to your damage roll. Your *shield* takes damage instead of you, but you still fall down if your opponent rolls twice your basic damage or more.

Shove

You can shove a foe with one or both arms. Roll against DX or Sumo Wrestling to hit. Your foe may block, dodge, or parry. If you hit, roll thrust/crushing damage – at -1 per die, if you used only one hand – and *double* it. This inflicts knockback (see *Knockback*, p. 378), but never actual physical injury.

Ranged Attacks

A "ranged attack" is any attack with a weapon used at a distance, from a thrown rock to a laser rifle. This includes Missile spells and the Affliction, Binding, and Innate Attack advantages (unless given the Aura, Malediction, or Melee Attack modifiers). Most other spells and advantages are *not* considered ranged attacks.

Range

You can only make a ranged attack on a target that falls within your weapon's *range*. To find this, see the relevant weapon table or advantage or spell description. Most ranged attacks list Half Damage (1/2D) range and Maximum (Max) range, in yards. Your target must be no farther away than Max range; 1/2D range only affects damage.

A few weapons have a *minimum* range, as they lob projectiles in a high arc, or have fusing or guidance limits. When using a weapon like this, your target can't be any closer than the minimum range.

To Hit

Figure your adjusted chance to hit by:

1. Taking your base skill with your ranged weapon.

2. Adding your weapon's Accuracy (Acc) *if you preceded your attack with an Aim maneuver.*

3. Applying the target's Size Modifier (SM). See *Size Modifier* (p. 19).

4. Modifying for the target's *range and speed* (done as a single modifier), from the *Size and Speed/Range Table* (p. 550).

5. Modifying for circumstances (rapid fire, movement, darkness, cover, etc.), including any special conditions determined by the GM. See *Ranged Attack Modifiers* (p. 548) for a summary.

The result is your *effective skill*. A roll of this number or less is a successful attack roll. It will hit, unless the target succeeds with an active defense.

Accuracy and Aimed Fire

All ranged weapons have an Accuracy (Acc) statistic. This is the bonus you get if you take one or more Aim maneuvers immediately before you attack.

When you Aim, you can receive other bonuses for extra seconds of aim, bracing your weapon, or using a scope or a laser sight. These benefits are discussed under *Aim* (p. 364) and summarized under *Ranged Combat Modifiers* (p. 548). The sum of Acc and all extra aimed-fire bonuses can never exceed twice the base Acc of the attack.

Size Modifier

A human-sized target has a Size Modifier (SM) of 0; there is no bonus or penalty to hit. Larger targets have a positive SM, while smaller targets have a negative SM. Add SM to your skill. The SM of a character or a vehicle appears on its character sheet or vehicle description. For other objects, use the *Size and Speed/Range Table* (p. 550).

Target's Range and Speed

A distant target is harder to hit. As a rule of thumb, a target up to 2 yards away is close enough that there's no penalty to hit. At 3 yards, you have -1 to hit; at up to 5 yards, -2; at up to 7 yards, -3; at up to 10 yards, -4; and so on, with each approximately 50% increase in range giving a further -1 to hit.

Consult the Speed/Range column of the *Size and Speed/Range Table* (p. 550) to find the exact penalty. For ranges that fall between two values on the table, use the larger penalty. For very distant targets, the table also provides the equivalent range in *miles*.

Example: Infinity Patrol agent Jenny Atkins is shooting on the firing range. The target is 17 yards (50') away. This rounds up to 20 yards, for -6 to hit.

A fast-moving target is also harder to hit. Consult the same column of the table, but use speed in yards per second (2 mph = 1 yard/second) instead of range in yards to find the penalty.

If the target is both distant *and* fast moving, add range (in yards) to speed (in yards per second), and look up the total in the Speed/Range column to find the penalty to hit. (Do *not* look up the range and speed penalties separately and add them together! Great range mitigates the effects of speed, and vice versa.)

Examples: Agent Atkins fires her pistol at a Centrum spy who is making a getaway on a speeding motorcycle. Her target is 50 yards away and

traveling at 60 mph, or Move 30. This is a speed/range of 50 + 30 = 80. Per the *Size and Speed/Range Table*, this gives -10 to hit.

Ranged Attacks on Human Targets

When using a ranged weapon against a target moving at human speeds – anything up to Move 10 – you may simplify the calculation by using just a *range* modifier and neglecting speed (unless the target is flying, sprinting, or something similar). Assume that the target's ability to take a dodge defense adequately represents the effects of movement.

Thrown Weapon Attacks

"Thrown weapons" are weapons you must physically hurl at the target: rocks, hand grenades, ninja stars (*shuriken*), etc. You can also throw certain melee weapons, such as hatchets, knives, and spears. See the *Muscle-Powered Ranged Weapon Table* (p. 275) for statistics and skills required. See Chapter 13 for the effects of grenades and incendiaries.

Treat a thrown weapon just like any other ranged attack, with a few special rules:

- Once you throw a weapon, it's no longer ready! Hit or miss, your weapon is now *somewhere else*. If you want to attack again, you'll have to go fetch your weapon (from the ground . . . or your foe's body) or ready a new one.
- The range of a thrown weapon is usually a multiple of your ST; e.g., "ST×2." This is given on the *Muscle-Powered Ranged Weapon Table* for many common thrown weapons. To determine range (and damage) for anything not listed there, see *Throwing* (p. 355).
- A thrown weapon travels fairly slowly. Your target has the option of using a block or a parry active defense instead of a dodge. Success by 5+ (or critical success) with an unarmed parry means your target has *caught* the weapon!

Missile Weapon Attacks

"Missile weapons" are ranged attacks other than thrown weapons: bows, firearms, Missile spells, ranged Innate Attacks, and so on. They fall into two broad categories.

Muscle-Powered Missile Weapons: These include bows, slings, and crossbows. As with thrown weapons, your range and damage are determined by your ST – or in the case of a crossbow, by the *bow's* ST. See the *Muscle-Powered Ranged Weapon Table* (p. 275) for details.

Firearms: These include guns, beam weapons, and self-propelled projectiles. See the *Firearms Table* (pp. 278-280) for statistics and special rules for all types of high-tech missile weapons – from black-powder weapons through contemporary guns and on to science-fiction weapons such as lasers.

Rate of Fire

All missile weapons have a Rate of Fire (RoF) statistic. If RoF is 1, the weapon can fire one shot per attack. If RoF is 2 or more, the weapon is capable of firing more than one shot per attack; see *Rapid Fire* (below).

Examples: A bow has RoF 1; it can fire one shot per attack. A .38 revolver has RoF 3; it can fire up to three shots per attack. A machine gun has RoF 10; it can fire up to 10 shots per attack . . . but this is still one attack roll, not 10 separate attacks!

Reloading and Shots

Missile weapons also have a Shots statistic. Once you have fired this many shots, you must reload before you can fire the weapon again.

Reloading requires a number of Ready maneuvers; see *Readying Weapons and Other Gear* (p. 382). The time required to reload appears in parentheses after the weapon's Shots entry in the weapon tables.

Reloading restores the weapon's full number of shots. If a weapon has only one shot, this represents loading a new one. If it has multiple shots, this represents changing the magazine, belt, etc. The exception to this is multi-shot weapons that have cylinders, hoppers, or internal magazines. Their loading time is designated "i" (for "individually loaded"), and is *per shot* (unless sped up by some mechanism, such as a speed loader).

Examples: A bow has Shots 1(2); it can fire one arrow, after which it takes the archer two seconds to prepare another. A .38 revolver has Shots 6(3i); it can fire six shots, after which *each shot* takes 3 seconds to reload. A machine gun has Shots 200(5); it can fire 200 shots, after which it takes 5 seconds to change the belt.

Rapid Fire

Some missile weapons have RoF 2 or more. This means they can fire multiple shots *per attack*, up to a maximum equal to their RoF. For example, a .38 revolver with RoF 3 could fire 1, 2, or 3 shots per attack. Of course, you can never fire more shots than your weapon currently has remaining, regardless of its RoF.

Rapid-fire weapons use the Recoil (Rcl) statistic, which measures how controllable the weapon is when firing multiple shots. Rcl helps determine the number of hits a rapid-fire attack can inflict. The *lower* the Rcl, the easier the weapon is to control. Rcl 1 means the weapon is recoilless, like most beam weapons.

If a weapon has RoF 2 or more, you must decide how many shots (up to RoF) you wish to fire *before* you make your attack roll. Firearms fired at RoF 1-3 are firing one shot per trigger pull; those fired at RoF 4+ are usually firing "full auto" like a machine gun – either in short bursts or continuously.

Firing a large number of shots per attack gives a bonus to hit, as shown on this table:

Shots	*Bonus to Hit*
2-4	+0
5-8	+1
9-12	+2
13-16	+3
17-24	+4
25-49	+5
50-99	+6
each ×2	+1 to hit

Rapid fire may score multiple hits from a single attack. A successful attack means you scored at least one hit – and possibly a number of *extra* hits, up to a maximum equal to the number of shots you fired. To find the number of hits you scored, compare your margin of success on the attack roll to your weapon's Recoil.

An attack scores one *extra* hit for every *full* multiple of Recoil by which you make your attack roll. The total number of hits cannot exceed shots fired. For instance, if your attack had Rcl 2, success by 0-1 would mean one hit; success by 2-3, one *extra* hit; success by 4-5, two *extra* hits; success by 6-7, three *extra* hits; and so on.

High-RoF weapons (those with RoF 5+) can also spread fire among multiple targets (see *Spraying Fire*, p. 409) or fire lots of shots to "suppress" an area (see *Suppression Fire*, p. 409). Other special rules apply to rapid fire with certain weapons – see *Special Rules for Rapid Fire* (p. 408).

DEFENDING

If you make your attack roll, you have not (yet) actually struck your foe, unless you rolled a critical hit. Your attack is *good enough* to hit him – *if he fails to defend.*

There are three "active defenses" that a fighter can use to evade or ward off an attack: Dodge (see *Dodging*, below), Parry (see *Parrying*, p. 376), and Block (see *Blocking*, p. 375). You should calculate these active defense scores in advance and record them on your character sheet.

An active defense is a deliberate attempt to avoid a particular attack. It's only possible if the defender is aware of the possibility of an attack from his assailant *and* is free to react . . . by moving out of the way of the attack (a dodge), deflecting the attack with a weapon or empty hand (a parry), or interposing a shield (a block).

If a foe makes a successful attack roll against you, you may choose *one* active defense and attempt a "defense roll" against it. *Exception:* The All-Out Defense (Double Defense) maneuver lets you attempt a second defense against a particular attack if your first defense fails.

The active defense you choose depends on your situation – *especially* the maneuver you chose last turn. Some maneuvers restrict the active defenses you can make. Notably, if you made an All-Out Attack, you have *no* active defense.

You also get no active defense if you're unaware of the attack. Examples of situations in which no active defense is possible include a stab in the back from a "friend," a surprise sniper's shot, and a totally unexpected booby trap. And you get no active defense if you are unconscious, immobilized, or otherwise unable to react.

Active Defense Rolls

The defender rolls 3d against his active defense score. If his roll is *less than or equal to* his effective defense, he dodged, parried, or blocked the attack. Otherwise, his active defense was ineffective and the attack struck home. If this occurs, roll for damage.

An active defense roll of 3 or 4 is *always* successful – even if your effective defense score was only 1 or 2! A roll of 17 or 18 always fails.

Your foe does not get to attempt a defense roll if you rolled a critical hit against him.

Several modifiers apply to active defense rolls; see below for explanations of a few of these. For a complete list of modifiers, see *Active Defense Modifiers* (p. 548).

Injury and Active Defenses

If you are stunned, any active defense is at -4. Active defenses never take a penalty for shock, however. For more on stunning and shock, see *Effects of Injury* (p. 380).

Shields and Defense Bonus

If you have a ready shield, add its Defense Bonus (DB) to any Dodge, Parry, or Block roll against an attack that came from in front of you or from your shield side.

Defense Bonus is 1 for a small shield, light cloak, and most improvised shields; 2 for a medium shield or heavy cloak; and 3 for a large shield or force shield. The Shield spell (p. 252) gives a DB of 1-4.

A shield's DB adds to active defense rolls against melee attacks, thrown weapons, and muscle-powered missile weapons – *not* against firearms (unless the GM wishes to use the optional *Damage to Shields* rules, p. 484).

Retreating and Dropping Prone

In some situations, you may give ground or drop prone for a bonus to your Dodge, Parry, or Block score. See *Active Defense Options* (p. 377).

Dodging

A "dodge" is an active attempt to move out of the perceived path of an attack. This is often the best defense when you're not skilled with your weapon and you have no shield, when you're attacked multiple times, or when your foe has such a powerful weapon that you fear parrying or blocking it may destroy your weapon or shield.

Dodge is normally the *only* active defense you can take against firearms. This does not mean you can actually dodge bullets! A dodge against this kind of attack represents an attempt not to be where you think your opponent will shoot, by weaving or ducking at the right moment.

Your Dodge active defense is Basic Speed + 3, dropping all fractions, less a penalty equal to your encumbrance level (see *Encumbrance and Move*, p. 17). List Dodge on your character sheet for quick reference.

You may dodge *any* attack except one that you did not know about! You only get one Dodge roll against a given attack.

If a single rapid-fire attack scores multiple hits, a successful Dodge roll lets you avoid one hit, plus additional hits equal to your margin of success. A critical success lets you dodge *all* hits you took from that attack.

Example: A machine gun gets four hits against you. Your Dodge is 10. You roll an 8, succeeding by 2. You dodge three of the hits; only one bullet strikes you.

You only get one active defense against each attack, unless you use All-Out Defense (Double Defense), but there is no limit to the number of times you may dodge *different* attacks during your turn.

Acrobatic Dodge

If you have put at least one point into the Acrobatics skill, you can try a "fancy" dodge *once* during your turn. You may define this as jumping over a sword blow, cartwheeling away, or whatever else you like. Make an Acrobatics roll before you attempt your Dodge roll. (If flying, roll against Aerobatics instead.) On a success, you get +2 to that Dodge roll. On a failure, you get -2.

You *can* combine this option with a retreat (see *Retreat*, p. 377).

Sacrificial Dodge

You can defend a friend by throwing yourself into the path of an attack against him. To do so, you must be close enough to interpose yourself between your friend and his attacker by taking a step (see *Step*, p. 368). Announce this *after* the enemy makes his attack roll but *before* your friend attempts his defense roll.

Use the ordinary rules for a dodge, except that you cannot combine this with a retreat (see *Retreat*, p. 377). If you succeed, *you* are hit by the attack. If you fail, you didn't move in time, but your friend still gets his normal defense roll. In either case, since you moved, you cannot retreat if *you* are attacked before your next turn.

Vehicular Dodge

An evasively maneuvering vehicle gets a Dodge roll. Instead of Basic Speed + 3, use *half* the operator's skill (Driving, Piloting, etc.), rounded down, modified by the vehicle's Handling statistic. For example, a biker with Driving (Motorcycle)-14 on a motorcycle with Handling +1 would have a Dodge of 8.

Blocking

A "block" is an attempt to interpose a shield, cloak, or similar large object between yourself and an attack. This requires a *ready* shield or cloak. (If you're strong enough to grab and lift someone, you can block with his body!)

Your Block active defense is 3 + *half* your Shield or Cloak skill, dropping all fractions. For instance, Shield-11 would give a Block of 3 + (11/2) = 8.5, which rounds down to 8.

In general, you can block any melee attack, thrown weapon, projected liquid, or muscle-powered missile weapon. You *cannot* block bullets or beam weapons . . . these come too fast to be stopped this way.

You may attempt to block only *one* attack per turn.

Parrying Heavy Weapons

You cannot use a flimsy rapier to parry a titan's tree-sized club, the slam of a charging linebacker, or the sword of a giant robot! Heavy weapons are liable to knock your weapon away – or even *break* it.

The same is true for unarmed attacks from high-ST creatures. For the purpose of these rules, treat a punch, kick, bite, etc. as a weapon with an effective weight of 1/10 the attacker's ST. Use his *full* ST if he made a slam, flying tackle, pounce, or shield rush!

Your weapon may break if it parries anything three or more times its own weight. (This does not apply to barehanded parries; for damage to limbs when parrying unarmed, see *Parrying Unarmed*.)

A weapon parrying three times its own weight has a 2 in 6 chance of breaking: it breaks on a roll of 1 or 2 on 1d. Add +1 to these odds per whole-numbered multiple past 3 (a 3 in 6 chance at 4 times weapon weight, a 4 in 6 chance at 5 times, and so on). Weapon quality modifies these odds: +2 if the parrying weapon is cheap, -1 if fine, or -2 if very fine.

If your weapon breaks, the parry still counts *unless* the odds of breakage exceeded 6 in 6. If so, your weapon offered so little resistance that the parry does *not* count!

Regardless of the weight of your weapon, if you are parrying unarmed or using a one-handed weapon, you cannot parry a weapon heavier than your Basic Lift – or twice BL, if using a two-handed weapon. Attempts to parry anything heavier fail *automatically;* whether or not your weapon breaks, the attack sweeps it aside and damages you normally. If your weapon does not break, you drop it; if you are unarmed, you are knocked back one yard (make a DX roll to avoid falling over).

An attacker can also deliberately break or knock away weapons; see *Striking at Weapons* (p. 400).

Parrying

A "parry" is an attempt to deflect a blow using a weapon or your bare hands. You cannot parry unless your weapon is *ready* – or, if you are unarmed, you have an empty hand.

You can use most melee weapons to parry; see the Parry column of the *Melee Weapon Table* (p. 271) for special restrictions and modifiers. Some hefty weapons (e.g., axes) are *unbalanced:* you cannot use them to parry if you've already used them to attack on your turn. (You can still parry with a weapon in your other hand, if you have one.) A few long, well-balanced weapons (e.g., the quarterstaff) get a +1 or +2 bonus to parry due to their ability to keep a foe at bay.

Your Parry active defense with a given weapon is 3 + *half* your skill with that weapon, dropping all fractions. For instance, Broadsword-13 would give a Parry of 9.

A parry won't stop anything except melee attacks or thrown weapons, unless you have special skills. *Exception:* If a foe attacks you with a missile weapon *and* he is within reach of your melee weapon, you may parry. You're parrying the weapon, not the projectile! For example, if an attacker fired a pistol at you from only one yard away, you could attempt to parry barehanded. Success would mean that you slapped his arm or gun aside, causing him to fire wide of your body.

Number of Parries: Once you have attempted a parry with a particular weapon or bare hand, further attempts to parry with that weapon or hand are at a cumulative -4 per parry after the first. Reduce this to -2 per parry if you are using a fencing weapon *or* have the Trained By A Master or Weapon Master advantage – or to -1 per parry if both conditions are true. This penalty only applies to multiple parries *on the same turn;* it does not carry over between turns.

Parrying with the Off Hand: You parry with your "off" hand (your left or "shield" hand if right handed; see *Handedness*, p. 17), or with a weapon held in it, at -4 to skill. Since Parry is calculated off half skill, this gives -2 to Parry. You may ignore this penalty if you have the Ambidexterity advantage (p. 39).

Parrying Thrown Weapons: You can parry thrown weapons, but at a penalty: -1 for most thrown weapons, or -2 for *small* ones such as knives, shuriken, and other weapons that weigh 1 lb. or less.

Parrying Unarmed Attacks: If you successfully parry an unarmed attack (bite, punch, etc.) with a weapon, you may injure your attacker. Immediately roll against your skill with the weapon you used to parry. This roll is at -4 if your attacker used Judo or Karate. If you succeed, your parry struck the attacker's limb squarely. He gets no defense roll against this! Roll damage normally.

Parrying with Improvised Weapons

You can parry with anything of suitable size and shape, using the closest weapon skill. A pole or rifle could parry like a staff, a bow like a light club. However, parrying just once with a bow will ruin it *as a bow* – although it may survive for a few seconds longer as a club! Other fragile objects may be similarly ruined. Most improvised weapons count as "cheap" for breakage; see *Parrying Heavy Weapons* (box) for what this implies.

Parrying Unarmed

If you are fighting without weapons, or with at least one hand free, you may choose to parry barehanded. Beings that lack hands (like most animals) can't parry unarmed – they can only dodge.

You can use Boxing, Brawling, Judo, or Karate skill – or DX, if higher – to parry with one hand. You can also parry with Sumo Wrestling or

Wrestling skill, but this requires both hands. Your Parry active defense is 3 + *half* your skill or DX, dropping all fractions.

There's no penalty to parry another unarmed attack. You are at -3 to parry weapons, unless the attack is a *thrust* or you are using Judo or Karate (in either case, use your full parry). See individual unarmed-combat skill descriptions for other limitations.

A failed parry means you are hit. If you are using hit locations, a failed parry against a weapon means your attacker may choose to hit his original target *or* the arm you parried with! If your arm suffers more than half your Hit Points in injury, it is automatically *crippled* (see *Crippling Injury*, p. 420).

Some unarmed skills (e.g., Judo) give you special options after a successful parry. See individual skill descriptions for details.

Active Defense Options

You can improve your odds of success with an active defense by choosing one of these options to go along with it.

Retreat

"Retreat" is not a separate defense, but an option you may add to *any* active defense against a melee attack. To exercise this option, you must move away from your attacker: at least one yard, but not more than 1/10 your Move – exactly as for a step (see *Step*, p. 368).

Retreating gives +3 to Dodge, or +1 to Block or Parry. *Exception:* If you parry using Boxing, Judo, Karate, or any fencing skill (Main-Gauche, Rapier, Saber, or Smallsword), a retreat gives +3 to Parry, as these forms make superior use of mobility.

Your step back takes place immediately. It is assumed to occur as your foe is striking. If it would take you out of your attacker's reach, *he still gets his attack*. If he has multiple attacks (e.g., from an Extra Attack, All-Out Attack, or Rapid Strike), your retreat does not put you beyond the reach of his remaining attacks. However, you get your retreating bonus on *all* active defense rolls against *all* of his attacks until your next turn.

If your opponent attacked you with a maneuver that allows a step, but has not yet taken his step, he can choose to follow you by taking his unused step. In effect, he is forcing you back!

You can retreat only *once* during your turn. In other words, once you retreat, you may not retreat again until after your next turn.

You cannot retreat while in a sitting or kneeling posture, or while stunned. You also cannot retreat if you moved faster than your Basic Move on your last turn (that is, if you were sprinting or using Enhanced Move).

You *can* retreat (by rolling) if you are lying down.

Dodge and Drop

When under fire, hit the dirt! You may drop to the ground while dodging, earning a +3 bonus to Dodge. This is a "dodge and drop." It is similar to a retreat, but only effective against *ranged* attacks. It also has a drawback: it leaves you prone on the ground.

Like a retreat, a dodge and drop applies to *all* of your defenses against one foe for one turn. Any cover you drop behind does not count against the initial attack that inspired the dodge and drop, but is effective against subsequent attacks directed at you.

Sacrificial Dodge and Drop: You can use dodge and drop in conjunction with sacrificial dodge (p. 375) to protect a friend who is no more than a step away from you. If you succeed, you both fall prone and *you* take the hit . . . unless you succeed by 3 or more, in which case *neither* of you is hit! You can also use a sacrificial dodge and drop to throw yourself on an explosive (e.g., a hand grenade). If you succeed, treat the blast as a contact explosion (see p. 415).

Diving for Cover: You may also attempt a dodge and drop if you are within the area of effect of an explosion, cone, or area-effect attack and there is cover (such as a trench) only a step away. Success means you reach it in time; failure means you don't. Even if there is no cover handy, an extra yard or two of distance from a blast can still help, since explosive damage declines with distance. If you succeed, you are a step farther away; if you fail, you suffer the effect before you make your step.

Flying or Swimming: Dodge and drop is possible only if a step would take you below concealing terrain (e.g., a flyer dropping below a hillcrest). You don't end up prone. You can still dive for cover to increase your distance from an explosion, etc.

Damage and Injury

If your attack roll succeeds and your target fails his defense roll (if any), you hit him! If your attack is one that can do damage, you must now make a "damage roll." This tells you how much *basic damage* you deal to your target.

Your weapon (and, for muscle-powered weapons, your ST), or your natural or Innate Attack, determines the number of dice you roll for damage. If your target has any Damage Resistance (DR) – from armor, the Damage Resistance advantage (p. 46), protective magic spells, etc. – he subtracts this from your damage roll. If your attack has an *armor divisor* (see pp. 102, 110), this modifies your target's DR.

If your damage roll is less than or equal to your target's effective DR, your attack *failed to penetrate* – it bounced off or was absorbed. A cutting, crushing, impaling, or piercing attack can sometimes cause damage without penetrating, however; see *Flexible Armor and Blunt Trauma* (p. 379).

If your damage roll *exceeds* your target's DR, the excess is the *penetrating damage*. If your foe has no DR, the entire damage roll is penetrating damage.

Once you know the penetrating damage of your attack, apply the wounding modifier for damage type (this matters only for cutting, impaling, and certain types of piercing damage; see p. 379). This gives the *injury* the foe suffers, which is subtracted from his Hit Points.

Example: Your "basic damage" with your sword is 2d+1 cutting. You roll 2 dice, add 1, and do 8 points of *basic damage*. Your foe has DR 3, so your *penetrating damage* is 5 points. You then apply the ×1.5 wounding modifier for cutting attacks, resulting in 7 points of *injury* (always round down). Your foe loses 7 HP.

Damage Roll

You usually make your own damage rolls, and the GM rolls for NPCs. Damage rolls are expressed as a number of dice, sometimes with a modifier; e.g., "6d-1" or "1d+2." A negative modifier can't reduce damage below 0 if the attack does *crushing* damage, or below 1 if it does *any other type* of damage.

High-damage attacks may express damage as a number of dice with a multiplier. For instance, "6d×3" means "roll 6d and multiply the total by 3." If those six dice came up 21, you would do 63 points of damage. This is just a quick way to roll lots of dice.

The result of the damage roll (*after* any additive or multiplicative modifiers, as explained above) is the hit's "basic damage."

Half Damage (1/2D) for Ranged Weapons

If a ranged weapon has two range statistics, the first is its Half Damage (1/2D) range, in yards. If the target is at or beyond 1/2D range, *divide basic damage by 2*, rounding down. (This is a simplification! Realistically, most weapons lose striking power gradually as air resistance slows them down, but a detailed calculation would be unplayable.)

Some ranged weapons (e.g., grenades) do not suffer a reduction in damage; these do not list a 1/2D range. The damage of an attack modified with Follow-Up (p. 105) is never halved, either – although its "carrier" attack is subject to 1/2D effects as usual.

Finally, if an attack has a 1/2D range but requires a resistance roll to avoid an affliction of some sort, add +3 to the resistance roll *instead* of halving damage (if any).

Knockback

When you hit someone very hard, you may knock him away from you! This is called "knockback." Only *crushing* and *cutting* attacks can cause knockback. A crushing attack can cause knockback regardless of whether it penetrates DR. A cutting attack can cause knockback only if it *fails* to penetrate DR.

Knockback depends on basic damage rolled *before* subtracting DR. For every *full* multiple of the target's ST-2 rolled, move the target one yard away from the attacker. For instance, a man with ST 10 would be knocked back one yard per full 8 points of basic damage. If the target has ST 3 or less, knockback is one yard per point of basic damage! If the target has no ST score at all (like a wall), or is not resisting, use its HP instead.

Anyone who suffers knockback must attempt a roll against the *highest* of DX, Acrobatics, or Judo. If he is knocked back more than one yard, he rolls at -1 per yard after the first. Perfect Balance (p. 74) gives +4 to this roll. On a failure, he falls down.

If you knock your foe into something solid, the result – including damage to him and whatever he hit – is as if he had collided with it at a speed equal to the yards of knockback. See *Collisions and Falls* (p. 430).

"Knockback Only": Some attacks – a jet of water, a shove (p. 372), etc. – do knockback but no damage. Roll the listed damage and work out knockback as usual, but no actual injury occurs (unless the target collides with something!).

Damage Resistance and Penetration

Damage Resistance (DR) rates the degree of protection that natural or worn armor, a force field, tough skin, etc. affords against damage. Objects and vehicles have their own DR values that protect against any damage *they* suffer – and if you take cover behind or inside them, their DR also protects *you*.

Subtract DR from basic damage. The result is the "penetrating damage" that punched through or deformed the armor enough to cause a significant injury. For instance, if you are hit by an attack that inflicts 6 points of basic damage and you're wearing mail with DR 4, you take 2 points of penetrating damage.

In general, DR from multiple sources is additive; e.g., if you have a natural DR of 2 and put on a tactical vest with DR 15, your total DR is 17. Exceptions will always be noted.

The DR of armor often varies by body part. If you are not using the hit location rules (see *Hit Location*, p. 398), just assume that any hit strikes the torso, and apply its DR.

Finally, note that DR from certain sources may provide differing degrees of protection against different damage types.

For more on DR, see *Damage Resistance* (p. 46) and *Armor* (p. 282).

Armor Divisors and Penetration Modifiers

An "armor divisor" indicates that an attack is especially good (or bad) at penetrating Damage Resistance. Armor divisors appear on weapon tables as numbers in parentheses after damage dice; e.g., "3d(2) pi" means 3d piercing damage with a (2) armor divisor.

A divisor of (2) or more means that DR protects at *reduced* value against the attack. Divide the target's DR by the number in parentheses before subtracting it from basic damage; e.g., (2) means DR protects at half value. Round DR *down*. Minimum DR is 0.

Some divisors are fractions, such as (0.5), (0.2), or (0.1). DR is *increased* against such attacks: multiply DR by 2 for (0.5), by 5 for (0.2), and by 10 for (0.1). In addition, treat DR 0 (e.g., bare skin) as if it were DR 1 against any fractional armor divisor!

Fast Damage Resolution for Multiple Hits

If a rapid-fire attack scores multiple hits, you can speed play as follows: instead of rolling damage per hit, determine damage for *one* hit, subtract DR, and multiply the resulting penetrating damage (or blunt trauma) by the number of hits.

There are several other "penetration modifiers" that affect the protection required to stop a given attack – see *Blood Agent* (p. 110), *Contact Agent* (p. 111), *Follow-Up* (p. 105), *Respiratory Agent* (p. 108), and *Sense-Based* (pp. 109, 115). These are often found on Afflictions and toxic attacks. See *Special Penetration Modifiers* (p. 416) for details.

Flexible Armor and Blunt Trauma

Flexible armor such as a leather jacket, mail hauberk, or a modern ballistic vest is much lighter than rigid armor, but it doesn't absorb the full force of the blows it stops. An attack that does crushing (cr), cutting (cut), impaling (imp), or piercing (pi-, pi, pi+, pi++) damage may inflict "blunt trauma" if it *fails* to penetrate flexible DR.

For every *full* 10 points of cutting, impaling, or piercing damage or 5 points of crushing damage stopped by your DR, you suffer 1 HP of injury due to blunt trauma. This is actual *injury*, not basic damage. There is no wounding multiplier.

If even *one* point of damage penetrates your flexible DR, however, you do not suffer blunt trauma.

If you layer other DR over flexible DR, only damage that penetrates the outer layer can inflict blunt trauma.

Corrosion

An attack that inflicts *corrosion* (cor) damage – acids, disintegration beams, etc. – destroys one point of the target's DR per 5 points of basic damage rolled. This affects armor first, then natural DR. This reduces DR against future attacks, not against the attack that burned off the DR! Natural DR lost by living beings heals at the same rate as lost HP.

Overpenetration and Cover

Some attacks are powerful enough to pass right through cover, a shield, or a victim, and damage someone on the other side. It's usually too much trouble to worry about this, but if it becomes important (e.g., shooting through a door, or a bystander behind your target), see *Overpenetration* (p. 408).

Some attacks are powerful enough to pass right through cover, a shield, or a victim, and damage someone on the other side.

Hurting Yourself

Any time you strike *unarmed* (with bare hands, feet, fangs, etc.) and hit a target with DR 3+, you may hurt *yourself!* For every 5 points of basic damage you roll, you take one point of crushing damage, up to a maximum equal to the DR of the target you hit. Apply this damage to the body part you used to attack, if you are using hit locations. Your own DR protects against this damage. *Exception:* This rule does not apply if the target's DR has the Tough Skin limitation (see *Damage Resistance*, p. 46).

Wounding Modifiers and Injury

Any damage left over after subtracting DR from basic damage is "penetrating damage." If there is any penetrating damage, multiply it by the attack's "wounding modifier." This is a multiplier that depends on damage type:

- Small piercing (pi-): ×*0.5*.
- Burning (burn), corrosion (cor), crushing (cr), fatigue (fat), piercing (pi), and toxic (tox): ×*1 (damage is unchanged)*.
- Cutting (cut) and large piercing (pi+): ×*1.5*.
- Impaling (imp) and huge piercing (pi++): ×*2*.

The damage after this multiplier determines the injury: the HP lost by the target. Round fractions *down*, but the minimum injury is 1 HP for any attack that penetrates DR at all. Reduce the victim's current HP total by the injury sustained.

Example: Filthy Pierre is struck by an axe, which does cutting damage. His attacker's basic damage roll is 7, but Pierre is wearing DR 2 leather armor, so he suffers 5 points of penetrating damage. Multiplying by 1.5 for cutting damage, Pierre ends up losing 7.5 HP, which rounds to 7 HP – a nasty wound!

Note that blunt trauma injury has no wounding modifier.

Where you were hit may further affect the wounding modifier; see *Hit Location* (p. 398). The rules above assume a hit to the torso or face.

Injury to Unliving, Homogenous, and Diffuse Targets

The *Wounding Modifiers and Injury* rules assume a human, animal, or other ordinary living being. Machines, corporeal undead, swarms, and other unusual entities are much less vulnerable to certain damage types:

Unliving: Machines and anyone with Injury Tolerance (Unliving) (p. 60), such as most corporeal undead, are less vulnerable to *impaling* and *piercing* damage. This gives impaling and huge piercing a wounding modifier of ×1; large piercing, ×1/2; piercing, ×1/3; and small piercing, ×1/5.

Homogenous: Things that lack vulnerable internal parts or mechanisms – such as uniformly solid or hollow objects (e.g., melee weapons, shields, and furniture), unpowered vehicles, trees, and walls – are even less vulnerable! This includes animated statues, blobs, and anything else with Injury Tolerance (Homogenous). Impaling and huge piercing have a wounding modifier of ×1/2; large piercing, ×1/3; piercing, ×1/5; and small piercing, ×1/10.

Diffuse: A target with Injury Tolerance (Diffuse) is even harder to damage! This includes swarms, air elementals, nets, etc. Impaling and piercing attacks (of any size) never do more than *1 HP* of injury, regardless of penetrating damage! Other attacks can never do more than *2 HP* of injury. *Exception:* Area-effect, cone, and explosion attacks cause normal injury.

Example: Edmund Zhang empties his 9mm machine pistol (2d+2 pi damage) at an approaching zombie. He hits three times. After subtracting the zombie's DR 1, he scores 8 points of penetrating damage with the first bullet, 7 with the second, and 10 with the third. The zombie has Injury Tolerance (Unliving), so the usual ×1 wounding modifier for piercing damage drops to ×1/3. Rounding down, the three bullets inflict 2 HP, 2 HP, and 3 HP of injury. The zombie had 24 HP, so it has 17 HP left. Undaunted, it shambles forward. Edmund should have brought an axe or a flamethrower!

Effects of Injury

If you are injured, subtract the points of injury from your Hit Points. Usually, you are still in the fight as long as you have positive HP; see *General Injury: Lost Hit Points* (p. 419) for details. The most important effects are:

- If you have *1/3 or less* of your HP remaining, you are reeling from your wounds. *Halve* your Basic Speed and Move (round up), which also reduces your Dodge.
- If you have *zero or fewer* HP left, you are hanging onto consciousness through sheer willpower and adrenaline – or are barely holding together, if you're a machine. You must roll vs. HT *each turn* to avoid falling unconscious. If you pass out, see *Recovering from Unconsciousness* (p. 423) for how long it will take to recover.
- If you go to *fully negative* HP (for instance, -10 if you have 10 HP), you risk death! You must make an immediate HT roll to avoid dying. You must make *another* HT roll to avoid death each time you lose an extra multiple of your HP – that is, at -2×HP, -3×HP, and so on. If you reach -5×HP, you die *automatically*. See *Death* (p. 423).

The *sudden* loss of HP can have additional effects:

Shock: Any injury that causes a loss of HP also causes "shock." Shock is a penalty to DX, IQ, and skills based on those attributes *on your next turn* (only). This is -1 per HP lost unless you have 20 or more HP, in which case it is -1 per (HP/10) lost, rounded down. The shock penalty cannot exceed -4, no matter how much injury you suffer.

Major Wounds: Any single injury that inflicts a wound in excess of 1/2 your HP is a *major wound*. For a major wound to the torso, you must make a HT roll. Failure means you're stunned and knocked down; failure by 5+ means you pass out. For details, see *Major Wounds* (p. 420) and *Knockdown and Stunning* (p. 420).

Stunning: If you're stunned, you are -4 to active defenses and cannot retreat, and must Do Nothing on your next turn. At the *end* of your turn, attempt a HT roll to recover. If you fail, you're still stunned and must Do Nothing for another turn. And so on.

For more about injuries – and how to recover from them! – see *Injuries* (p. 418).

Attacks Without Damage

Not all attacks inflict damage. Some – stun rays, drugs, etc. – offer a modified HT roll to resist (e.g., HT-2). If the victim is hit and fails his HT roll, he's affected; see *Affliction* (p. 35) for details. Other attacks restrain the victim, requiring ST rolls to break free; see *Binding* (p. 40).

Special Damage

Certain attacks have "special effects": poison, electrical shocks, stunning, setting the victim on fire, etc. See the weapon tables, specific attack enhancements in Chapter 2, and the relevant sections of Chapters 13 and 14 for details.

Follow-Up Damage

Some attacks, such as poison darts and exploding bullets, have "follow-up" damage: a second type of damage that occurs an instant *after* the primary effect. The primary effect is always ordinary damage of some type – piercing, impaling, etc.

If the primary damage penetrates the target's DR, the follow-up effect occurs *inside* the target. DR has no effect! Follow-up effects that occur internally *never* inflict knockback or blunt trauma – even if their damage type usually does.

If the primary damage fails to penetrate DR, the follow-up effect occurs outside the target, if appropriate, as if the target had been touched – just like a linked effect (see below). Thus, poison that must enter the bloodstream would have no effect if the arrow that carried it failed to penetrate. On the other hand, an explosive projectile would still do damage . . . but the DR that stopped the primary damage would protect against it.

Linked Effects

Some attacks have a linked effect. This is a second type of damage or other effect that occurs simultaneously with the primary effect. Make *one* roll to hit, but resolve all damage and resistance rolls *separately* for the primary effect and the linked effect. An example of a linked effect is a grenade that inflicts both a crushing explosion and a blinding flash of light on detonation. A person in armor might be blinded but unhurt, while an unarmored person with eye protection might be wounded but not blinded.

Critical Hits and Misses

"Critical hits" and "critical misses" are critical successes and failures (see *Degree of Success or Failure*, p. 347) on rolls to attack or defend in combat.

Critical Hits

A "critical hit" is an especially lucky or good blow. It automatically hits home – your foe does *not* get an active defense roll!

Whenever you roll a natural 3 or 4 when attacking, you get a critical hit *and* you roll on the *Critical Hit Table* (p. 556). If you have high skill or a particularly good shot at your foe, you will get critical hits more often. With an *effective* skill of 15+, any roll of 5 or less is a critical hit; with an *effective* skill of 16+, any roll of 6 or less is a critical hit. Bonuses to hit (e.g., for All-Out Attack or a large target) *do* make critical hits more likely, while penalties (e.g., for a difficult target) make critical hits less likely.

Example: Louis LeBlanc needs to roll 15 or less to hit Filthy Pierre. He rolls a 5. That's a critical hit for him! (A 3 or 4 would be a critical hit for *anyone!*) Because this is a critical hit, Pierre gets *no defense roll*. The blow automatically hits!

A critical hit is often the only way for an unskilled character to injure a superior opponent in a fair fight or get through heavy armor with a light weapon. Once in a while, everybody gets a lucky shot. But note that the most likely result on the table is "no extra damage." Even if you get lucky and hit a superior foe, your blow might not be especially hard . . .

Critical Success on Defense Rolls

If you get a critical success on a defense roll against a melee attack, then your *foe* goes immediately to the *Critical Miss Table* (p. 556). You "faked him out," knocked his weapon from his hand, or otherwise defended *very* well!

A critical success on a defense roll against a *ranged* attack has no special effect, with one exception: if the attack was a thrown weapon, a critical success on a bare-handed parry lets you *catch* the incoming weapon without hurting yourself, if you so desire.

Example of Combat

Louis LeBlanc's weapon is a shortsword. He is standing two yards from his foe, Filthy Pierre. On his turn, Louis takes the Attack maneuver, steps one yard toward Pierre, and strikes!

Louis has Shortsword-15, and there are no adverse conditions that would give him a skill penalty; therefore, he needs to roll 15 or less to hit. He swings and rolls a 13, so he hits.

Pierre has a Dodge of 8, Shield-12 (giving him a Block of 9), and Shortsword-11 (giving him a Parry of 8). His Block is his best defense, so he'll use it whenever he can. Pierre's small shield gives a +1 Defense Bonus (see *Shields*, p. 287); this increases all of his defenses by 1.

Pierre's Block defense is therefore 9 + 1, for a total of 10 . . . or 11, if he retreats. If he blocks and retreats, and rolls 11 or less, he can defend against the accurate blow that Louis just threw. But he gets a 12. Too bad! He's hit.

Although the combat calculations may seem complex at first, they are *simple* in play! The attacker rolls against his skill, as shown on his character sheet. The defender adds up his defenses, as shown on *his* character sheet, and rolls against the total. That's it!

To continue the example: Louis is attacking Pierre. His blow was good, and Pierre failed to defend. So the blow got through.

Now Louis rolls for damage. Louis' player has already figured how much damage he does with a shortsword and written it on his character sheet. He has ST 11, so his swing does 1d+1 damage. He rolls one die and gets a 4. Adding one point yields a 5, so Pierre takes 5 points of basic damage.

However, Pierre is wearing cloth armor, which has DR 1. This subtracts a point from Louis' damage roll – only 4 points of damage penetrate Pierre's armor.

A shortsword is a cutting weapon, with a ×1.5 wounding modifier. This multiplies the penetrating damage . . . so Pierre takes a 6 HP wound! That blow could knock a lesser man down. Sad but true . . . one good sword blow can settle a fight.

The GM subtracts 6 from Pierre's HP. Luckily for Pierre, this is not *more* than half of his original 12 HP, so he does not have to roll to see if he is knocked down or stunned. However, if he attacks on his next turn, he will have a shock penalty equal to the HP he lost or -4, whichever is the lower penalty. Since he lost 6 HP, he's at -4 to skill.

And the fight continues.

Critical Misses

The opposite of a "critical hit" is a "critical miss." You suffer a critical miss when you fail *badly* on an attack or defense roll. You might break your weapon, throw it away, or even hit yourself!

A roll of 18 is *always* a critical miss. A roll of 17 is a critical miss unless your effective skill is 16 or better; in that case, it is an ordinary miss. A melee attack (but *not* a ranged attack) or defense roll that fails by 10 or more is also a critical miss.

If you get a critical miss on an *attack* or a *parry*, roll on the appropriate *Critical Miss Table* (p. 556). Apply the result immediately. If you critically miss a *dodge*, you lose your footing and fall prone (no effect if already prone). If you tried to *block*, you lose your grip on your shield and must take a turn to ready it before you can use it to block again.

A firearm may also *malfunction* on a bad roll; see *Malfunctions* (p. 407). A malfunction has "priority" over a critical miss: if both would occur, only the malfunction takes place.

Other Actions in Combat

Combatants can perform actions other than attacking and moving. Physical actions usually require Ready maneuvers, while mental ones call for Concentrate maneuvers.

Readying Weapons and Other Gear

A "ready" item is one that is in hand, ready for action. A weapon or other device is *unready* if in a holster, scabbard, pocket, belt, or pack; on the floor or a table; etc.

It generally takes a single Ready maneuver to ready an item that is on your belt, in a pocket, in a scabbard or holster, or slung over your back.

If you *stand still*, a single Ready maneuver also lets you ready an item from a table, wall rack, etc., provided it is within your reach (normally one yard).

A single Ready maneuver lets you accept one item that another person is holding out to you. He must be close enough to reach you (one yard, for a human), and he must have taken a Ready maneuver on *his* turn in order to hold out the item for you. You must both *stand still*. Note that you cannot exchange two items simultaneously. Each object exchanged requires a separate Ready maneuver on the part of each person involved. (Recall that these rules are for *combat;* obviously two people walking down the street can hand things back and forth at will.)

Some additional rules:

Picking something up from the ground. You must be kneeling, crawling, sitting, or lying down to do so, unless you have arms with a two-yard reach! If you are standing, you must first take a Change Posture maneuver to kneel, sit, etc.

Readying a weapon. You can only attack or parry with a weapon that is in your hand and ready to use. You must "ready" some weapons again after each attack! For instance, you must ready a poleaxe after each swing, because its momentum carries it away. See the weapon tables in Chapter 8 to learn which weapons require readying after use.

Reloading a weapon. This requires several consecutive Ready maneuvers. The number of Ready maneuvers required appears in parentheses after the weapon's Shots statistic. For example, a longbow requires two Ready maneuvers: one to ready the arrow by removing it from your quiver, and one to ready the bow by placing the arrow to the string and drawing it. That takes two turns. On the third turn, you can Aim or Attack.

Readying a shield or cloak. If a shield or cloak is on the ground, or slung on your back, it takes a number of Ready maneuvers equal to its Defense Bonus to prepare it for combat. It takes the same amount of time to don your cloak or sling your shield again – but you can drop it on the ground with a single Ready maneuver (*not* a free action!). For the purpose of readying, treat a *buckler* as a weapon, not as a shield.

Long actions. Many physical actions take more than one second to complete. In combat, choose the Ready maneuver each turn until you are finished. This is not a specific maneuver, but a "generic" choice that lets you do one second's worth of any multi-second action. The GM decides how many turns each action takes; see *Typical Long Actions* (p. 383) for examples. Some things (like piling up rocks to stand on) can be interrupted in the middle if necessary, to take any necessary maneuver or other action. Other things (like ritual magic) can't be interrupted; if you stop in the middle, you must start over.

Action	*Time*
Pick up a heavy object in one hand (weight up to 2×BL)	2 sec.
Pick up a heavy object in two hands (weight up to 8×BL)	4 sec.
Open an unlocked box, briefcase, chest, door, etc.	1 sec.
Find a loose item in a box, briefcase, pack, etc. (if it's not hidden)	2d seconds
Find an item in your own pocket	1d seconds
Write a brief note	5 sec. per sentence
Read a brief note	2 sec. per sentence
Swallow a pill or potion	2 sec.
Light a candle, cigarette, fuse, match, torch, etc.	2 sec.
Replace a weapon in its scabbard, drop a small item into your pocket	2 sec.
Search an unresisting person fairly thoroughly	1 min.
Put on a suit of armor (for a vacc suit or battlesuit)	3 sec. per piece (30 sec./piece

If an action takes a long time, you can help the GM keep track of events by counting the seconds each time you announce the maneuver. For instance, to reload a weapon, you would say, "Reloading my gun – one second" on your first turn, and, "Reloading my gun – two seconds and finished" on your second turn.

When Is a Weapon Ready?

A weapon is "ready" if it is in your hand and ready to attack. It takes one turn to ready a weapon from its scabbard (but see *Fast-Draw*, p. 194). A few special rules:

Changing Grips: Some long weapons require one extra turn of readying to go from a one-yard to a two-yard reach, or from a two-yard to a three-yard reach, or vice versa. An *unready* weapon may be re-readied to any legal reach, regardless of how you used it before; this is just part of the Ready maneuver.

Unbalanced Weapons: A few large and unwieldy weapons are carried out of line by their momentum when you attack. Unless your ST is at least 1.5 times that required to wield the weapon, they become *unready* after you attack with them; to use them again, take a Ready maneuver. If you fall down, lose your balance, or are stunned, and your weapon is one that requires readying after each use, it becomes unready!

Holstering: It takes one second to return a pistol to a holster.

Scabbarding: It takes *two* seconds to return a weapon to a scabbard or belt-loop.

Typical Long Actions

See the table above for the duration of typical long actions. You must take a Ready maneuver each second.

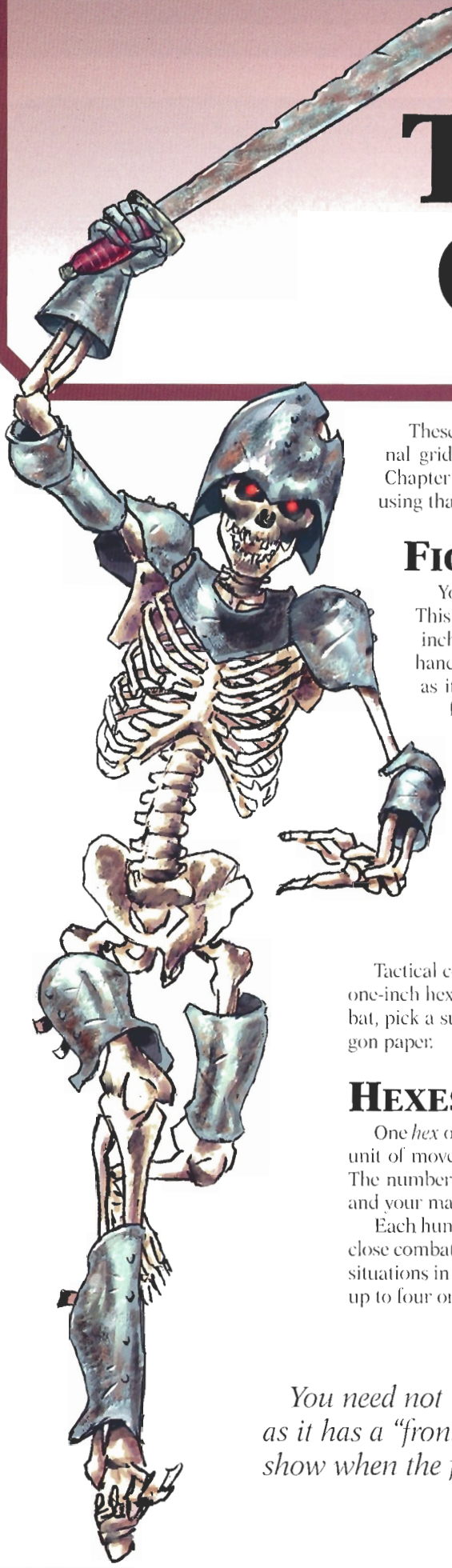
The times required for long actions are realistic, but they can also sideline a player – for instance, if his character rummages through his backpack. *If the GM deems it dramatically appropriate,* he may let PCs shave off a few seconds by making a successful DX or IQ roll, at the cost of failure having other problems (e.g., dropping the backpack and spilling its contents).

This completes the combat system. Get out there and fight!

When you are comfortable with these rules, you can proceed to Chapter 12, *Tactical Combat*, if you wish to use a hex grid for more precise resolution of battles. GMs may also consult Chapter 13 for advanced rules concerning factors that might not come into play in every battle: hit locations, mounted opponents, surprise attacks, and various exotic weapons. See also pp. 462-470 for rules for vehicles, pp. 455-461 for rules for animals, and p. 547-559 for the collected combat tables.

Chapter Twelve

Tactical Combat



These rules let you resolve combat using counters or figures on a hexagonal grid. They assume you have already mastered the combat system in Chapter 11, and cover only the exceptions and special cases that arise when using that system on a map.

Figures

You need a marker or miniature figure to represent each combatant. This can be metal, plastic . . . even cardboard. These rules assume one-inch hexes, or a 50mm scale, for *maps* – but 25mm *figures* are easier to handle. Of course, you need not use figures! *Any* counter will do, as long as it has a "front" to indicate facing and some way to show when the fighter it represents is prone.

Gamers who want the fun of detailed figures at the cost of cardboard counters should consider ***Cardboard Heroes,*** SJ Games' line of upright cardboard figures.

The Combat Map

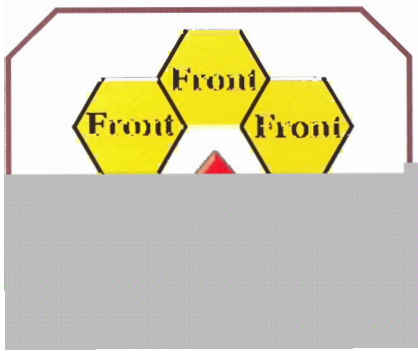
Tactical combat uses a "combat map" marked off in hexagons, or *hexes.* Each one-inch hex on the map represents an area one yard across. At the start of combat, pick a suitable map, typically one you have drawn on a blank sheet of hexagon paper.

Hexes

One *hex* on the combat map represents one yard of distance. It is also the basic unit of movement: each hex a fighter moves represents one yard of movement. The number of hexes you can move on your turn depends on your Move score and your maneuver (see *Maneuvers in Tactical Combat,* p. 385).

Each human-sized or smaller fighter must occupy one hex. Exceptions include close combat (see *Close Combat,* p. 391), swarms (see *Swarm Attacks,* p. 461), and situations in which people are crowded together but not fighting (you could cram up to four ordinary-sized humans into a single hex, if they were friendly).

You need not use figures! Any counter will do, as long as it has a "front" to indicate facing and some way to show when the fighter it represents is prone.


Front
Front
Front

Roll first for the target closest to you. If you miss, or if that target dodges, roll for the next target. And so on. Keep rolling until you hit, or someone blocks or parries your attack, or you run out of targets. If your attack went along a line between two occupied hexes, roll randomly to see which one you check first.

Anyone (friend or foe) gets the same defense against this attack that he would have had had your attack been intentional.

Opportunity Fire

If you have a ranged weapon, you may watch a specified area and attack as soon as a target presents itself. This is called "opportunity fire."

To use opportunity fire, you must take the Wait maneuver. You must *stand still* and watch for a target *in a specified area.* You must face the area you are "covering." You may do *nothing* else.

Hexes Watched	*Attack Penalty*
1	0
2	-1
3-4	-2
5-6	-3
7-10	-4
11+	-5

You may also specify a single straight line, and say that you will fire at the first target that crosses the line. The penalty for this kind of opportunity fire is only -2.

When you attack, apply the appropriate penalty above as well as all relevant ranged-combat modifiers. You *cannot* claim any of the bonuses listed for the Aim maneuver (p. 364). *Exception:* If you watch a *single hex* (only), you can Aim *and* Wait. Each second you wait for a target also counts as an Aim maneuver, and you will get the normal bonus for that amount of aiming when you finally attack.

The GM should make sure that players carefully specify the area they are watching for opportunity fire. In conflicts between PCs, the players should tell the GM *in secret* so that their opponents do not know where they are planning to fire.

Target Discrimination: Normally, when you take opportunity fire, you *must* attack the first target that appears in the designated area – friend or foe! You are free to specify that you are *not* attacking automatically, usually to avoid shooting a friend. If so, the GM will make a Vision roll for you when a target appears and tell you whether you *think* it is friend or foe. However, you have an extra -2 to hit because of the time you spent deciding.

If a target appears in the specified area, you *must* attack it (you can try to discriminate, but this will give a penalty to hit – see below). Your attack takes place *immediately.* If two or more people are taking opportunity fire at the same target, assume that their attacks are simultaneous.

If no target appears, you simply wasted your turn!

All of the area to be "covered" must be within your arc of vision (see p. 389). The larger the area you have to watch, the greater the penalty when you attack:

Pop-Up Attacks

A "pop-up attack" is a special Attack maneuver in which you emerge from cover, move no more than one hex, make a ranged attack, and *return* to cover – all in the space of one turn! Examples include ducking around a corner or a tree, or out of a trench. This is possible with any thrown weapon, firearm, or crossbow, but *not* with a bow or a sling.

You cannot aim a pop-up attack. In fact, there is an extra -2 to hit because you couldn't see your target at the beginning of your turn.

Note that when you emerge from cover to attack, anyone targeting your hex with opportunity fire *can* attack you. If so, your only legal defense is a dodge.

Overshooting and Stray Shots

If you *make* your attack roll but your foe *blocks* or *parries* successfully, assume your weapon or missile hits the ground. It has no chance of hitting anyone.

If your foe *dodges,* however, the projectile goes *past* him and may hit someone else. Proceed as for *Hitting the Wrong Target,* above, but start with the closest target on the *other side* of your foe. (You already know you didn't hit anybody *between* you and your foe, or he would not have had to defend.)

Defending in Tactical Combat

Active defenses work as described in Chapter 11, with a few additional rules.

Defending Against Attacks from the Side

Against an attack that comes from one of your *side* hexes, you defend at -2 unless you have Peripheral Vision (p. 74) or 360° Vision (p. 34). *Regardless* of those advantages:

- If you have a shield, *you cannot block an attack that comes from your weapon side,* only one that comes from your shield side.
- If you have a one-handed melee weapon, *you cannot parry an attack that comes from the other side of your body,* only one that comes from the same side, unless your weapon arm has the Extra-Flexible enhancement or you possess the Double-Jointed advantage.

"Runaround" Attacks

A fast-moving fighter can sometimes start in front of a foe and run behind him to strike from his back hex. Against a true attack from behind, no active defense is possible, because the victim did not know the attack was coming. If the attacker starts in front and runs behind, outmaneuvering his victim through sheer speed, the victim *does* know he's being attacked. Treat it as a side attack: -2 to active defenses, unless the victim has compensating advantages.

Defending Against Attacks from the Back

Against an attack that comes from your *back* hex, *you cannot defend at all* unless you have Peripheral Vision (which lets you defend at -2) or 360° Vision (which lets you defend at no penalty). Even if you have one of those advantages, you have an extra -2 to *parry* an attack from behind, and cannot *block* at all, unless your weapon or shield arm has the Extra-Flexible enhancement or you have the Double-Jointed advantage.

Retreating

A retreat takes you one step – normally one hex – directly away from the foe you are defending against. You cannot retreat into an occupied hex. You may change facing by *one* hexside, if you wish, as you retreat.

Close Combat

"Close combat" is any situation in which you occupy the same hex as your foe or try to move through his hex. Use the rules given under *Evading* (p. 368) and *Unarmed Combat* (p. 370) in Chapter 11, but with the additions below.

Entering a Foe's Hex

You may move or step into an enemy's hex using any maneuver that allows you enough movement to enter that hex. You are in "close combat" as soon as you enter an opponent's hex, *regardless* of your maneuver or that of your foe.

If you take a Move, Move and Attack, or All-Out Attack maneuver, you can always run into a foe's hex and *stop* there, facing him. If you do not wish to stop, you *must* attempt to *evade* (p. 368) or *slam* (p. 368) your foe – your choice, within the limits of your maneuver.

When you enter an enemy-occupied hex, you occupy *half* the hex. You have the half of the hex from which you entered; he has the other half. To enter any of your front hexes on the enemy's side, you have to "move through" him by evading.

Evading in Tactical Combat

To evade a foe, you must have enough movement points not only to *enter* his hex, but also to *leave* his hex! If your movement ends in his hex, you *cannot* evade on that turn.

Leaving a Foe's Hex

If you start your turn in a foe's hex and he isn't grappling you, you can move out of the hex through any of the three hexes on *your* side of the hex. If you do this using a Move or Move and Attack, you must spend movement points to change facing, sidestep, or step backward. To use forward movement to leave through one of the three hexes on your *foe's* side, you must *evade* him (see above).

If you take a maneuver that allows a step, you can step out of the hex and attack, feint, etc. with a one-hex reach weapon – or you can make a close-combat attack and *then* step out – but your step can only take you into one of the three hexes on *your* side of the hex.

If your foe has grappled you, you may still choose a maneuver on your turn, but you cannot leave the hex until you break free (see *Actions After Being Grappled*, p. 371).

Weapons for Close Combat

You can only use small, easily managed weapons in close combat. You can attack with any melee weapon with reach "C." If using a ranged weapon, *ignore* the usual speed/range penalty and apply the weapon's Bulk statistic as a penalty to hit.

Readying in Close Combat

You must make a DX roll to ready a weapon in close combat. If you fail, you still take a Ready maneuver but you accomplish nothing. If you have the Fast-Draw skill, you must make *two* rolls: the DX roll above and a Fast-Draw roll to get your weapon *quickly*. If you fail the Fast-Draw roll, you ready the weapon but it takes a full Ready maneuver.

Defense in Close Combat

You can *dodge* normally in close combat. You can only *parry* using an empty hand or a weapon with reach "C" (e.g., a knife). You cannot *block* at all!

You *can* retreat (see p. 377) in close combat, if you aren't being grappled. Simply step out of close combat and into any of the three hexes on *your* side of the close-combat hex. This gives the usual bonus to your active defense roll.

Shields in Close Combat

A shield becomes a potentially deadly nuisance in close combat. It still provides its Defense Bonus, but it hampers *you* while you wear it.

Any attack you make in close combat – except for the *initial* slam, attack, etc. when you first move into the foe's hex – has a penalty equal to the Defense Bonus of your shield! Any DX roll you attempt in close combat *after* your first turn of close combat has the same penalty.

It takes a one-turn Ready maneuver and a successful DX roll to get rid of your shield in close combat.

Multiple Close Combat

Any number of people may participate in close combat in the same hex. This is easy to depict with flat counters, but it can be difficult to show with 3D figures – especially if some fighters are standing and others are lying down. A good compromise is to allow a fighter to declare himself in close combat with an opponent while still in an adjacent hex.

Up to two fighters may combine their efforts in a takedown attempt against a single foe; up to three may work together in a pin attempt against a single foe. In either case, use the ST, DX, or grappling skill of the attacker with the *best* score, and add 1/5 (round down) of the score of each of his helpers.

Striking Into a Close Combat

If you are not in close combat yourself, you may help allies who *are* in close combat by standing outside the close-combat hex and attacking an enemy who is in close combat with them. Your attack is at -2, plus any modifier for the target's posture (lying down, for instance).

If you *hit*, your foe may only defend as explained in *Defense in Close Combat*.

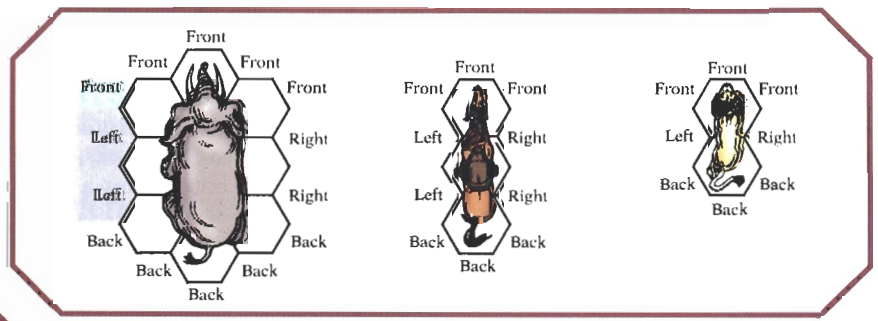
If you *miss*, or your foe successfully *dodges*, you may hit someone else – friend or foe – in the hex. If there is more than one possible target, roll randomly to see who you "attack" first. Your attack roll is a flat 9 *or* the number you would have had to roll to hit him on purpose, whichever is *worse*. If you hit, the victim may attempt any legal close-combat defense. Keep rolling until you run out of targets or you actually hit someone.

Multi-Hex Figures

Giants, large animals, monsters, vehicles, etc. often occupy more than one hex. It can be helpful to make multi-hex counters or, if using figures, to cut cardboard bases of the appropriate size.

The *head* or front of a multi-hex figure controls its movement. Handle distance moved, direction of movement, and facing exactly as if the creature's head were a normal one-hex figure. The rest of the body follows. This might mean, for instance, that a dragon's head moves only 3 hexes while its tail sweeps through *10*. That's all right – and it's a good way for the dragon to knock people over.

A multi-hex figure cannot fit through a map space narrower than its widest point. However, the GM should be lenient in allowing large figures to overlap walls and the like. Remember that when a hex is cut by a straight wall, etc., a partial hex counts as a full hex.



Arc of Vision

The head of a multi-hex creature determines its arc of vision. This *does* mean that much of a large creature's body may fall outside its own arc of vision! However, many large creatures also have Peripheral Vision (p. 74).

Front, Side, and Back Hexes

Each multi-hex creature has front, right, left, and back hexes, corresponding to those of a human (see illustration).

Slam and Overrun

When a figure two or more hexes in size moves through a smaller one, treat it as a slam (see *Slam*, p. 368). This gives the small figure a chance to get out of the way. If it fails to do so, it will probably be knocked down! The larger figure can keep right on moving unless it is itself knocked down.

Chapter Thirteen
Special Combat Situations

Surprise Attacks and Initiative

When the PCs surprise a group of adversaries, or vice versa, the surprised party may not be able to react immediately. In this case, the attackers should get one or more "free turns." The GM is responsible for determining when the attackers have achieved surprise.

Adventurers, guards, etc. rarely suffer total surprise unless they are actually asleep. But total surprise would be appropriate if a group of werewolves came charging through the door of the local library. (In fact, such an extreme case might justify a Fright Check – at least for the librarian.)

These advanced combat rules cover less-common tactical situations, or offer additional detail. They are modular – the GM decides which rules are in force in a given situation.

A character with Combat Reflexes is rarely surprised, and will *never* "freeze." He also gets +6 on all IQ rolls to recover from surprise. Note that many wild animals have Combat Reflexes – see Chapter 16 for examples.

Total Surprise

When the defenders are taken *completely* by surprise, they "freeze." The GM rolls 1d. This is the number of seconds that pass before the defenders can react *at all.* Until that time is up, they are mentally stunned and must take the Do Nothing maneuver. *Exception:* Those with Combat Reflexes never freeze, and treat total surprise as *partial* surprise.

After the initial "freeze" ends, each defender must roll against his basic IQ at the start of his turn until he recovers. On a success, he must take Do Nothing that turn, but can act normally *for the rest of the combat.* On a failure, he is still mentally stunned; he may roll again at the start of his next turn. A low-IQ character, taken totally by surprise, could miss the whole combat!

Partial Surprise

This may occur when the defenders were expecting trouble . . . or when each party surprised the other! The GM should require each side to roll for *initiative.*

To determine who gets the initiative, the leader of each side rolls 1d. A leader with Combat Reflexes gets +2, or +1 if he doesn't have Combat Reflexes but someone else on his side does (this bonus is not cumulative for more than one character). The leader with the higher IQ gets +1. Having even one point in Tactics skill gives +1 on initiative rolls; Tactics at level 20+ gives +2. The GM can apply other modifiers as he sees fit; e.g., if he thinks one side was more alert than the other.

If one side is totally leaderless, the GM rolls for them. They get an automatic -2 to initiative. (This does not apply to animals or any other group with IQ 5 or less.)

The side that gets the highest roll gets the initiative, and can move and act normally. Everyone on the other side is mentally stunned, and must make IQ rolls on their turns, as described for total surprise, to snap out of it. However, with partial surprise, there is a +1 bonus to IQ on the second turn, +2 on the third turn, and so on . . . even low IQ characters catch on after a few seconds. Note that animals often have Combat Reflexes, which counteracts their low IQ.

If the initiative roll is a tie, nobody was taken by surprise.

Visibility

A combat situation where some fighters can't see their foes affects attacks and defenses.

Attacker cannot see anything. If the attacker is blind or in *total* darkness, he can make a Hearing-2 roll – or use some other method – to discover his foe's location. If he fails his Hearing roll, he may attack in a randomly chosen direction (on a map, he must specify the hex). He attacks at -10 (-6 if he is accustomed to being blind). Roll hit location randomly.

Attacker cannot see his foe, but can see his other surroundings. If only the attacker's foe is invisible, use the rules above, but the attack penalty is only -6.

Attacker cannot see his foe, but knows his location for sure. If the foe is in a single smoke-filled hex or the like, use the rules above, but no Hearing roll is required and the attack penalty is only -4.

Defender cannot see his attacker. If the attacker (including his weapon) is invisible but the defender is aware that he is being attacked, he may dodge at -4. If the defender makes a Hearing-2 roll, he may also parry or block – still at -4. If he is completely unaware of his attacker, he gets *no defense at all!* If the attacker is in smoke or unnatural darkness, but the defender is not, he defends normally, since he can see the weapon coming.

Note also that an unseen fighter can safely try things that a normal fighter could never do – or he may just wait in a corner until his foe is exhausted!

Torches and Flashlights

A torch or flashlight reduces the penalty to attack rolls for darkness. Assume that any such light within line of sight reduces the penalty from -10 (total darkness) to -3. Almost every light source has a limited range or radius – see the item description for details.

You can also use a torch as a weapon: treat it as a baton that does one point of burning damage as a linked effect (see *Linked Effects*, p. 381). A torch can set things afire, given enough time. Most oil you're likely to encounter in a medieval world catches fire after three seconds of contact with an open flame; ordinary clothing ignites after four seconds, and kindling after 10 seconds. Other things are left to the GM's judgment.

It's possible to carry a light in your "off" hand, leaving your weapon hand free for combat. It's even possible to parry with it – at the usual penalties for using the off hand. A torch or ordinary flashlight will smash on the first blow if it is used to parry a weapon three times its weight or more! TL7+ "police" flashlights are serviceable batons: *triple* the cost and weight for an ordinary heavy flashlight (see *Camping and Survival Gear*, p. 288).

Special Movement

Most forms of enhanced mobility have *significant* effects on combat.

High-Speed Movement

It's possible to go so fast that you can't easily stop or change course. Such "high-speed movement" occurs whenever your present velocity exceeds your Basic Move. These rules apply equally to living beings and to fast-moving vehicles.

You may decide to accelerate to high speed at the *end* of any turn during which you've moved your full Basic Move – modified for encumbrance, if any – in one direction, more or less (no more than one 60° turn). You must have taken either a Move or a Move and Attack maneuver that turn, and you must be standing up.

Once you switch to high-speed movement, you move as described under *Sprinting* (p. 354). You may start the *next* turn with a velocity up to 20% greater than your Move (at minimum, +1 Move). If you have the Enhanced Move advantage, or are a vehicle with a top speed greater than your Move, you may start your next turn with a velocity up to 100% greater than Basic Move. In all cases, use the high-speed movement rules below.

Velocity

Keep track of your velocity (in yards per second). You can increase it or decrease it at the *end* of each turn; see *Accelerating*, below. You *must* move as fast as your velocity – that is, if your velocity is 17, you must move 17 yards that turn unless something (e.g., bad footing) slows you down.

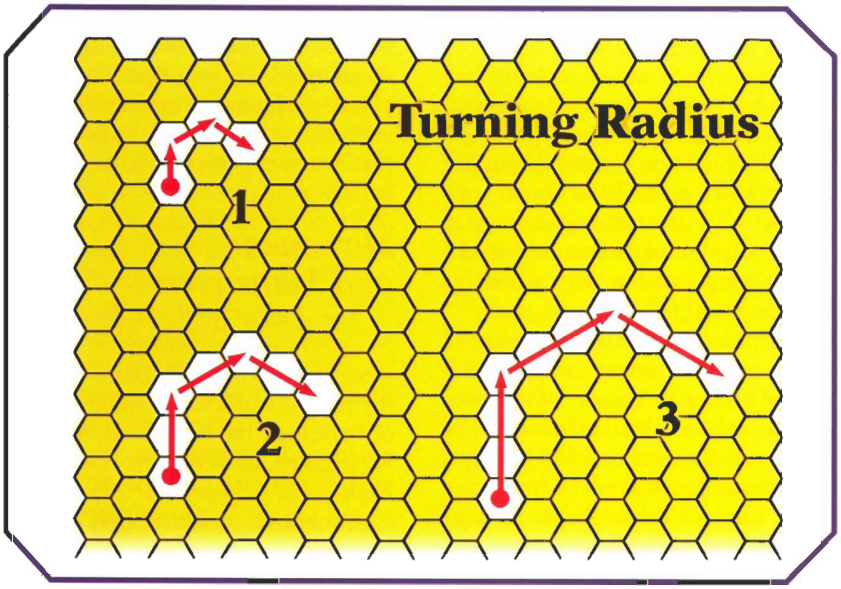
Maneuvers During High-Speed Movement

If you're moving at high speed under your own power, you should take either a Move or a Move and Attack maneuver. This applies to a mount, but not to riders or vehicle crew. If you don't (or if no one is controlling a vehicle), see *Losing Control*, p. 395.

Direction and Turning Radius

At high speeds, it's hard to change direction quickly. You must continue to move in a generally forward direction. A major change of direction (up to 60°) is only possible after you've moved straight ahead for a distance equal to at least (current velocity/Basic Move) yards, rounded down. This number is your *turning radius*. For instance, if your current velocity is 13 and you have Basic Move 5, you must move at least 13/5 = 2.6 yards, which rounds to 2 yards, between each change of facing.

Until you have moved a distance equal to your turning radius, you must continue to move forward. If you are using the *Tactical Combat* rules, you can move into any of your three front



hexes, but *without changing facing.* If you have legs or similar, you can roll against DX or Jumping to cross obstacles; otherwise, you collide with anything you can't maneuver around or which doesn't dodge out of the way.

Note: These rules are *cinematic* but easy to use. A more realistic turning radius would be (velocity squared)/10 yards; those who enjoy complexity are welcome to use this.

If your Basic Move is 0, do not use the rules above. You cannot turn *at all* under your own power! You can only drift. To execute a turn, you must be pushed, towed, etc.

Attacking and Defending

You can fight normally during high-speed movement, subject to the limits of your combat maneuver. You can dodge, but you cannot retreat or dive for cover. The GM should always apply speed modifiers when you're under attack – or attacking!

Accelerating

If your velocity is less than your top speed at the end of your turn, you can increase it by an amount up to your Basic Move, to a maximum of your rated top speed. Top speed is 20% over your Move if you are sprinting and don't have the Enhanced Move advantage.

Decelerating

Instead of accelerating, you can *decelerate,* reducing your velocity by an amount up to your Basic Move (or more, with some risk – see below). If your deceleration reduces your velocity to Basic Move or less at the end of your turn, you are no longer at high speed, and may use the ordinary movement rules next turn.

Pushing the Envelope

You can try to decelerate by up to Basic Move × 2. You can also attempt to change direction before you've moved the requisite distance. Either requires a DX+3 roll – or a vehicle operation skill roll, modified by the vehicle's Handling statistic, if you are driving a vehicle.

Hasty deceleration requires a roll at -1 per two *full* yards/second beyond Basic Move by which you cut your speed. For instance, if your Basic Move is 5 and you decelerate by 9 yards/second, you must roll at -2.

An earlier turn (or a tighter turn; e.g., 120° instead 60°) calls for a roll at -1 per *full* increment of Basic Move by which your velocity exceeds your Basic Move. For instance, if you're moving at 23 yards/second and have Basic Move 3, you must roll at -6.

If you fail, you lose traction and fall or spin out of control – see *Losing Control*, below.

Tactical Movement

If you are using the tactical movement rules with high-speed movement, your movement points equal your velocity at the *start* of your turn. You cannot sidestep or step back. Turning radius limits facing changes: a 60° turn is a one hex-side facing change.

Minor obstructions and bad footing cost movement points as usual (see *Movement Point Costs*, p. 387), and also *decelerate* you at the end of your turn by an amount equal to the extra movement points paid. For example, if your high-speed velocity is 14 and you run through six yards of mud (+1 movement point per hex), you'll automatically decelerate to a velocity of 8 at the end of the turn. Add this to any voluntary deceleration. If the total exceeds your Basic Move, roll as described for *Pushing the Envelope*, above. If it exceeds Basic Move × 2, you lose control automatically.

Losing Control

If you are running on the ground and lose control, you *trip.* You fall over, skid for 1/4 your remaining movement straight ahead (unless you hit something), and then stop. If you land on the ground and skid to a stop without hitting anything, you suffer damage for a fall at your current velocity; see *Falling* (p. 431). If you hit something, you suffer (and inflict) collision damage instead; see *Damage from Collisions* (p. 430).

Optional Rule: Changing Posture in Armor

For enhanced realism, you can let encumbrance level affect the time it takes to perform a Change Posture maneuver. At encumbrance level 0 (None) or 1 (Light), Change Posture takes one second, as usual. At level 2 (Medium), it takes *two* seconds to change posture – and so on. While you are partway through a posture change, you are considered to be in the *old* posture. This rule may slow play, but it can also give a realistic edge to lightly armored combatants.

You also lose control if you are knocked out, or take any combat maneuver but Move or Move and Attack, while moving at high speed. For instance, if you were stunned and forced to Do Nothing, you would trip as described above.

Exception: If you are moving on three or more wheels, you're more stable. The GM may rule that you merely decelerate your maximum safe deceleration each turn instead of tripping, unless your loss of control was the result was a critical failure or injury (stunned, etc.).

High-Speed Flying and Swimming

Only use Basic Move if you are moving on the *ground*. Use basic air Move when flying, and basic water Move when swimming (see *Move in Other Environments*, p. 18). If you lose control in the air or water, you don't trip; instead, you must move your current velocity straight ahead and then decelerate by your maximum safe deceleration. You can do *nothing* else – this effectively ends your turn!

Mounted Combat

Knights, cowboys and Indians, and other adventurers often fight from the saddle. A mount not only provides additional mobility, but its extra height and momentum can make the rider's attacks more effective, while the shock of a mounted charge can panic unprepared opponents. Some mounts even fight in their own right.

With the exception of the occasional camel or elephant, mounted warriors usually ride horses, and these rules assume that. For the differences between horses and various mounts from fantasy and science fiction, see the pertinent animal descriptions.

Ordinarily, a rider can direct a war-trained mount by voice and foot pressure, leaving both hands free for weapon use. However, all Riding rolls are at -3 for "no hands," or -1 if only one hand is on the reins. Riders who need *both* hands to control their mount may drop what they are holding. It requires a Ready maneuver and DX-3 roll to return a weapon to its scabbard while a mount is bucking; a critical failure means you drop it!

Nonsapient mounts without war training (see *War-Trained Mounts*, p. 459) are liable to "spook" at danger – especially at the sounds of gunfire and injured animals of their own species! *All* combat Riding rolls are at -3 for a well-broken mount without war training – and at -6 *or worse* for one that is not fully broken.

The rider must make a Riding+2 roll to get any mount *except* a war-trained mount to charge into or over any obstacle, or onto bad footing, or to perform risky maneuvers like jumps, tight turns, etc., unless they're a matter of life and death *for the mount!* Failure means the mount disobeys; see *Spooked Mounts*, p. 397.

Movement and Maneuvers

See *Riding and Draft Animals* (p. 459) for the Move of various mounts. The animal's Basic Move is the pace it can achieve while walking or trotting; its Enhanced Move is for a gallop, and uses the rules under *High-Speed Movement* (p. 394). Encumbrance penalties apply normally (see *Encumbrance and Move*, p. 17) . . . but few mounts willingly carry more than Medium encumbrance.

Mounting Up

Mounting a horse or similar creature takes two consecutive maneuvers: Move to jump or climb up, followed by Change Posture to seat yourself. You can leap astride in only *one* turn if you make a Riding, Acrobatics, or Jumping roll at -3 (no penalty if you are using stirrups) – but on any failure, you fall!

When you are using *Tactical Combat*, a rider is in the center of a 3-hex mount like a horse, or the front of a 2-hex mount like a gryphon. An elephant or similar mount would have a flat back, and a rider could stand up and move around; traditionally, an elephant carries the driver, or *mahout*, on its neck, and a *howdah*, a platform with several fighters, on its back.

In combat, the *mount* can take any maneuver, unless it's moving at high speed. Then it is limited to Move or Move and Attack.

The *rider* can take any maneuver. Use Change Posture to dismount safely from a mount that hasn't moved, or that has moved only a step. Otherwise, the only way to get off is to jump or fall. To jump off safely, take a Move or Move and Attack maneuver *and* make an Acrobatics or Jumping roll. On any failure, you fall!

Falling Off: If the mount makes a successful DX roll for a difficult action like a jump, tight turn, or hasty deceleration, the rider must make a Riding roll. On a failure, the rider is unseated, even though the mount performed the maneuver. If the mount *fails* its DX roll for a risky action, see result 12 on the *Mount Loss of Control Table* (below) for effects.

Spooked Mounts

If a mount fails a Fright Check, or refuses to perform a particular feat, it will usually shy and buck. The rider must make a Riding roll and take a Ready maneuver every second to regain control.

A critical success calms the mount immediately; three ordinary successes in a row will have the same result. Three failures in a row, or a single critical failure, means a total loss of control (see below). A long alternation of successes and failures means you spend your time fighting your mount instead of the enemy! Fortunately, a bucking mount is still free to dodge, as is the rider – although no other defenses are possible.

Mount Loss of Control Table

Roll 2d on the following table if you *completely* lose control of a mount. Also refer to the appropriate result – without rolling – whenever a rider is thrown, a mount falls, etc.

2 – You are thrown from your mount. Take damage for a three-yard fall (adjust this for an unusually tall or short mount). If you remain conscious, you may attempt an immediate Animal Handling-3 roll to call your mount back. If you fail, you may make a repeated attempt every 5 minutes.

3 – You lose your grip and fall. Take damage for a two-yard fall; a Jumping or Acrobatics roll will negate this. Otherwise, as **2**, above.

4 – You drop whatever you were holding. Now roll again!

5 – The mount charges directly *toward* the foe, hazard, etc.

6-7 – The mount is exhausted and will not fight, or move at faster than a slow walk (Move 2), until it gets several hours of rest.

8-9 – The mount seems to settle down, but is now fractious: -1 to all Riding rolls for the rest of this engagement. If you get this result multiple times, the penalty is cumulative.

10 – The mount charges directly *away from* the foe, hazard, etc.

11 – The saddle comes loose. All Riding rolls and attack rolls made while riding are at -3 until you dismount and spend 4d seconds tightening the straps. If you're riding without a saddle, treat as **3**, above.

12 – The mount falls! It must make a DX+1 roll or it breaks a leg. In any case, the rider must roll vs. Riding-2. On a failure, he is unseated and takes damage for a three-yard fall. On a success, he must make *another* Riding roll, this one at a penalty equal to his Encumbrance, to leap clear of the falling mount. On a success, he leaps clear and takes damage as per **3**, above. On a failure, the mount falls on him, inflicting thrust/crushing damage based on its ST, *plus* the damage for a 2-yard fall.

Attacks by Mounts

A war-trained mount can attack if it takes an appropriate maneuver; see Chapter 16 for details. A horse can bite, kick with hooves, or trample; iron horseshoes give +1 to kicking or trampling damage. The *rider's* attack is at an extra -2 if the *mount* attacked on its last turn.

Panic: If a mounted fighter charges directly toward an NPC who is unused to facing cavalry (GM's option), the GM may require him to make a Will roll to stand his ground and fight. If he fails, he'll try to run instead. Anyone with Combat Reflexes gets +6 to this roll. Those with a SM equal to or greater than that of the mount do not have to roll!

Cavalry Weapons

Melee Weapons: A rider uses melee weapons at the *lower* of his Melee Weapon skill or Riding skill. Thus, a trained rider has no penalties to use melee weapons while mounted. If the mount's velocity is 7 or more relative to the foe, the attack has -1 to hit but +1 damage. Use the same rules when attacking from a motorcycle or similar open vehicle (substitute Driving skill for Riding skill above).

Lances: Lance skill appears on p. 204. To couch a lance, a rider *must* have a saddle and stirrups. A couched lance's damage depends on the mount's mass and velocity. Work out damage for a collision between the mount and the target – (mount's ST) × (distance moved last turn)/100 dice of damage, rounded down – and add the lance's thrust/impaling bonus of +3. *Example:* A ST 25 warhorse charging at Move 8 inflicts 2d+3 impaling damage.

Tournament jousting uses blunted wooden lances, specially designed to break if they strike very hard. These inflict the same amount of damage, but it is *crushing* – and if the damage exceeds 15 points, the lance snaps, limiting damage to 15 points.

Using Ranged Weapons While Mounted

Attack: Firing from atop a moving animal tests both marksmanship and riding. Roll against the *lower* of Riding or ranged weapon skill to hit. If you are firing a noisy weapon (e.g., an unsilenced gun), you must make a Riding roll after each attack. On a failure, the mount is spooked (see *Spooked Mounts*, above); on a critical failure, you lose control (see *Mount Loss of Control Table*, above).

Aim: You may Aim a ranged weapon while mounted, but if the mount moves more than a step, you suffer the same penalties that you would if firing from a moving vehicle: you can't benefit from extra turns of Aim, or from telescopic scopes and other targeting systems.

Tricks: To turn in the saddle and fire at the foe behind you: -4 to weapon skill, and -1 to any Riding roll made that turn. To hang on the far side of the mount and shoot over it or underneath it: -6 to weapon skill, -3 to any Riding roll. This latter move means your foe's only targets are your foot, face, eyes, skull, and one hand. But if he attacks and misses by 4 or less, he hits your mount!

Mounted Defense

A *mount's* only defense is Dodge. Some mounts may have *barding* (see *Horse Armor (Barding) Table*, p. 286) or natural DR.

A *rider* can Dodge, Block, or Parry. If he has Riding at 12+, all of these defenses are at normal levels. For a less-skilled rider, reduce active defenses by the difference between 12 and the rider's skill; e.g., someone with Riding-9 would have -3 to all active defenses.

Height Difference

A cavalryman on horseback is effectively three feet above a standing foe. See *Combat at Different Levels* (p. 402).

Mounted Combat Results

A rider who is stunned must make a Riding roll at -4 or fall off. A rider who suffers *any* knockback is automatically knocked off unless he has a saddle and stirrups, in which case he gets a Riding roll at -4 per yard of knockback to stay on.

If any attack aimed at a rider *misses by 1*, it hits the mount unless it makes its active defense roll; the reverse is true for attacks aimed at the mount. Of course, either may be attacked intentionally!

If the *mount* is hit, the rider must roll vs. Riding, *minus the shock penalty suffered by the mount*, to keep it from spooking (see p. 397). If the mount is crippled and falls, effects are as per result 12 on the *Mount Loss of Control Table*.

Multiple Riders

On a horse-sized or larger mount, a second human-sized or smaller rider can hang on behind the one controlling the mount. The controlling rider has an extra -1 to Riding skill. The passenger uses the *lower* of the controlling rider's skill or his own ST on any roll to avoid falling off, but does so at -3.

Flying Combat

Heroes may fly using advantages (Flight, Telekinesis, etc.), magic spells, antigravity belts, and so forth. A few special rules apply to combat while airborne.

Aerial Movement

If the ceiling is high enough, fliers can move *over* other fighters! Humans normally fly in a horizontal position (so that they can watch the ground and see where they're going); treat them as two-hex figures when using the *Tactical Combat* rules.

Changing Height: Vertical movement costs the same as horizontal movement. Moving a yard vertically and a yard horizontally simultaneously (*diagonal* movement at 45°) costs the same as 1.5 horizontal yards.

Steps and Retreats: Use your basic air Move to calculate the distance you can step or retreat during combat (see *Step*, p. 368); flyers are often fast enough to step 2+ yards. If a flyer retreats as part of an active defense, he can specify that he is doing so *vertically*.

Flying Fast: See *High-Speed Movement* (p. 394). A diving flyer can accelerate faster: add +10 to basic air Move and *double* top airspeed on any turn spent diving and doing nothing else (a Move maneuver).

Cannot Hover: If you are flying under your own power using Flight with the Cannot Hover, Controlled Gliding, or Gliding limitation, you *must* take a Move or Move and Attack maneuver and move at least 1/4 your top airspeed each turn, or you'll stall and start to fall. You might also stall if you lose control during high-speed movement (p. 394) and suffer sudden deceleration that pushes you below 1/4 your top airspeed. You may recover from a stall by turning your fall into a dive and regaining speed. Roll vs. DX-4 each turn to do so.

Flight Ceiling

On Earth, an unprotected human has trouble breathing past 6,000', and needs an oxygen mask or an advantage such as Doesn't Breathe past 20,000'; see *Atmospheric Pressure* (p. 429). On worlds with greater air pressure, higher flight is possible. On worlds with little atmosphere, the reverse is true. If you use wings to fly, you can't fly in a trace atmosphere or a vacuum.

Aerial Attack and Defense

There is no penalty to attack or defense rolls in flight. Flyers are normally no less stable than fighters on the ground.

Attack: When flyers attack foes on the ground, use the *Combat at Different Levels* rules (p. 402). Weapon reach becomes very important! Don't worry about the relative height of two battling flyers – as long as they're close enough to engage at all.

Defense: When a flyer retreats, he can retreat out of the plane of an attack – not merely away from his attacker. If a flyer can hover, and has enough space to move one step up or down, he gets +1 over and above the usual retreating bonus when he retreats. To perform an Acrobatic Dodge (p. 375), use Aerobatics skill.

Hit Location

When you strike at an enemy, you can usually choose *what part of his body* to attack. Some body parts, or "hit locations," are harder than others to hit in a fight; some are more (or *less*) vulnerable to specific damage types. There are a few exceptions:

- Completely unaimed attacks – Wild Swings, stabs in the dark, grenade fragments, etc. – cannot *deliberately* target a hit location. Use *Random Hit Location* (p. 400) instead.
- Attacks that cover a large area – such as an avalanche or a cone of dragon fire – make hit location *irrelevant*. See *Large-Area Injury* (p. 400).
- Fatigue damage always *ignores* hit location.

Deciding Where to Attack

Where to hit a foe depends on many things – your skill, your foe's armor, and whether you want to kill him! A humanoid target has the locations listed below (see the hit location tables on pp. 552-554 for non-humanoids). Each location gives the penalty to attack rolls to hit that location (in parentheses), followed by any special damage effects.

Torso (0): The chest and abdomen. No penalty to hit, and no effect on damage. This is the default target for attacks: if you don't specify a hit location, you are attacking the torso.

Vitals (-3): The heart or lungs (from the front) or the kidneys (from behind). Certain attacks can target the vitals for increased damage. Increase the wounding modifier for an *impaling* or any *piercing* attack to ×3. Increase the wounding modifier for a *tight-beam burning* attack (see box) to ×2. Other attacks cannot target the vitals.

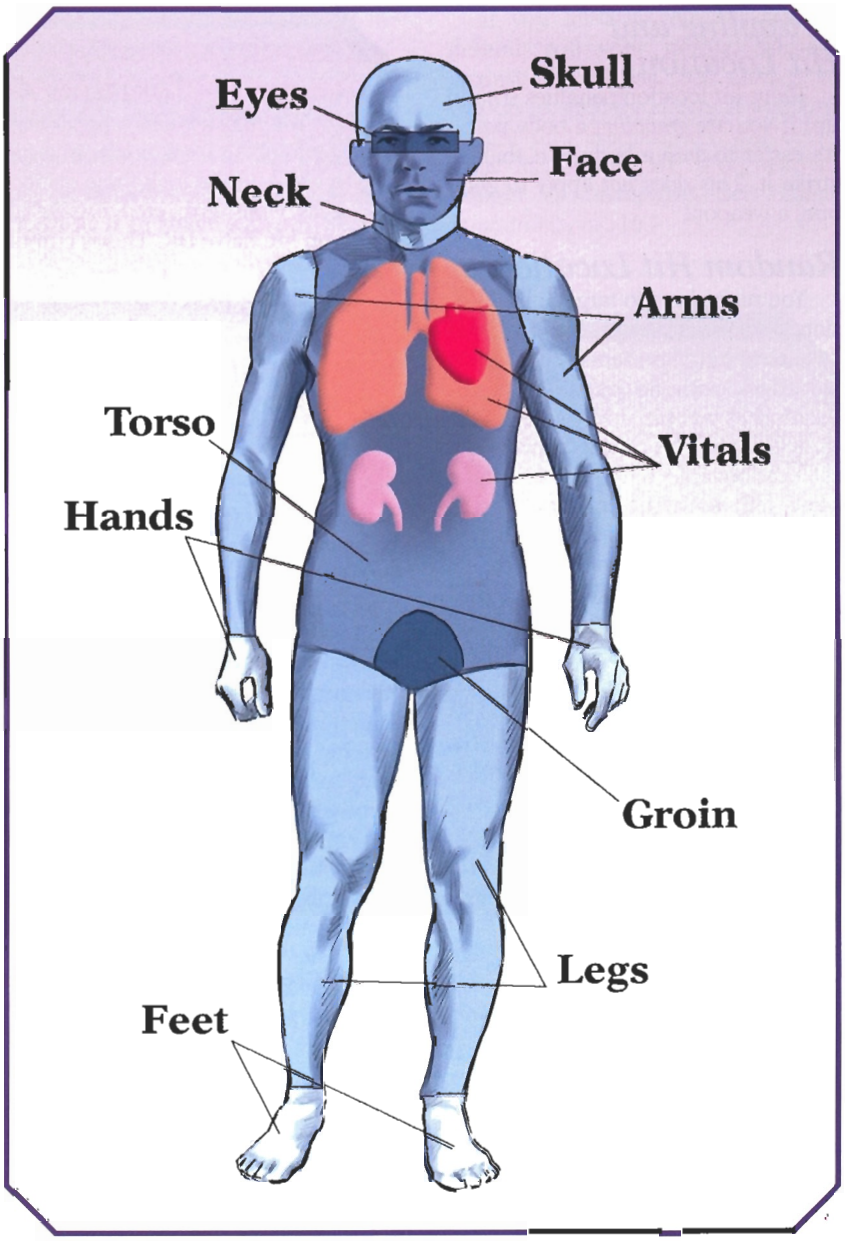
Skull (-7): The part of the head that houses the brain. The skull gets an extra DR 2, the wounding modifier for all attacks increases to ×4, knockdown rolls are at -10, and critical hits use the *Critical Head Blow Table* (p. 556). *Exception:* None of these effects apply to *toxic* damage.

Eye (-9): *Impaling, piercing,* and *tight-beam burning* attacks can specifically target the eye. Injury over HP/10 blinds the eye; otherwise, treat as a skull hit without the extra DR 2! (As with skull hits, *toxic* damage has no special effect.)

Face (-5): The jaw, cheeks, nose, and ears. Many helmets have an open face, allowing this attack to ignore armor DR! Knockdown rolls are at -5, and critical hits use the *Critical Head Blow Table. Corrosion* damage (only) gets a ×1.5 wounding modifier . . . and if it inflicts a major wound, it *also* blinds one eye (*both* eyes on damage greater than full HP).

Neck (-5): The neck and throat. Increase the wounding multiplier of *crushing* and *corrosion* attacks to ×1.5, and that of *cutting* damage to ×2. The GM may rule that anyone killed by a cutting blow to the neck is decapitated!

Groin (-3): The lower torso. Jackets and light armor don't always cover this area. Treat as a torso hit, except that human males (and the males of similar species) suffer *double* the usual shock from *crushing* damage (to a maximum of -8), and get -5 to knockdown rolls.



Arm or Leg (-2): A good way to disable without killing! Against a living target, reduce the wounding multiplier of *large piercing, huge piercing,* and *impaling* damage to ×1. Any major wound (loss of over 1/2 HP from one blow) cripples the limb – but damage beyond the minimum required to inflict a crippling injury is lost. *Note:* The penalty to hit an arm with a shield is -4.

Hands or Feet (-4): As for an arm or leg, but damage over 1/3 HP in one blow inflicts a crippling major wound (excess damage is still lost). This gives you a chance to cripple the foe with little real damage. However, your foe might just switch hands (or hop) and finish *you* off! *Note:* The penalty to hit a hand holding a shield is -8.

Weapon (varies): The place to strike if you need to take the foe unharmed, if you have to disarm a friend, or if you just want to show off. See *Striking at Weapons* (p. 400).

Tight-Beam Burning Attacks

A "tight-beam burning attack" is any *ranged* burning attack that isn't a jet, cone, area-effect, explosion, or follow-up attack. For instance, a laser is a tight-beam burning attack, while a torch or a flamethrower is not. Such attacks can target the eyes and vitals for bonus damage, but divide damage by 10 for the purposes of *Making Things Burn* (p. 433) and *Catching Fire* (p. 434).

Grappling and Hit Location

Halve hit location penalties (round up) if you are *grappling* a body part – it's easier to *grab* a body part than to strike it. This does *not* apply to *grabbing* a weapon!

Random Hit Location

You never *have* to target a hit location – you can always just strike at "whatever target presents itself." To do so, attack with no modifier for hit location. If you hit, and your foe fails to defend, roll 3d on the appropriate hit location table to find out where the blow fell; see Hit Location Tables (p. 552). The GM decides what table to use for non-humanoids.

Use random hit location for a Wild Swing (p. 388), shooting blind (p. 389), suppression fire (p. 409), fragmentation damage (p. 414), and any other situation where the GM feels targeting a location is unrealistic. If a random attack comes from directly above, treat "feet" as "hands" and "legs" as "arms."

Injury Tolerance and Hit Location

The Injury Tolerance advantage (p. 60) can alter the effects of hit location.

Diffuse or Homogenous: Ignore *all* knockdown or wounding modifiers for hit location. (Eyes and limbs can still be crippled.) All injuries use the wounding modifiers from *Injury to Unliving, Homogenous, and Diffuse Targets* (p. 380).

No Brain: Hits to the skull get no extra knockdown or wounding modifier. Hits to the eye can cripple the eye; otherwise, treat them as face hits, not skull hits.

No Eyes, No Head, or No Neck: You lack the hit location(s) in question, and your foes cannot target it.

No Vitals: Hits to the vitals or groin have the same effect as torso hits.

Unliving: Hit location has its usual effect, save that *piercing* and *impaling* damage to any location other than the eye, skull, or vitals uses the wounding modifiers from *Injury to Unliving, Homogenous, and Diffuse Targets.*

Targeting Chinks in Armor

You may use a *piercing, impaling,* or *tight-beam burning* attack to target joints or weak points in a suit of armor, vehicle, etc. Roll at -8 to hit a chink in the foe's torso armor, or at -10 for any other location (face, eyes, vitals, arm, etc.), *instead* of using the usual hit location penalty. If you hit, halve DR. This is cumulative with any armor divisors.

Large-Area Injury

Some attacks affect much or most of the victim's body – for instance, dragon's breath, a bomb blast, a huge fire, or immersion in an acid pit. In particular, any damage described as being "area effect" or "cone," and any external explosion, inflicts large-area injury.

A *melee* attack from an attacker whose Size Modifier exceeds that of his target by seven or more is also a large-area injury – *if* the attacker is striking unarmed or with a weapon scaled to his body size. (If he wishes to target a hit location, his tiny victim must be pinned or otherwise immobile.)

Damage Resistance protects normally against large-area injury – but if your DR varies by location, your "effective DR" is the *average* of your torso DR and the DR of the *least* protected hit location exposed to the attack (which could still be your torso), rounding up. If your DR varies against different attacks, "least protected" refers to the location with the lowest DR against *that particular type of attack.*

A location protected by cover or masked by the body does *not* count as "exposed to the attack." Against an explosion or cone, only locations facing the blast or cone are exposed (e.g., if you're turned away, your face and eyes aren't exposed). For damage caused by immersion in a hazardous environment (e.g., fire or acid), only the immersed locations are exposed. Against a true area effect, *all* locations are exposed.

Don't modify large-area injury for hit location (that is, treat it as a torso hit) unless only one location is exposed. If a *single* limb (hand, arm, etc.) is exposed, damage in excess of that required to inflict a major wound is lost.

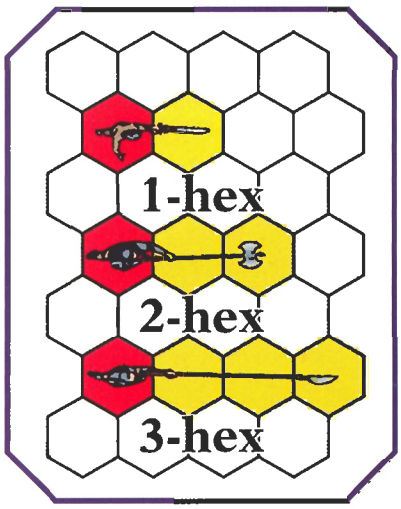
Hit Location for Non-Humanoids and Vehicles

It is impossible to supply hit location rules for *every* type of animal or machine. Instead, we provide some guidelines: see *Non-Humanoid Hit Location Tables* (pp. 552-554) and *Vehicle Hit Location Table* (pp. 554-555).

STRIKING AT WEAPONS

You might strike at a weapon because you want to take its user alive . . . or because the weapon is the only thing you can reach, or is less well-armored than its wielder.

State whether you are striking to *disarm* or to *break* the weapon, and then roll to hit. You are at -5 to hit a reach "C" melee weapon (e.g., a knife) or a pistol; -4 to hit a melee weapon with reach 1 (broadsword, mace, etc.) or a medium-sized firearm (e.g., a carbine or sawed-off shotgun); and -3 to hit a melee weapon with reach 2+ (spear, greatsword, polearm, etc.) or a rifle. Attempts to disarm are generally at an extra -2, but see next page.



Striking at Weapons in Tactical Combat: A reach "C" weapon is in its wielder's hex. A weapon with a one-yard reach is in the user's hex and in the hex directly in front of him. A 2- or 3-yard weapon is in the two or three hexes directly in front of the user. See the diagram on p. 400. However, you can always strike at a reach 2+ weapon on your first turn after it was used to attack or feint against *you*.

Defending Your Weapon

Dodge: You can dodge normally to protect your weapon.

Parry: You can only parry using the weapon that was attacked – and only if it's ready. If you have a broadsword in one hand and a knife in the other, and your foe targeted the knife, you can't parry with the sword. A parry represents turning your weapon so that the foe's blow misses or slides off harmlessly.

Blocking: You *cannot* block an attack on your weapon.

You may combine a dodge or a parry with a retreat to get the usual bonus. The Defense Bonus of a shield provides no benefit whatsoever.

Knocking a Weapon Away

A strike to *disarm* is an attempt to knock or twist the weapon out of your foe's grasp without damaging it. Only a weapon that can parry can attempt to disarm, which limits disarming to unarmed attacks, melee weapons, and certain thrown weapons. You have an extra -2 to hit unless you use a fencing weapon (main-gauche, rapier, saber, or smallsword).

If you hit and your foe fails to defend, roll a Quick Contest of weapon skills with your foe; if you're attempting to knock away a missile weapon, your opponent rolls against DX. Either of you may opt to make a *ST*-based skill roll instead of the standard DX-based one, if that would be better. You get +2 if you *use* Jitte/Sai or Whip skill (having it is not enough!). Your *foe* gets +2 if he is using a two-handed weapon.

If you win, you disarm your foe; his weapon flies one yard in a random direction. If your foe wins or ties, he keeps his weapon, but it will be unready unless he won by 3 or more. If you roll a critical failure, *you* are the one disarmed!

Breaking a Weapon

You can instead target a weapon with the intent to chop through, shatter, or otherwise wreck it. You may make such an attack with any weapon – even a firearm.

If you hit and your foe fails to defend, roll your normal damage against his weapon. See *Damage to Objects* (p. 483) for effects. A weapon's weight and composition will determine its DR and HP. (For weapons bought as *advantages*, see *Gadget Limitations*, p. 116.)

Subduing a Foe

At times, you want to subdue an enemy without killing him. Knockout gas, high-tech stunners, magic, and similar tricks are the best ways to take prisoners – most weapons are entirely *too* final! But if you need to defeat someone without harming him, and you have only ordinary weapons, you still have several options:

Disarm him. **You can do this by striking at his weapon to knock it out of his hand or break it. Of course, he might not surrender, even then . . .**

Pull your punches. **You do not have to strike at full strength. You can choose to use any ST value less than your own when you strike with bare hands or a melee weapon, thrown weapon, bow, or sling (but *not* with a crossbow or a firearm). For example, if your normal ST is 10, you could strike at only ST 9 in order to deliver a lighter wound . . . or tap at ST 1 to *touch* your foe without doing any harm.**

Turn your blade. **You can strike with the flat side of any swing/cutting weapon (sword, axe, etc.); this turns its usual cutting damage into crushing damage. You can also poke with the blunt end of a thrust/impaling weapon (spear, halberd, etc.); this reduces damage by 1** point and makes damage **crushing. Reversing a reach 2+ impaling** weapon to attack with its blunt end requires **a Ready maneuver.**

Pin him. If you can grapple your foe, **you can "pin" him (see** *Unarmed Combat*, p. 370) and then tie him **up. This takes about a** minute with ropes, two seconds with ready handcuffs. **For another** option, see *Arm Lock* (p. 403).

Suffocate him. For details, see *Choke or Strangle* (p. 370), ***Choke Hold*** (p. 404), and *Suffocation (p.* 436).

Strangulation and Smothering

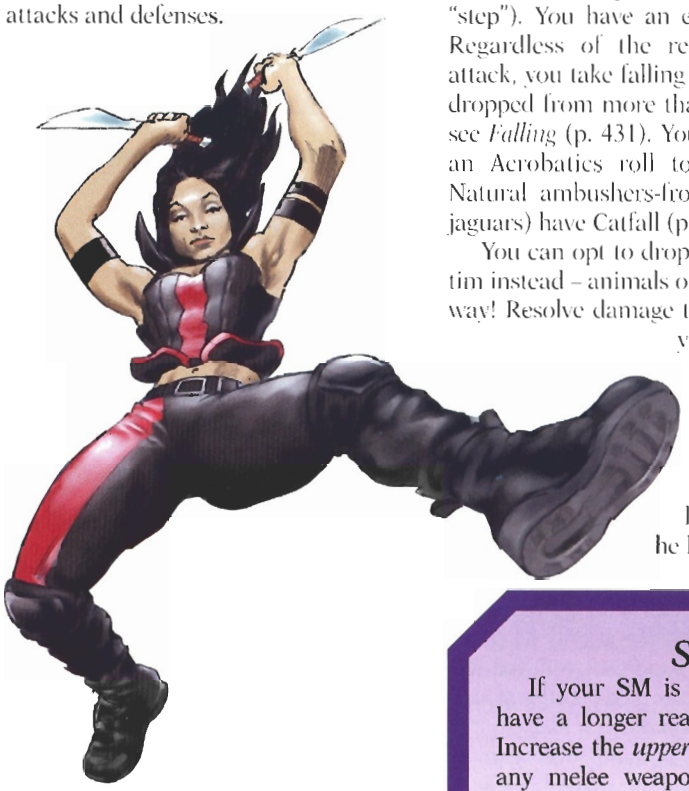
It is possible to render someone unconscious – or even kill him – through suffocation *without* inflicting significant HP damage. See *Suffocation* (p. 436) for details.

If you do not wish to *choke* your victim (see *Actions After a Grapple*, p. 370), you must somehow prevent him from breathing, or restrict the flow of blood (and thus oxygen) to his brain, without crushing his throat. If he is restrained, unconscious, or otherwise unresisting, you have many options: hold his nose and mouth shut by hand, cover his face with a pillow or similar object, or constrict either of his carotid arteries (on his neck).

If you are conscious and being smothered, you can choose not to resist and feign unconsciousness. In most cases, you can only fool your attacker if he has been smothering or strangling you for at least 10 seconds. You must make a Will roll to lie passively in the grip of an assailant who is suffocating you! Winning a Quick Contest of Acting vs. your attacker's IQ may fool a hasty or squeamish foe into believing you're unconscious.

Special Melee Combat Rules

These rules add additional options – and complexity – to melee attacks and defenses.



Attack from Above

Ambush from above is a good surprise tactic. Roll a Quick Contest to see if it works: your Stealth vs. the victim's Vision. A victim walking along a trail, alley, etc. is at -2 to notice someone lurking *above*, unless he specifically states he is looking in the trees, high windows, etc.; then he gets +2 (but -2 to notice things on his own level!). Peripheral Vision is of no special value in this situation.

If you win the Quick Contest, your victim fails to spot you. He gets *no* active defense against your attack! At the GM's option, a particularly unwary individual might "freeze up"; see *Surprise Attacks and Initiative* (p. 393). Even if you lose – or your target is warned – your victim's active defenses are at -2 against your attack. However, an alerted foe can take a Wait maneuver and make a "stop thrust" when you drop (see *Wait*, p. 366).

You can drop from *any* height before attacking (a special kind of "step"). You have an extra -2 to hit. Regardless of the results of your attack, you take falling damage if you dropped from more than two yards – see *Falling* (p. 431). You may attempt an Acrobatics roll to reduce this. Natural ambushers-from-above (e.g., jaguars) have Catfall (p. 41).

You can opt to drop *onto* your victim instead – animals often attack this way! Resolve damage to yourself and your target separately from your attack. Note that a victim is a *soft* thing to land on, unless he has DR 3+.

Size Modifier and Reach

If your SM is greater than 0, you have a longer reach with your arms. Increase the *upper* end of the reach of any melee weapon according to the table at right.

You also get +1 to hit when you grapple per +1 SM advantage you have over your target.

Example: A giant with SM +3 gets +2 to the upper end of reach – a weapon with reach 2-3 has reach 2-5 in his hands! If he grapples a human (SM 0), he gets +3 to hit. He gets no bonus to grapple another giant.

SM	Reach
+1	+0*
+2	+1
+3	+2
+4	+3
+5	+5
+6	+7
+7	+10
+8	+15
+9	+20
+10	+30

* A reach "C" weapon increases to reach 1, but there are no other effects.

Combat at Different Levels

Suppose you want to jump onto a table and strike down at a foe? Or fight your way up a staircase? If you and your foe are at different levels, the vertical distance affects combat. This rule is for *melee* combat. For *ranged* weapons, see *Firing Upward and Downward* (p. 407).

One foot of vertical difference, or less: Ignore it.

Up to two feet of vertical difference: Ignore it unless you are using hit locations. In that case, the higher fighter has -2 to hit the feet or legs, and +1 to hit the head (skull, face, or eyes) or neck. The lower fighter has +2 to hit the feet or legs, and -2 to hit the head. These modifiers are *in addition to* normal hit location penalties.

Up to three feet of vertical difference: As above, but the lower fighter is at -1 to any active defense, while the upper fighter is at +1 to his active defenses.

Up to four feet of vertical difference: As above, but the lower fighter is at -2 to defend, while the upper fighter is at +2. The upper fighter *cannot* strike at the lower fighter's feet or legs.

Up to five feet of vertical difference: The lower fighter *cannot* strike at the upper fighter's head, and the upper fighter *cannot* strike at the lower fighter's feet or legs. The lower fighter is at -3 to defend, while the upper fighter is at +3.

Up to six feet of vertical difference: The upper fighter may *only* strike at the lower fighter's head. The lower fighter may *only* strike at the upper fighter's feet or legs. Neither gets any special bonus or penalty to attack. The lower fighter is at -3 to defend, while the upper fighter is at +3.

Over six feet of vertical difference: Combat is *impossible* unless the fighters adopt some strange position; e.g., the upper fighter lies down and reaches over the edge. In that particular case, he would effectively bring himself three feet closer, and his foe could strike at his head and arm. The GM may offer appropriate bonuses and penalties for any odd tactics that the players employ.

Effects of Reach

If your weapon or Size Modifier gives you more than one yard of reach, each yard past the first brings the *foe* three feet closer to you. This does not bring *you* any closer to your foe! For example, a greatsword (two-yard reach) would let you fight as if your foe were three feet closer. If you were standing six feet below him, you would fight as though he were only *three* feet higher. He would not enjoy a similar benefit unless he, too, had long reach.

Typical Distances

Set distances by common sense and mutual agreement (beforehand, if possible). Some examples: Ordinary stairs rise eight inches per step (for simplicity, you may want to call them one foot). The seat of a chair is less than two feet tall. An ordinary dining table is less than three feet tall. The counter in a shop is about four feet tall. The hood of a car, or the bed of a wagon, is about three feet tall. The roof of a car, or the seat of a wagon, is over four feet tall.

Special Unarmed Combat Techniques

Here are some additional options for unarmed fighters who are not content merely to punch, kick, and grapple. Most require Brawling, Judo, Karate, or Wrestling skill. You can improve your ability with some of these techniques – see *Sample Combat Techniques* (p. 230).

Arm Lock

An arm lock is an attempt to restrain or cripple an opponent by twisting his arm. It uses Judo or Wrestling skill. To perform an arm lock, you must have two hands free and make a successful barehanded parry with Judo or Wrestling against your opponent's melee attack.

On your first turn following the parry, you may attempt to capture your attacker's arm *if he is still within one yard.* This is an attack: step into close combat and roll against Judo or Wrestling to hit. Your foe may use any active defense – he *can* parry your hand with a weapon! If his defense fails, you trap his arm in a lock.

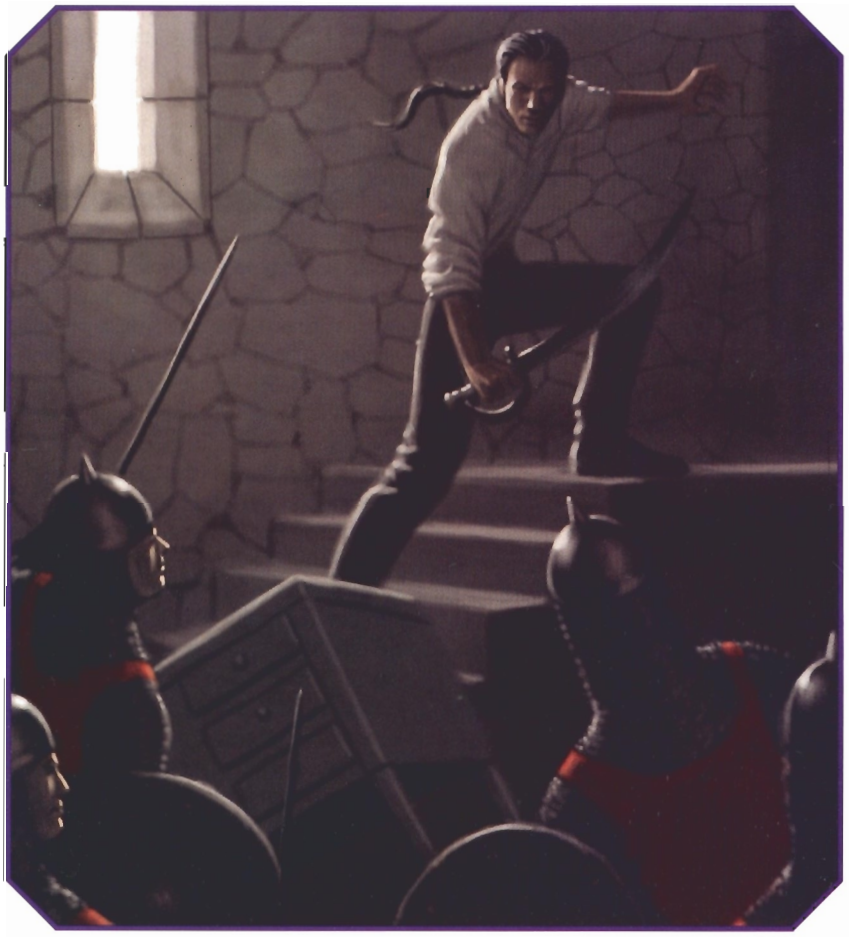
Your foe may attempt to break free (see *Actions After Being Grappled,* p. 371) on his next turn, but you are at +4 in the Quick Contest. If he loses, he has a cumulative -1 on future attempts to break free.

On your *next* turn – and on each turn thereafter, until your foe breaks free – you may try to damage the trapped arm. Roll a Quick Contest: the *highest* of your Judo, Wrestling, or ST vs. the *higher* of your victim's ST or HT. If you win, you inflict crushing damage equal to your margin of victory. The target's natural DR (unless it has the Tough Skin limitation) and the DR of his *rigid* armor protect normally. Flexible armor has no effect!

If you cripple your victim's arm, he drops anything in that hand. You can inflict no further damage on a crippled limb, but you can continue to roll the Contest each turn. If you win, your target suffers shock and stunning just as if you had inflicted damage.

The rolls to inflict damage are completely passive and do not count as attacks! You can simultaneously make close combat attacks on your opponent, who defends at -4 in addition to any other penalties due to the damage caused by the lock itself.

You can also use this ability *offensively.* Instead of waiting to parry an attack, grapple your foe normally with Judo or Wrestling skill. If he fails to break free on his next turn, you may attempt an arm lock on your next turn, just as if you had parried his attack.



Choke Hold

This Judo and Wrestling technique involves locking one forearm around the target's neck and applying pressure to the windpipe. The more the victim struggles, the tighter the choke becomes. This can quickly subdue an opponent.

To apply a choke hold, you must grapple your victim from *behind* using both hands. Treat this as a normal grapple (see *Grappling*, p. 370), but roll against your Judo at -2 or Wrestling at -3 to hit. A victim who is aware of you may attempt any legal defense, but suffers the usual penalties for an attack from behind.

On your foe's next turn and on subsequent turns, he may attempt to break free. You are at +5 in the Quick Contest. But note that you control your victim's neck and head – not his arms and legs. He can attack you with a Wild Swing (p. 388), Back Kick (p. 230), etc., at the usual -4 for being grappled.

On your *next* turn – and on each turn thereafter, until your foe breaks free – your victim loses 1 FP, per *Suffocation* (p. 436). If you wish, you may choke him for crushing damage at the same time (see *Actions After a Grapple*, p. 370), and get +3 to ST for this purpose.

Elbow Strike

You can attack an enemy *behind* you in close combat by jabbing backward with your elbow. Roll against Brawling-2 or Karate-2 to hit. There is no modifier for not facing the enemy, but apply an extra -1 to hit if you target a specific hit location. On a hit, roll your usual punching damage. Treat an elbow strike at a foe in *front* of you as a normal punch.

Knee Strike

This is a vicious, snapping blow with the knee. Unlike a kick, it only has reach C. Roll against Brawling-1 or Karate-1 to hit. If you have grappled your target, he defends at -2 . . . and if you grappled from the front, you may attack his groin at *no penalty!* On a hit, roll your usual kicking damage.

Lethal Strike

This is a blow that focuses all of your strength onto a single narrow point: a toe, a few stiffened fingers, etc. It is an option for any punch or kick with Karate. Roll against Karate to hit, but at -2 over and above any other penalties. You get -1 to damage, but your blow is *piercing* instead of crushing. This lets you target the vitals or eyes! There is a down side: the *Hurting Yourself* rule (p. 379) applies if your target has DR 1+ (as opposed to DR 3+).

Neck Snap or Wrench Limb

This brute-force technique consists of grabbing and suddenly twisting the victim's head to break the neck, or a limb to dislocate or break it.

You must first grapple your opponent by the neck or desired limb using both hands; see *Grappling* (p. 370). Your victim may attempt to break free on his turn. If he fails, then on your *next* turn, roll a Quick Contest: your ST-4 vs. the *higher* of your victim's ST or HT. If you win, you inflict swing/crushing damage on the neck or limb. Damage to the neck has the usual ×1.5 wounding modifier for hit location. The target's natural DR (unless it has the Tough Skin limitation) and the DR of his *rigid* armor protect normally. Flexible armor has no effect!

You may make repeated attempts on successive turns, but your opponent may attack you or attempt to break free, subject to the usual limitations of being grappled.

Trampling

You can trample a victim if your Size Modifier exceeds his by 2 or more – or by only 1, if he's lying prone and you're not.

Trampling is a melee attack: roll vs. the *higher* of DX or Brawling to hit. The victim's only legal defense is a dodge. If you hit, you inflict thrust/crushing damage based on your ST; if you have Hooves, add +1 per die of damage.

If you knock down a foe in a collision or slam and keep on moving, you *automatically* overrun and trample your opponent. Do not make any attack or defense rolls – roll damage immediately, based on *half* your ST, rounded down.

In all cases, if your SM exceeds your victim's by 3 or more, don't worry about hit location – your attack counts as a large-area injury (see *Large-Area Injury*, p. 400).

Improvised Weapons

You sometimes want to hit a foe with something other than a "real" weapon. If so, the GM should treat the object as the weapon it resembles most closely: a stick would be a baton, light club, or quarterstaff; a heavy tool would be equivalent to a mace or a maul; a length of chain would serve as a clumsy morningstar; and so on.

If an improvised weapon is especially clumsy, add a penalty of -1 to -3 to hit or parry with it, or increase the minimum ST required. If it is shorter or lighter than a "real" weapon of the same type (or not very sharp, for a blade), reduce damage.

Special Melee Weapon Rules

Some melee weapons are more complicated than others! Below are some special cases.

Cloaks

You can snap a cloak in your opponent's face or use it to block his vision; treat either as a Feint (see *Feint*, p. 365). You can also use a cloak to grapple. Roll against Cloak skill to hit; reach is C, 1. Otherwise, treat this just like an unarmed grapple (see *Grappling*, p. 370).

Fencing Weapons

The "ready" position of a fighter using Main-Gauche, Rapier, Saber, or Smallsword skill keeps his weapon pointed toward his foe at all times. As

well, the "fencing weapons" used with these skills are light and maneuverable. These factors make it easy for a fencer to recover from a parry or fall back in the face of an attack.

With a fencing weapon, you get +3 to Parry instead of the usual +1 when you retreat (see *Retreat*, p. 377). You also suffer only *half* the usual penalty for multiple parries (see *Parrying*, p. 376). However, your Parry has a penalty equal to your encumbrance level, and you cannot parry flails *at all.*

Flails

A weapon with a length of chain between the handle and the head is a "flail." Because of the chain, a flail can wrap around a foe's weapon or shield when he tries to defend against it. Any attempt to parry a flail is at -4; fencing weapons, with their light blades, cannot parry flails at all! Even a shield is less useful against a flail: all blocks are at -2.

Garrotes

A "garrote" is a cord or wire used for strangling. You can only use it on an unaware or helpless victim, and you must attack from behind (this often requires Stealth rolls!).

Once you are in position, roll against Garrote skill to hit. You *must* target the neck, at the usual -5 to hit. In most cases, your target is unaware, so you can safely make an All-Out Attack (Determined) for +4 to hit.

The victim may attempt to parry with his hand or a ready close-combat weapon, but he does so at -3. Unless he has Combat Reflexes, he is most likely mentally stunned, for an *additional* -4 to his defense roll. On a success, he manages to put his hand or weapon between his throat and the garrote. The hand takes no damage unless you are using a wire garrote.

On the turn of the attack and every subsequent turn, you may choke the victim (see *Actions After a Grapple*, p. 370), and get +3 to ST in the ensuing Quick Contest. Treat the damage as crushing (×1.5 to the neck) for a rope garrote, cutting (×2 to the neck) for a wire one. In addition, your victim starts to suffocate (see *Suffocation*, p. 436). To break free, the victim must win a Quick Contest of ST-5, Judo-3, or Wrestling-3 against your Garrote skill.

An improvised garrote (almost any piece of rope) gives -2 to skill. A wire garrote must be equipped with handles, or *you* will take thrust/cutting damage to each hand!

Picks

Melee weapons that inflict swing/impaling damage – picks, warhammers, etc. – do a *lot* of damage, but may get *stuck* in your foe! At the start of the turn following any attack that penetrates the foe's DR and inflicts damage, you must either relinquish your weapon and leave it stuck in your foe (a free action), or attempt a ST roll to free it (a Ready maneuver).

On a successful ST roll, your weapon comes free. If it is one that must be readied after an attack (any weapon with "‡" next to its ST statistic), you can ready it *next* turn. On a failure, it is *stuck*. You can't use it or ready it – and if you wish to move, you'll have to let go. On later turns, you have two choices: let go of your weapon or try another ST roll. Should you ever get a critical failure on the ST roll, the weapon is *permanently* stuck (but you can retrieve it from a fallen foe after the battle).

Dirty Tricks

Creative players will constantly invent new combat tricks – for instance, throwing sand in the enemy's face to blind him. This presents a problem for the GM. On the one hand, creativity should be encouraged; it makes the game more interesting. On the other hand, tricks only work when they're new and original. If sand in the face worked every time, barbarian warriors would leave their swords at home and carry bags of sand instead!

The best solution is to let "tricks" work once – maybe twice – and then assume that word has gotten around. If you, as the GM, think that the players' clever idea is a good one, you should give it a fair chance to work. But remember that elaborate tricks can fail elaborately . . . and word gets around. The first Trojan horse was a great success. It hasn't worked since then.

IQ and Dirty Tricks

Often, the GM will find it appropriate to require an IQ roll when a fighter attempts a clever trick. Depending on the circumstance, the GM may:

- Make the *trickster* roll vs. his IQ to pull off the trick properly.
- Make the *victim* roll vs. his IQ to see through the trick.
- Require a Quick Contest of IQ to see who outsmarts whom.

There's no hard-and-fast rule! Just remember: nobody who takes an IQ 8 fighter should be allowed to play him as a genius!

Liquids in the Face

This is one of the most common "dirty tricks." Treat liquid tossed in the face as a thrown weapon with Acc 1 and Max 3. Remember the -5 to target the face!

On a critical hit, the liquid gets in the victim's eyes, blinding him for 1d seconds (the GM rolls secretly). On any other hit, the target may defend normally – but note that it is impossible to parry a liquid. If he fails to defend, he must make a Will roll to avoid flinching. On a failure, he flinches: -2 to further defenses that turn, and -2 to any DX or Sense roll on his next turn. On a success, the attack has no effect . . . unless the victim has Bad Temper!

This assumes a relatively harmless substance, like beer. Acid, poison, etc. have their usual effects.

When the weapon comes free, it does *half* as much damage as it did going in. For example, if the original wound was 4 points, it does another 2 points. Failed ST rolls cause no extra damage.

If your foe tries to move away while your weapon is stuck in him, roll a Quick Contest of ST. If *he* wins, he pulls the weapon from your grasp! If *you* win, your foe can't move. On a tie, the weapon comes free and does damage as above.

Shields

A shield is an excellent defense against low-tech weapons, but you can also use it offensively:

Shield Bash: A shield "bash" is an ordinary melee weapon attack. A shield can only hit foes in your front or shield-side hexes. See the *Melee Weapon Table* (p. 271) for statistics.

Shield Rush: A shield "rush" is an attempt to knock your foe down by running into him shield-first. See *Slam* (p. 368) for details. You cannot do this with a buckler.

Whips

Whips are effective disarming weapons. When you strike to disarm with a whip, you get +2 in the ensuing Quick Contest; see *Knocking a Weapon Away* (p. 401).

You may try to entangle your *opponent* instead of his weapon. This attack is at an extra -4 to hit, and inflicts no damage, but follows the *Lariat* rules (p. 411) if successful.

Whips are poor defensive weapons, and get -2 to Parry. Whips are also *unbalanced*, and cannot attack and parry on the same turn – and long whips actually become *unready* after an attack or a parry. It takes one turn to ready a two-yard whip, two turns to ready a whip three yards or longer.

Additional rules apply, depending on the type of whip:

Whip: You can "crack" an ordinary bullwhip – this is the sound of the tip breaking the sound barrier! This requires an attack at -4 to skill, but inflicts +2 damage. *Any* whip blow is painful: anyone who suffers a whip wound to his arm or hand must roll against Will, modified by the shock penalty for the injury. On a failure, he drops anything in that hand.

Kusari: This is a weighted chain. You can adjust reach from 1 to 4 yards with a Ready maneuver. Treat it as a whip when disarming, entangling opponents, or readying. Treat it as a flail vs. enemy defenses: -2 to block and -4 to parry. If someone parries your kusari with a weapon, make a skill roll immediately. On a success, your kusari entangles his weapon. A failure has no special effect; a critical failure means you drop the kusari! Your opponent may disentangle his weapon on his turn. This requires a free hand and a DX roll. If he does not, you may make a disarm attempt on your next turn *without* rolling to hit first: state that you are attempting to disarm and immediately roll the Quick Contest. This still counts as an attack. You cannot use a kusari if there is no headroom, or in an area full of obstacles (nearby people count as obstacles). On a critical miss, a roll of 3, 4, 17, or 18 indicates that you have hit yourself in the face!

Monowire Whip: An ultra-tech whip made of superfine wire. A control allows you to vary length from 1 to 7 yards, changing both reach and ready time. Adjusting the length requires a Ready maneuver. When used to snare an opponent or a weapon, the whip cuts into its target, inflicting thrust+1d(10) cutting damage every turn it is pulled taut until the victim escapes. A "drop weapon" critical miss indicates that you have hit yourself or a friend.

Special Ranged Combat Rules

The following rules add extra detail in ranged combat situations.

Malfunctions

This *optional* rule applies only to firearms, grenades, and incendiaries. A "malfunction" is a mechanical failure of the weapon; e.g., a misfire or a jam. Unlike a critical failure, a malfunction does not normally endanger the user.

For the purpose of this rule, firearms, grenades, and incendiaries have a "malfunction number," or "Malf.," a function of TL.

TL	*Malf.*
3	12
4	14
5	16
6 or higher	17

A fine or very fine firearm gets +1 to Malf.; a cheap weapon gets -1. Specific types of weapons might have a higher or lower Malf., as indicated in their descriptions. The GM is free to lower a weapon's Malf. for mistreatment, lack of maintenance, or damage.

Regardless of the attacker's skill, a weapon will malfunction instead of firing on any unmodified attack roll equal to or greater than its Malf. The exact effects depend on the weapon.

Firearm Malfunction Table

When a weapon malfunctions, roll 3d on the following table:

3-4 – Mechanical or electrical problem.
5-8 – Misfire.
9-11 – Stoppage.
12-14 – Misfire.
15-18 – Mechanical or electrical problem, and possible explosion.

Mechanical or Electrical Problem

The weapon fails to fire. A successful Armoury or IQ-based weapon skill roll (takes a Ready maneuver) can diagnose the problem. Once the problem is known, make an Armoury skill roll to correct it. Each repair attempt takes one hour, and any critical failure destroys the weapon.

Grenades: This represents a fusing problem: the weapon detonates 1d seconds *late*.

Misfire

The weapon fails to fire. A successful Armory+2 or IQ-based weapon skill roll (takes a Ready maneuver) can identify the problem. If the weapon is a revolver, the *next* shot will fire normally. Otherwise, each attempt to fix the problem requires three Ready maneuvers, two hands free, and a successful Armoury+2 or IQ-based weapon skill roll. Critical failure causes a mechanical or electrical problem.

Grenades: The grenade is a dud, and will *never* explode.

Stoppage

The weapon fires one shot, then jams or otherwise stops working. (Treat the fired shot as a normal attack.) Each attempt to clear the stoppage requires three Ready maneuvers, two hands free, and a successful Armoury roll, or IQ-based weapon skill roll at -4. A success fixes the weapon. Failure means it isn't fixed yet, but you can try again. Critical failure causes a mechanical or electrical problem.

Beam weapons: Treat as a mechanical or electrical problem.

Grenades and other single-use weapons: The weapon is a dud; it will *never* fire or explode.

Explosion

Any TL3 firearm or TL4 grenade, breechloader, or repeating firearm may blow up in the gunner's face, inflicting 1d+2 cr ex [2d]. If the weapon uses an explosive warhead, use the warhead's damage instead. TL5+ weapons do not explode – treat as a mechanical or electrical problem.

Firing Upward and Downward

Firing downward increases the distance you can throw or fire a projectile; firing upward decreases it. This effect is unlikely to matter at short distances, but can be important at long range. Ignore it entirely for beam weapons like lasers!

Firing Downward: For every two yards of elevation you have over your target, subtract one yard from the effective distance, to a minimum of half the *real* ground distance. (*Example:* You are 40 yards away from your target, and 10 yards higher. Subtract 5 yards from effective range. You fire as though you were only 35 yards away.)

Firing Upward: For every yard of elevation your target has over you, add one yard to the effective distance. (*Example:* You are 40 yards away from your target, and 10 yards lower. Add 10 yards to effective range. You fire as though you were 50 yards away.)

Cover

To take cover behind an obstacle, simply move so that it is between you and your attacker. You might also have to kneel or lie prone, depending on the obstacle's height. Cover protects one or more hit locations, making you harder to hit with ranged weapons.

You must normally expose your skull, eyes, face, and neck to see a target. You must expose your weapon arm and hand to fire a one-handed weapon. You must normally expose *both* arms and hands to fire a two-handed weapon, plus *half* of your torso and vitals, unless you are firing through a narrow slit. Your groin, legs, and feet can remain hidden if the cover is sufficient to protect them. You might have to expose more of your body if the cover is partial, or if you are unable to kneel, sit, or lie prone behind low cover.

If your foe is partially behind cover, you have three options:

- Target a location that is not behind cover. Your attack takes the usual hit location penalty. If the location is only *half* exposed, you have an extra -2 to hit.
- Roll randomly for hit location. Your attack takes no hit location penalty, but shots that hit a covered location strike the cover instead. For shots that hit a location that is only *half* exposed, roll 1d: on a roll of 4-6, the shot strikes cover, not the target.
- *Ignore* the cover and try to shoot right through it! This is only likely to be effective if you have a powerful weapon or your target is behind light cover. You have an extra -2 to hit. (*Exception:* If your foe is *completely* concealed by cover, you suffer the usual penalty for shooting blind, typically -10.) The cover adds its "cover DR" against the attack. For structures, this is typically the barrier's DR + (HP/4); see the *Structural Damage Table* (p. 558) and *Cover DR Table* (p. 559) for more information. For the cover DR of living things, see *Overpenetration*, below.

Cover is normally only effective against ranged weapons, but certain obstacles might interfere with melee attacks as well. You can fight across a low obstacle if your attacks have sufficient reach to strike past it. Thus, two fencers could duel across an intervening table, but could not strike each other's legs or feet.

Overpenetration

When you inflict *piercing*, *impaling*, or *tight-beam burning* damage with a ranged attack, there is a chance that damage might pass through your target and harm something on the far side; e.g., an innocent bystander. Similarly, a powerful attack might go right through cover (see *Cover*, above) or a shield (see *Damage to Shields*, p. 484) – or even penetrate a building or vehicle, damaging it and its occupants.

The GM decides who is likely to be hit due to overpenetration. A hit is *automatic* if the second target is immediately behind the first; e.g., someone taking cover or blocking with a shield. Otherwise, see *Hitting the Wrong Target* (p. 389) and *Occupant Hit Table* (p. 555) to determine who is hit.

An attack only overpenetrates if its *basic* damage exceeds the target's "cover DR." To find this value, add together the target or cover's DR – on *both* sides, for a person in armor – and HP (for flesh), 1/2 HP (for a machine, vehicle, or other Unliving target), or 1/4 HP (for a Homogenous object). Use the object's DR alone if it's a thin slab, like a wall or a door. Finally, apply any armor divisor.

If the attack does enough damage to penetrate cover DR, determine if anyone on the other side is hit. If so, they get the cover DR *plus* their own DR against the damage.

Example: Special Agent Ira Gray spots an assassin with a rifle, and throws himself in front of the VIP he's protecting just as the gunman fires. The armor-piercing rifle bullet – a 7d(2) pi- attack – hits him in the chest! The bullet's basic damage is 20 points. Gray's DR 8 ballistic vest stops only 4 points due to the armor divisor of (2). Gray takes 16 points of penetrating damage. Halved for small piercing, this inflicts an 8 HP wound. What about the VIP? Gray's vest gives DR 16, since *both* sides count, and Gray has 12 HP. The total cover DR is 28, halved for the armor divisor of (2) to give DR 14. Since the bullet's basic damage was 20, it overpenetrated. The VIP wasn't wearing armor, so he takes 6 points of damage, halved for small piercing, and suffers a 3 HP injury. He's wounded, but not badly – Special Agent Gray saved his life.

Special Rules for Rapid Fire

The following additional rules are for use in conjunction with *Rapid Fire* (p. 373). They only apply when making a ranged attack at RoF 2+.

Automatic Weapons and Full-Auto Only

Automatic weapons – firearms with RoF 4+ – use the *Rapid Fire* rules. Most can fire both controlled bursts and "full auto" (that is, for as long as the trigger is held down).

Some automatic weapons (e.g., machine guns) can *only* fire full auto; they lack a semi-automatic or limited-burst setting ("selective fire"). A weapon that is "full-auto only" has a "!" after its RoF statistic. The only way to fire a short burst with such a weapon is to hold down the trigger for a fraction of a second. *Minimum* RoF is one-quarter full RoF (round up) or shots remaining, whichever is less.

Rapid Fire vs. Close Stationary Targets

Rapid fire generally results in only a fraction of the shots fired hitting the target. This is realistic . . . except when the target is up close and unable to move. This situation arises when shooting your way through a wall, door, or parked car with a shotgun or assault rifle – or when performing an execution.

If your target is *totally immobile* (for instance, an inanimate object, or someone who is completely restrained or unconscious) *and* has a Size Modifier high enough to completely counteract the range penalty, a successful attack roll means that *half* the shots fired (round up) hit. If the attack succeeds by the weapon's Recoil or more, *all* of the shots hit.

Example: When shooting at a door with SM +2, this rule would apply at any range up to 5 yards (range modifier -2). If the target were a man (SM 0), this would only apply at a range of up to 2 yards (range modifier 0) – and only if he were tied up or unconscious.

Shotguns and Multiple Projectiles

A weapon with a RoF followed by a multiplier (e.g., RoF 3×9) fires shots that release multiple, smaller projectiles. The most common example is a shotgun. The *first* number is the number of shots the weapon can actually fire; this is how much ammunition is used up. When resolving the attack, however, multiply shots fired by the *second* number to get the effective RoF.

Example: Father O'Leary's shotgun has RoF 3×9. He chooses to fire three times at a demon flapping toward him. For the purpose of the *Rapid Fire* rules, he his three shots are an attack at RoF 3 × 9 = 27, because each shell releases multiple buckshot pellets.

At extremely close range, multiple projectiles don't have time to spread. This increases lethality! At ranges less than 10% of 1/2D, don't apply the RoF multiplier to RoF. Instead, multiply both basic damage dice and the target's DR by *half* that value (round down).

Example: Father O'Leary's shotgun has 1/2D 50, so once that demon flies to within 5 yards, it is close enough that the pellets won't disperse much. If O'Leary fires three times, his RoF is 3, not 27. But since the attack is a ×9 multiple-projectile round, a ×4 multiplier applies to both basic damage and the demon's DR. The shotgun's basic damage is 1d+1, so O'Leary rolls 4d+4 for each hit (up to three, depending on how well he rolls). However, the demon's DR 3 becomes DR 12 against the damage.

Spraying Fire

A weapon fired at RoF 5+ can attack multiple targets. All the targets must be in the same general direction (within a 30° angle), and you must engage them in succession – from right to left or from left to right, your choice.

Announce how many shots you will fire at each target *before* you roll to hit. You may split up your RoF however you wish. If the targets are more than one yard apart, traversing between them wastes some shots. For RoF 16 or less, you lose one shot for each yard between targets. For RoF 16+, you lose two shots per yard. These "wasted" shots may hit unintended targets (see *Hitting the Wrong Target*, p. 389).

Make a *separate* attack roll against each target. Your effective RoF for each attack is just the number of shots you fired at that target. Since a weapon is harder to control when you swing it to engage multiple targets, add +1 to effective Recoil for your attack on the second target, +2 to Recoil when you engage the third target, and so on.

Example: Sgt. Kelly, Special Air Service, kicks open the door and sees three armed terrorists. With no hostages in sight, Kelly opens fire! His weapon is a 4.6mm PDW (see p. 278). He sprays fire at all three terrorists, using his weapon's full RoF of 15. The first two terrorists are standing 2 yards apart; the third is 4 yards from either. Kelly fires 5 shots at the first, wastes 1 shot traversing to the second, fires 4 shots at him, wastes 3 shots traversing to the third, and fires his last 2 shots. He resolves this as three *separate* rapid-fire attacks: one at RoF 5 with the PDW's normal Recoil of 2, one at RoF 4 and Recoil 3, and one at RoF 2 and Recoil 4.

Suppression Fire

If you have a weapon with RoF 5+, you can lay down "suppression fire." This involves holding down the trigger and "hosing down" an area with fire. This will affect anyone who enters the area before the start of your *next* turn. There needn't be a target in the area when you start!

To use suppression fire, select a target zone two yards across at some point within your weapon's range, take the All-Out Attack (Suppression Fire) maneuver, and start shooting. This maneuver takes an *entire* second; you can do *nothing* else that turn.

Specify how many shots you are firing, up to your weapon's full RoF. If your weapon has RoF 10+, you can suppress *multiple* two-yard zones, as long as they are adjacent and you fire at least five shots into each zone. Your effective RoF in each zone is the number of shots you fired into that zone, *not* your total shots.

Once you start suppression fire, you *must* attack anyone – friend or foe – who enters the zone or a swath that extends one yard to either side of a line drawn from you to the center of the zone. With the exception of penalties for target visibility, all normal attack modifiers apply – including the rapid-fire bonus for your *effective* RoF and any bonus for aiming prior to suppressing. Your final effective skill cannot exceed 6 + your rapid-fire bonus for most weapons, or 8 + your rapid-fire bonus for vehicle- or tripod-mounted ones.

If you hit, use *Random Hit Location* (p. 400) – you cannot target a particular hit location with suppression fire. This may result in some shots hitting cover (see *Cover*, p. 407). If *all* your shots somehow manage to strike targets, you can score no further hits that turn.

Suppression fire involves holding down the trigger and "hosing down" an area with fire. This will affect anyone who enters the area before the start of your next turn. There needn't be a target in the area when you start!

Special Ranged Weapons

Certain ranged weapons are "special cases," and require additional notes.

Bolas

The bolas is a thrown entangling weapon. The target can dodge or block, but if he tries to parry, the bolas hits his parrying arm, with effects as described below. (*Exception:* A successful parry with a *cutting* weapon cuts the cords, ruining the bolas!)

You may aim a bolas at any body part. If it hits, it does its damage *and* wraps around its target. To escape, the victim requires a free hand, and must make three successful DX rolls. Each attempt counts as a Ready maneuver, during which time the victim may take no other actions. Animals roll to escape at -3 for paws or at -6 for hooves.

If you hit a weapon, or an arm or hand that is holding something, roll a Quick Contest: your Bolas skill vs. the target's ST. If you win, the target drops what he's carrying (this does not affect a shield strapped to the arm). If you hit a leg or foot, you entangle *two* legs; a running target must make a DX roll or fall, taking 1d-2 damage. If you hit the neck, the bolas cuts off the target's breathing (see *Suffocation*, p. 436) until he escapes.

Crossbows

When you buy a crossbow, you must specify its ST. It takes two seconds to cock any crossbow of your ST or less.

A stronger bow does more damage but takes longer to cock. A crossbow with ST 1 or 2 greater than your own takes *six* seconds to cock. A crossbow with ST 3 or 4 greater than yours requires a "goat's foot" device to cock (takes 20 seconds). You cannot cock a stronger crossbow, except using slow mechanical devices. You can still *fire* it!

Remember that in addition to cocking time, it takes one turn to ready a bolt – unless you have Fast-Draw (Arrow) – and one turn to load the bolt into the crossbow.

Flaming Arrows

A flaming arrow is made by wrapping oil- or fat-soaked cloth, grass, etc. around the shaft just behind the arrowhead; it takes 10 seconds to prepare, and must be used within three seconds of preparation. It is clumsy in flight, giving -2 to hit. If it hits, treat it as an arrow that does one point of burning damage as a linked effect (see *Linked Effects*, p. 381). The chance of the flame spreading depends on what the arrow strikes.

Hand Grenades

It takes a Ready maneuver to grab a hand grenade from your belt, web gear, etc. To use it, you must arm it ("pull the pin"); this requires a second Ready maneuver. After that, you can throw it normally.

Most grenades have a fixed delay (typically under 5 seconds), but some detonate on impact. If the grenade has

a delay, you can take one or two seconds to Aim (and hope no one shoots you!) before you throw it. Otherwise, it is just barely possible for the enemy to pick up a grenade that lands next to him and *throw it back!* It takes him one second to kneel down, one to ready the grenade, one to throw . . .

Harpoons

Most harpoons are *barbed*. Use the rules under *Picks* (p. 405), except that the tether lets you attempt the ST roll to free the weapon at a distance. A harpooned victim *can* move, but no farther than the tether's length; to go further, he must win a Quick Contest of ST to pull the tether out of your hands. He might have to beat ST 50 (or even higher!) to escape if the tether is made of thick rope and tied securely to something solid (e.g., a ship).

Lariats

Like a harpoon, treat a lariat as a thrown weapon, despite the fact that you hold onto one end. You may aim a lariat at any body part. Your target may dodge or parry – and if he successfully parries with a *cutting* weapon, he damages the lariat as if he had tried to cut it (see below). But if he tries to parry and *fails*, you automatically ensnare his parrying arm!

If you hit the target's arm or torso, you ensnare it. On subsequent turns, you must take a Ready maneuver to keep the victim snared. Roll a Quick Contest of ST on your turn. If you win, you immobilize your opponent; if you lose, he pulls the lariat from your grasp.

If you lasso the neck, use the same rules, but your victim is at -5 in the Contest. If you win, the lariat cuts off the victim's breathing – see *Suffocation* (p. 436).

If you rope the foot, the target must make a DX roll to remain standing (this is *instead* of the Contest above). He rolls at -4 if he was running. If he falls, he takes 1d-4 damage – or 1d-2 if he was running. On subsequent turns, use the rules above to keep him entangled.

You must keep the lariat taut at all times to immobilize or suffocate your victim. This requires a Ready maneuver each turn. If your horse is trained to do this for you, substitute its ST for yours in the Quick Contest.

To escape from a *taut* lariat, cut the rope (DR 1, 2 HP). To escape from a *limp* lariat (including one pulled from the attacker's grasp), use the rules given under *Bolas* (p. 410).

A lariat takes 1 turn per 5 yards to ready after a miss. A typical lariat is 10 yards long.

Molotov Cocktails and Oil Flasks

A "Molotov cocktail" (TL6) is a bottle filled with gasoline and fitted with a burning "fuse" – often just a rag. Once you have it in hand, it takes a Ready maneuver to light its fuse (if you have a torch or lighter) and an Attack maneuver to throw.

In theory, the bottle bursts upon hitting a hard surface (anything with DR 3+), spilling the gasoline, which immediately catches fire. In reality, Molotov cocktails are notoriously unreliable. They have a Malf. of 12, regardless of tech level (see *Malfunctions*, p. 407): on any attack roll of 12+, the fuse separates from the bottle in flight, the bottle fails to break, or the fuel doesn't ignite.

If your target is a person, he may dodge or block, but not parry. If he dodges, the bottle shatters on the ground at his feet. The same thing happens if he fails to defend but does not have DR 3+ (the bottle bounces off without breaking). If he blocks, it breaks on his shield.

If your target is the ground, or if you targeted a person but hit the ground instead, the Molotov cocktail sets fire to a one-yard radius; see *Area-Effect Attacks* (p. 413). On a battle map, the target hex is filled with flame.

If the Molotov cocktail bursts on the *target*, it inflicts 3d burning damage, and then 1d burning damage per second. Most DR protects at only 1/5 value; sealed armor protects completely. If you hit the target's *shield*, it takes this damage instead, and the wielder may continue to use his shield until it is destroyed (the fire is on the outside). Use the *Damage to Shields* rule (p. 484), or just assume that he must discard his shield after the battle. If you hit the *ground*, the flame does 1d-1 burning damage per second in a one-yard radius. In all cases, the flame burns for 10d seconds.

"Greek fire" (TL3) consists of naphtha – a light petroleum product distilled from crude oil, roughly similar to gasoline – mixed with fat or tar and saltpeter to make it sticky and burn hotter. It should be very expensive! Treat earthenware flasks filled with Greek fire as Molotov cocktails. This is the classic fantasy "oil flask."

Below TL3, flammable, hot-burning liquids are unavailable in realistic game worlds.

Note that these weapons are *fragile*. Roll 1d for each bottle if you fall; it breaks on a roll of 1-4. A foe may strike at a bottle on your belt (-5 to hit); it breaks automatically if hit. Either result soaks you in flammable liquid: *any* burning damage will set you on fire!

Nets

A net is a thrown entangling weapon. The target may dodge or parry it. If he successfully parries with a *cutting* weapon, he damages the net; treat a net of any size as a diffuse object with DR 1 and normal HP for its weight. If the target fails to defend, he is entangled, and cannot move or attack until freed.

To escape, the victim requires at least one free hand, and must make three successful DX-4 rolls. Each attempt counts as a Ready maneuver, during which time the victim may take no other actions. Animals roll at an extra -2, as do humans with only one hand available; rolls to escape from a *small* net are at +3. If the victim fails three consecutive rolls, he becomes so entangled that he must be cut free.

It is also possible to escape a net by damaging it. The victim can only use attacks with reach "C," but they hit automatically. Use the *Breaking a Weapon* rules (p. 401) – but treat a net as diffuse (see *Injury to Unliving, Homogenous, and Diffuse Targets*, p. 380).

You may also use a *small* net as a melee weapon. It has a reach of 1 or 2 yards. Handle the attack as per *Lariats* (above) and the victim's attempt to break free as per *Bolas* (p. 410).

Firearm Accessories

These rules cover the effects of the firearm accessories mentioned in Chapter 8.

Bipods and Tripods

If a weapon has an attached bipod, a *prone* shooter may treat it as if it were braced (see *Aim*, p. 364) and reduce its ST requirement to 2/3 normal (round *up*). To open or close a folding bipod requires a Ready maneuver.

A heavy weapon may be *mounted*, on a tripod or similar device. The gunner cannot move or step on any turn he fires the weapon, but he can defend normally. He may *ignore* the weapon's ST requirement while it is on its mount. Removing a weapon from its mount, or reattaching it, requires three Ready maneuvers – more, for some very heavy weapons.

Laser Sights

These devices use a low-powered laser beam to project an aiming dot onto the target. Some use a visible beam; others use a beam visible only to infrared or ultraviolet vision.

Laser sights have a maximum range at which they are effective; beyond that range, the dot is too dispersed to be visible. If no maximum range is given, assume the sight's range is matched to the 1/2D range of the weapon on which it is mounted.

If you can see your own aiming dot, you get +1 to hit, regardless of whether you took an Aim maneuver. But if the *target* can see it, he gets +1 to Dodge! Activating a laser sight is a free action; specify whether it's on before you Aim or Attack.

Scopes

A telescopic sight, or "scope," gives a bonus to hit *if* you take an Aim maneuver. With a *fixed-power* scope, you must Aim for at least as many seconds as the scope's bonus. With a *variable-power* scope, you may Aim for fewer seconds, but this reduces your bonus by a like amount. Scopes are variable-power unless otherwise noted.

A scope may be integral to a weapon, attached, or part of a vehicle's sighting system. Telescopic Vision (p. 92) also gives a scope bonus. You can only use one scope (including Telescopic Vision) at a time. Some advanced scopes also function as night-vision devices.

Silencers

A silencer muffles the sound of gunshots. Someone several rooms away indoors, or out of your line of sight outdoors, gets a Hearing+5 roll to hear an unsilenced shot. This roll may be at up to +4 for a high-powered weapon or quiet environment, or down to -4 for a low-powered gun or noisy environment (GM's discretion). A typical silencer gives an extra -4, while the best commercial silencers might give -6.

Anyone who is in front of your weapon *and* exposed and close enough for you to attack with it automatically hears the shot – even with a silencer. However, the silencer makes the sound difficult to localize: the listener must make an IQ roll (*not* a Hearing roll) to deduce your location unless you're in plain sight.

Silencers are most common for auto pistols and submachine guns, but exist for many other weapons.

Guided Weapons

A "guided" weapon is a projectile that can receive steering commands in flight. This enables the firer to keep it on course. The weapon relies on the *operator's* skill to reach its target. Early guided missiles had to be steered by the operator using a joystick. Modern systems merely require him to keep the launcher's sights trained on the target; the missile and launcher's electronics do the rest.

Most reference works categorize guided weapons according to how the launcher communicates with the projectile. For instance, a "wire-guided" missile or torpedo receives commands via thin wires that spool out behind the projectile in flight, while a "radio-guided" weapon receives commands via radio. There are many other systems!

Treat an attack with a guided weapon *exactly* like any other ranged attack, except for these special rules:

Semi-Active Homing Weapons

"Semi-active" laser or radar homing is common on TL7+ missiles. The seeker head on this type of projectile detects and homes in on the reflections of a laser or radar beam directed at the target. As for other homing weapons, the firer does not need to do anything once the weapon is launched. However, *someone* (the firer or an ally) must aim a properly modulated laser or radar beam at the target until the missile hits.

Modern soldiers often sneak up close to their targets and use rifle-sized "laser designators" to direct laser-homing "smart bombs" or missiles launched by distant aircraft or artillery. Designating a target requires continued Aim maneuvers and a DX-based roll against Forward Observer skill (p. 196); failure means the weapon misses its target.

Guided and Homing Weapons

Some weapons can be steered, or steer themselves, once launched. This makes it easier to hit distant targets! These weapons appear late in TL6, and are commonly available from TL7 on. Most are rocket-propelled, save for underwater torpedoes – but magical or exotic examples may exist in some game worlds.

Aim: If you Aim a guided weapon before you Attack, you receive its Acc bonus – but you don't *have* to aim. If the projectile takes multiple seconds to reach its target (see *Time to Target*, below), the attack is *automatically* aimed and gets its Acc bonus.

Attack: If the target is within the weapon's 1/2D range, the weapon can hit on the turn you fire it. Use an Attack or All-Out Attack maneuver to fire. If the target is more distant, use a Concentrate maneuver – and since the projectile will be in flight for several

seconds, you will also have to take Concentrate maneuvers on one or more subsequent turns.

Modifiers: Treat a guided weapon as any other firearm when assessing modifiers, but *ignore* range modifiers! Your target might have "electronic countermeasures" (ECM) that give a penalty to hit. Details depend on the ECM and the guidance system, and are outside the scope of the ***Basic Set.***

Homing Weapons

A "homing" weapon is a projectile that steers itself to the target. It has its own homing sense – called a "seeker head," on a missile – that determines how it tracks its target. This equates to a sensory advantage; e.g., an infrared-homing missile uses Infravision, while a radar-homing missile uses Scanning Sense (Radar). Some weapons have multiple homing senses! Use the weapon's homing sense(s) *instead* of your senses when assessing combat modifiers; e.g., radar ignores darkness but can be jammed.

Homing weapons use the usual ranged combat rules, with these modifications:

Preparation Time: Some launchers require several seconds to insert batteries, turn on and warm up electronic systems, etc. These activities require Ready maneuvers, but are *already* factored into the time to ready a new shot, as listed with the Shots statistic.

Aim: Your weapon must "lock on" to the target before you can fire. This takes an Aim maneuver, and usually requires you to be able to see the target. This special Aim maneuver requires a roll against your weapon skill: Artillery (Guided Missile), for homing missiles – not Guns or Gunner.

Attack: Fire a homing weapon using a Ready maneuver, *not* an Attack maneuver – the projectile attacks on its own! If the target is within the weapon's 1/2D range, the weapon attacks on the same turn; otherwise, see *Time to Target*, below. When you make the attack roll, do not roll against your skill to hit. Instead, use the *weapon's* skill of 10, adding its Acc if you made your skill roll for "lock on."

Modifiers: Homing missiles *ignore* range modifiers and all modifiers for *your* injury, movement, posture, etc.! Base visibility modifiers on the *projectile's* homing sense, not on your senses. Anything that jams this sense (e.g., radar jammer vs. radar homing) gives a penalty to hit. All other ranged combat modifiers (for size, speed, etc.) apply normally.

Time to Target

If a guided or homing attack has a 1/2D statistic, do *not* halve damage. Instead, read this as the attack's *speed* in yards/second. The projectile can hit a target at up to its 1/2D range on the turn you launch it. It requires multiple turns to reach a more distant target. Defer the attack roll until the projectile actually reaches its target.

The projectile continues to close at a speed equal to its 1/2D until it has traveled a total distance equal to its Max (that is, for Max/speed seconds, including the turn of firing). If it still has not hit, it will crash, self-destruct, etc. Thus, it's possible to "outrun" a guided or homing attack . . . if you're fast enough!

Some further special rules:

Guided Weapons: Take a Concentrate maneuver each turn to steer the weapon. Should you lose sight of the target while the attack is en route, your attack misses automatically! You *must* make an Attack or All-Out Attack (Determined) on the turn the projectile reaches the target. Resolve the attack as if you had fired the weapon that turn. If you cannot make an Attack or All-Out Attack, the projectile will fly past the target and crash.

Homing Weapons: You are no longer in control of the projectile once you launch it. It will home on its own. The projectile itself will take an Attack maneuver on the turn that it reaches the target.

Area and Spreading Attacks

Some attacks – dragon's breath, gas bombs, etc. – affect a wide area. Damage from all such attacks uses the *Large-Area Injury* rule (p. 400), unless the victim is so big that only a single body part is contained within the area.

Area-Effect Attacks

Gas bombs, Molotov cocktails, and similar attacks – including anything with the Area Effect enhancement (p. 102) – affect everyone within a specified radius. Damage does not usually decline with distance. On a miss, use the *Scatter* rule (see p. 414) to determine where the area is centered. Active defenses don't protect against an area attack, but victims may dive for cover or retreat out of the area; see *Dodge and Drop* (p. 377).

Cone Attacks

Dragon's fire, wide-beam microwave and sonic weapons, and anything with the Cone enhancement (p. 103) are examples of cone attacks. A cone attack requires a roll to hit . . . but it might still catch the target in the area of effect on a miss! On a hit, the cone is on target; otherwise, use the *Scatter* rule (see p. 414) to determine a new target point. Once you know the target point, imagine (or trace on a battle map) a line between the attacker and that point. The cone spreads to either side of this line, out to its maximum range.

A cone is one yard wide at its origin, but increases in width at a "rate of spread" equal to its specified maximum width divided by its maximum range. For instance, a cone with a maximum range of 100 yards and a maximum width of 5 yards would spread by one yard per 20 yards of range; out at 60 yards, it would be three yards wide. If maximum width is unspecified, assume the cone spreads by one yard per yard of range.

A cone affects everyone within its area, but anyone who is *completely* screened from the attacker by an object or person is behind cover, which protects normally. Targets may attempt a dodge defense to leave the area or get to cover; see *Dodge and Drop* (p. 377).

Dissipation

Certain cone and area attacks *dissipate* with distance. This is common for realistic wide-area beam weapons and area-effect burning attacks. Attacks with the Dissipation limitation (p. 112) also use these rules.

Attacking an Area

You can *deliberately* attack an area of ground with an area-effect or explosive attack. For a Molotov cocktail, grenade, etc., this means you lobbed it in a high arc. Roll to hit at +4. There's no defense roll, but anyone in the area can dive for cover; see *Dodge and Drop* (p. 377).

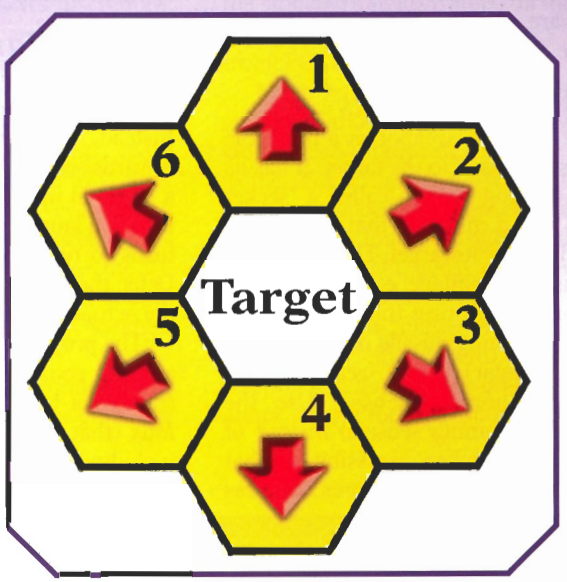
Scatter

When an area-effect, cone, or explosive attack misses its target, it's important to know where it actually ends up!

If you fail your attack roll, you missed your target by a number of yards equal to your margin of failure, to a maximum of half the distance to the target (round up). If the enemy dodges, use his margin of success to determine distance instead.

Exception: If your target was flying or underwater, or you're using the Artillery or Dropping skill to fire upon or bomb a target you can't see, you miss by yards equal to the *square* of your margin of failure. This does not apply to a dodge.

To determine the *direction* of your miss, roll one die. Take the direction *you* are facing as a roll of 1, 60° clockwise (the next facing, on a hex map) as a roll of 2, and so on. Your attack misses in that direction, by the number of yards determined above.



In the case of a damaging attack (e.g., Innate Attack), damage declines with the target's distance from the center of the area or the apex of the cone. For a cone, divide damage by the cone's width in yards at the target's distance from the apex. For an area effect, divide damage by the distance in yards between the target and the center of the effect.

For an attack that allows a HT roll to resist (e.g., Affliction), find the "damage divisor" as above, but do not apply it to damage (if any). Instead, use the divisor as a bonus to the HT roll to resist; e.g., two yards from the center of an area effect, add +2 to HT.

Explosions

Certain attacks, such as hand grenades and Explosive Fireball spells, produce a blast when they hit. Such attacks have the notation "ex" after their damage type: "cr ex" for a crushing explosion, "burn ex" for a burning explosion, and so on.

In addition to doing the listed damage to whoever was struck directly, an explosion inflicts "collateral damage" on everything within (2 × dice of damage) yards. For instance, if an explosion does 6d×2 damage, everyone within 24 yards is vulnerable – although some might be lucky enough to take little or no damage.

The listed damage only applies "as is" to the target struck. For everything else caught in the blast, roll this damage but divide it by (3 × distance in yards from the center of the blast), rounding *down*. Roll damage individually (but the GM can save time by using one roll for several NPCs). Use *torso* armor to determine DR against explosion damage.

If an explosive attack has an armor divisor, it does *not* apply to the collateral damage. For example, the shaped-charge warhead of an anti-tank rocket has an armor divisor of (10), but this only reduces the DR of a target it actually strikes; those nearby get their *full* DR against the blast.

Explosions are considered incendiary attacks, and can start fires; see *Catching Fire* (p. 434).

Anyone caught in a blast may attempt an active defense roll to dive for cover from the explosion's collateral damage and fragmentation; see *Dodge and Drop* (p. 377).

Fragmentation Damage

Many grenades, bombs, and artillery shells have metal casings designed to shatter when they explode, producing a storm of sharp fragments. Some are packed with

extra material (pellets, nails, etc.) to enhance this effect.

Fragmentation damage, if any, appears in brackets after explosive damage; e.g., "[2d]" means 2d fragmentation damage. Everyone within (5 × dice of fragmentation damage) yards is vulnerable. For example, that [2d] attack would throw fragments out to 5 × 2 = 10 yards.

The farther a target is from the blast, the less likely the fragments are to hit him. A hit is *automatic* if the explosive attack actually strikes the target. The fragments attack everyone else in the area at skill 15. Only three modifiers apply: the range modifier for the distance from the center of the blast to the target, the modifier for the target's posture (prone, etc.), and the target's Size Modifier. It is possible for several fragments to hit! For every three points by which the attack roll succeeds, one *additional* fragment strikes the target.

The only active defense against fragments is to dive away from the explosion that produced them; see *Dodge and Drop* (p. 377).

For each hit, roll hit location randomly. If that location is behind cover, the fragment hits cover.

Fragmentation damage is *cutting*. Note that if an explosive attack has an armor divisor, this does *not* apply to the fragments it produces.

Airbursts: Against an airburst, do not apply posture modifiers – lying prone under an airburst does *not* decrease the body area exposed to the rain of fragments! Only *overhead* cover protects.

Incidental Fragmentation: An explosion with no listed fragmentation damage can still create fragments if there is any loose or frangible material at the explosion site. Incidental fragmentation damage ranges from 1d-4 for ordinary earth to 1d for an explosion on loose scrap.

Hot Fragments: White phosphorus-type smoke warheads produce this effect. The fragments typically inflict 1d(0.2) *burning* damage every 10 seconds for one minute.

Demolition

Sometimes the only way to deal with a problem is to *blow it up!* If the adventurers are using or facing explosives, the PCs or GM should decide how many dice of damage – in multiples of 6d – the blasting charge is supposed to do, and what kind of explosive it is.

Explosives normally do crushing damage with the Explosion modifier (p. 104) – and often the Fragmentation modifier (p. 104).

How Much Explosive? An explosion doing 6d×*n* damage takes (*n*×*n*)/4 pounds of TNT. If you are using an explosive other than TNT, divide the weight required by its relative explosive force (REF) – see the *Relative Explosive Force Table*, below.

How Big a Blast? Reverse the formula to determine how much damage a given weight of explosive will do: damage is 6d × square root of (weight of explosive in lbs. × 4 × REF).

Example: A 1920s Chicago safecracker plans to blast through a bank vault. Estimating the toughness of the vault (see p. 557), he decides he needs a blast that does 6d×8 damage. He's using dynamite. The weight of dynamite he needs is (8 × 8)/(4 × 0.8) = 20 lbs.

Explosions in Other Environments

Other Atmospheres: These rules assume Earth-normal air pressure. A thicker or thinner atmosphere enhances or reduces the blast effect. Underwater, divide collateral damage by range in yards instead of 3 × range in yards. In a vacuum or trace atmosphere, with no medium to carry the shockwave, damage comes only from the expanding gases themselves: divide damage by 10 × range in yards.

Contact Explosions: A person can throw himself on a grenade, etc. to protect his friends; see *Sacrificial Dodge and Drop*, p. 377. He takes maximum possible damage; his DR protects him normally. Everyone else gets his torso's DR + HP as "cover DR."

Internal Explosions: If an explosive goes off *inside* someone – e.g., a follow-up attack penetrates the target's DR, or a dragon swallows a hand grenade – DR has *no* effect! In addition, treat the blast as an attack on the vitals, with a ×3 wounding modifier.

Relative Explosive Force Table

TL	Type	REF	Description
3	Serpentine Powder	0.3	Standard gunpowder, pre-1600.
4	Ammonium Nitrate	0.4	Common improvised explosive.
4	Black Powder	0.4	Standard gunpowder, 1600-1850.
5	Black Powder	0.5	Standard gunpowder, 1850-1890.
6	Diesel Fuel/ Nitrate Fertilizer	0.5	Common improvised explosive.
6	Dynamite	0.8	Commercially available for mining, demolition.
6	TNT	1.0	The basic, stable, high explosive.
6	Amatol	1.2	TNT-ammonium nitrate. Fills bombs & shells in WWII.
6	Nitroglycerine	1.5	Unstable! If dropped, detonates on 13+ on 3d.
7	Tetryl	1.3	Common for smaller explosive shells and bullets.
7	Composition B	1.4	Another common explosive filler.
7	C4 Plastic Explosive	1.4	Standard military and covert-ops explosive.
9	Octanitrocubane	4	Theoretical advanced explosive.
10	Stabilized Metallic Hydrogen	6	Exotic science-fiction explosive.

Special Damage

These rules cover attacks that don't simply bash through the target's DR to injure him.

Afflictions

An "affliction" is any attack that causes a baneful effect – blindness, choking, stunning, etc. – *instead* of damage. Examples include tear gas, stun guns, the Affliction advantage (p. 35), and most other "nonlethal" weapons and powers.

The target of an affliction always gets a modified HT roll to resist; e.g., HT-3. His DR normally adds to this roll; for instance, DR 1 gives +1 to HT. However, afflictions often have armor divisors or special "penetration modifiers" (see below) that bypass some or all of the target's DR. For example, DR gives *no* HT bonus against a follow-up affliction if the "carrier" attack penetrates DR.

On a failed HT roll, the victim suffers the effects of the affliction: stunning for high-tech stun guns, choking and partial blindness for tear gas, etc. See *Afflictions* (p. 428) for descriptions of the most common effects. Since afflictions represent a *huge* variety of different attacks – from beam weapons to chemical agents to psionic mind blasts – you should consult the footnotes to the relevant weapon table for full details.

Linked Afflictions: Some attacks that inflict ordinary damage have an affliction "linked" to them. For example, a cattle prod does burning damage *and* requires the victim to make a HT-3 roll to avoid stunning. Anyone hit by such an attack must attempt his resistance roll or suffer the affliction, *regardless* of whether any damage penetrates his DR.

Side Effects: Certain damaging attacks cause an affliction as a "side effect" . . . *if* they inflict injury. The victim gets a HT roll to resist, but typically at -1 per 2 points of injury.

Special Penetration Modifiers

In addition to armor divisors (see *Armor Divisors and Penetration Modifiers*, p. 378) and follow-up attacks (see *Follow-Up Damage*, p. 381), there are several other "penetration modifiers":

Blood Agent: The attack must reach an open wound or mucous membrane (eyes, open mouth, nose, etc.) to be effective. If it does not, it has no effect at all. See *Blood Agent* (p. 110) for detailed rules.

Contact Agent: This is most common for contact poison, nerve gas, and exotic "hand of death" effects. The attack must touch bare skin or porous clothing to have any effect. *Any* DR stops it, unless the DR is limited with Tough Skin. *Exception:* If the attack is an Area Effect (p. 102) or Cone (p. 103), it affects everyone in the area who lacks the Sealed advantage (either innate or granted by a sealed suit).

Respiratory Agent: The attack affects only those who inhale it. DR has *no* effect – but the attack cannot harm those who are holding their breath, breathing supplied air (e.g., in a vacuum suit), or using a gas mask or respirator. It is also totally ineffective against anyone who has either the Doesn't Breathe or Filter Lungs advantage.

Sense-Based: The attack is channeled through one or more of the victim's senses (e.g., vision or hearing), as specified for the attack. It can only affect someone using the targeted sense. See *Sense-Based* (p. 109) for details.

Cinematic Combat Rules

The following rules are shamelessly unrealistic and strictly optional, but can be fun in larger-than-life games!

Bulletproof Nudity

PCs with Attractive or better appearance can get a bonus to active defenses simply by undressing! Any outfit that bares legs, chest, or midriff is +1. Just a loincloth or skimpy swimwear is +2. Topless females get an *extra* +1. Total nudity gives no further bonus to defense, but adds +1 to Move and +2 water Move.

Cannon Fodder

The GM may rule that minor NPCs are mere "cannon fodder," with these effects:

1. They automatically fail all defense rolls . . . yet never All-Out Attack.

2. They collapse (unconscious or dead) if *any* penetrating damage gets through DR. If they are unprotected, or if the hero's attacks are such that damage would always penetrate, there's no need to roll damage at all. In any event, don't bother keeping track of HP!

Cinematic Explosions

In reality, a grenade or anti-tank rocket will almost certainly kill an unarmored man. In cinematic combat, explosions do *no* direct damage! Ignore fragmentation, too. All a blast does is disarray clothing, blacken faces, and (most importantly) cause knockback. Every yard of knockback from a cinematic explosion causes a token 1 HP of crushing damage.

Cinematic Knockback

In reality, guns cause little or no knockback. But in cinematic combat, a big gun can blast foes through windows and even walls! Work out knockback for a piercing attack just as if it were a crushing attack. In addition to rolling to see if he falls down, anyone who suffers knockback from *any* attack must make an IQ roll or be mentally stunned on his next turn. This roll is at -1 per yard of knockback.

Flesh Wounds

Immediately after you suffer damage, you may declare that the attack that damaged you (which can include multiple *hits*, if the foe used rapid fire) was a glancing blow or "just a flesh wound." This lets you ignore all but 1 HP (or FP) of damage . . . at the cost of one unspent character point. If you have no unspent points, the GM might let you go into "debt": he will subtract these points from those you earn for the adventure.

Infinite Ammunition

PCs always have spare ammunition or power cells. If they use up all they are carrying, they immediately find more. Furthermore, weapons never malfunction.

Melee Etiquette

If a PC chooses to fight unarmed or with melee weapons, his opponents always face him one-on-one, one at a time. Unengaged NPCs can dance around the fight uttering shrill cries of encouragement, but wait their turn to attack.

If the foe is a super-strong monster that could kill or maim the hero with a single blow, it rarely strikes to inflict damage directly. Instead it slams the hero, or grabs him and tosses him around!

TV Action Violence

If struck by a potentially *lethal* attack (including a rapid-fire attack that inflicts multiple hits), the hero can choose to convert his failed defense roll into a success. This costs him 1 FP and he loses his next turn.

The hero cannot spend FP to avoid unarmed attacks or melee or thrown weapon attacks that inflict crushing damage (or *no* damage, such as a grapple), unless they would hit the skull or neck. Likewise, he cannot avert attacks on his weapons or nonliving possessions.

With this rule in effect, those involved in a fight with lethal weapons "duck for cover" and are forced "onto the defensive" until they're exhausted.

Dual-Weapon Attacks

This optional rule *might* be cinematic . . . but it is balanced enough to use in a realistic campaign. The GM has the final say.

If you have at least two hands, you can strike with two hands at once using an Attack maneuver *instead* of an All-Out Attack (Double) maneuver. Each hand can attack unarmed, with a one-handed melee weapon, or with a pistol. Of course, if your ST is high enough, you can wield a two-handed weapon in one hand!

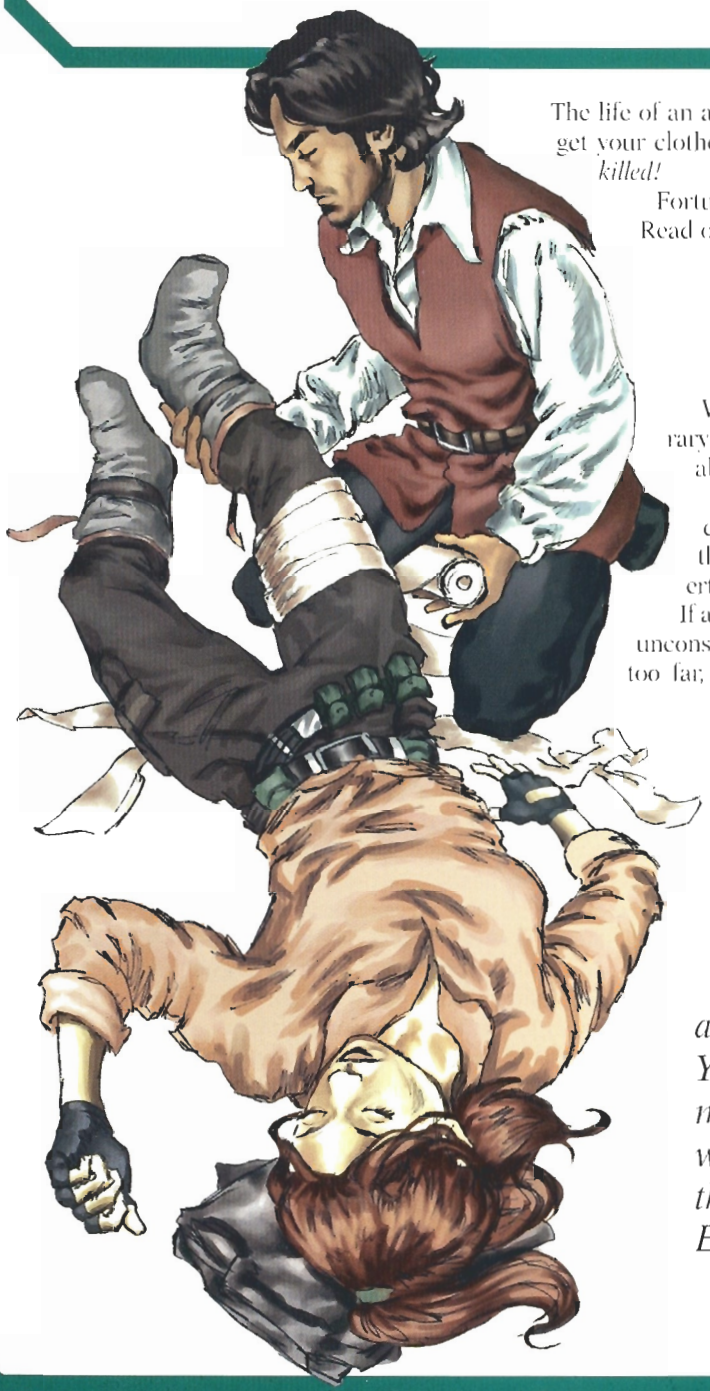
Each attack is at -4 to hit, but you can learn the Dual-Weapon Attack technique (p. 230) to reduce this penalty. You have an extra -4 (total -8) with your "off" hand, unless you have Ambidexterity (p. 39) or learn Off-Hand Weapon Training (p. 232).

Roll to hit separately for each hand. You can attack one target or two – but to strike two foes with *melee* attacks, they must be adjacent. If you aim both attacks at a single opponent, he defends at -1 against them, as his attention is divided!

If you already have multiple attacks – for instance, from an Extra Attack (p. 53) – you may "trade" only *one* of these for a Dual-Weapon Attack. All your remaining attacks must be simple, single-weapon attacks.

Chapter Fourteen

Injuries, Illness, and Fatigue



The life of an adventurer is not all song and glory. You get tired. You get your clothes dirty. You might actually get *hurt* – or even worse, *killed!*

Fortunately, all these problems can be cured. Even death. Read on . . .

Injuries

Wounds and ailments cause "injury": a (usually) temporary loss of Hit Points. Thus, your HP score measures your ability to sustain injury; see *Hit Points* (p. 16).

Injury often results from "penetrating damage": the damage left after Damage Resistance is subtracted from the basic damage of an attack. However, disease, overexertion, and the like can cause injury *without* damage.

If any injury reduces you to 0 or fewer HP, you will soon fall unconscious. You can even go to *negative* HP . . . but if you go too far, you risk death. For the average man, the difference between full HP and negative HP is one or two sword blows or bullets. This is realistic . . . and dramatic. Even in cinematic battles, heroes rarely shrug off dozens of blows. Instead, they avoid being hit. Armor helps . . . but fights can be deadly, so think before you act!

The life of an adventurer is not all song and glory. You get tired. You get your clothes dirty. You might actually get hurt – or even worse, killed! Fortunately, all these problems can be cured. Even death.

Example of Injury

Fiendish Friedrick has HT 12 and HP 14. He has the ill fortune to be trapped in a dead-end corridor by a horde of orcs. He fights valiantly, but the monsters keep coming.

The first wound Friedrick receives is a spear thrust that inflicts 4 HP of injury. This reduces him to 10 HP. He will have a -4 shock penalty on his next turn.

Then the orc leader swings a halberd. The GM is using hit locations, and says the orc strikes at Friedrick's right arm. Friedrick fails to block and suffers 11 HP of injury. This is over Friedrick's HP/2, so it cripples his arm. But injury to a limb can't exceed the minimum required to cripple it. For Friedrick, HP/2 is 7. Damage *over* HP/2 is 8 HP, so he only loses 8 HP. Now he is at 2 HP . . . and has the One Arm disadvantage!

Since a crippling wound is also a major wound, Friedrick must make a HT roll to avoid being stunned and knocked down. If he fails by 5 or more, he could even pass out! Luckily, he succeeds. He'll have a -4 shock penalty (the maximum) next turn, but he can keep on fighting. He picks up his axe left-handed . . .

However, Friedrick now has less than 1/3 his HP left. His movements slow and falter: he is at half Move and Dodge.

Soon, Friedrick takes another blow. This inflicts 2 HP of injury, reducing him to 0 HP. At the beginning of his next turn, he rolls vs. HT – and succeeds! Grimly, he hangs on to consciousness. Despite the -2 for shock, he slays another orc. For two more turns, he makes successful HT rolls. He is wounded again, dropping to -3 HP, but fights on. But on his third turn, he fails his HT roll and instantly falls unconscious.

Friedrick has desecrated the orcs' sacred burial grounds, so they're *mad.* They keep hacking at him after he falls! When he reaches -14 HP, he must roll vs. HT or die. He succeeds . . . and the orcs keep hacking. At -28 HP, and again at -42 HP, he must make another HT roll to survive. Each time, he rolls a 12 or less and clings to life. But the orcs keep hacking. Eventually, Friedrick reaches -70 HP (-5×HP) and dies automatically.

Only strong magic can help Friedrick now! And if the angry orcs keep hacking until he is at -140 HP (-10×HP), there won't even be a body to revive – just Friedrickburger.

General Injury: Lost Hit Points

Repeated wounding eventually causes *anyone* or *anything* to weaken and collapse, even if no single injury is very great. The chart below summarizes the effects of being at low or negative HP. All effects are cumulative.

Less than 1/3 your HP left – You are reeling from your wounds. Halve your Move and Dodge (round *up*).

0 HP or less – You are in immediate danger of collapse. In addition to the above effects, make a HT roll at the start of your next turn, at -1 per *full* multiple of HP below zero. Failure means you fall unconscious (or simply stop working, if you weren't truly alive or conscious in the first place); see *Recovering from Unconsciousness* (p. 423). Success means you can act normally, but must roll again *every turn* to continue functioning. *Exception:* If you choose Do Nothing on your turn, and do not attempt any defense rolls, you can remain conscious without rolling. Roll only on turns during which you attempt a defense roll or choose a maneuver other than Do Nothing.

-1×HP – In addition to the above effects, make an *immediate* HT roll or die. (If you fail by only 1 or 2, you're dying, but not dead – see *Mortal Wounds,* p. 423). If you succeed, you can still talk, fight, etc., as above (until you fail a HT roll and collapse). Roll again each time you suffer injury equal to a further multiple of your HP, whether as a result of one wound or many. For instance, if you have 11 HP, you must roll to avoid death at -11 HP. If you survive, you must roll again at -22 HP, -33 HP, and so on . . .

-5×HP – You die immediately. You have lost a total of *6 times your HP!* Nobody can survive that much injury.

-10×HP – Total bodily destruction, if this makes sense given the source of the damage – 200 points of arrow wounds leave a messy but recognizable corpse; 200 points of fire injury leaves nothing but an unrecognizable lump of charcoal. The difference can be important in settings where resurrection, reanimation, etc. are possible!

Shock

Whenever you suffer injury, reduce your DX and IQ by the number of HP you lost – to a maximum penalty of -4, regardless of your injuries – *on your next turn only.* This effect, called "shock," is temporary; your attributes return to normal on the turn after that.

Shock affects DX- and IQ-based skills, but *not* active defenses or other defensive reactions; see *Temporary Attribute Penalties* (p. 421). Therefore, on the turn after you are badly hurt, it is often a good idea to try flight or All-Out Defense instead of an immediate counterattack!

High HP and Shock: If you have 20 or more Hit Points, your shock penalty is -1 per HP/10 of injury (drop all fractions). Thus, if you have 20-29 HP, it's -1 per 2 HP lost; if you have 30-39 HP, it's -1 per 3 HP lost, and so forth. The maximum penalty is still -4.

Major Wounds

A "major wound" is any *single* injury of greater than 1/2 your HP. If you are using hit locations, a lesser injury that cripples a body part also counts as a major wound – see *Crippling Injury* (below). Any major wound requires a HT roll to avoid knockdown and stunning (see below).

Knockdown and Stunning

Whenever you suffer a *major wound,* and whenever you are struck in the *head* (skull, face, or eye) or *vitals* for enough injury to cause a shock penalty (see *Shock,* p. 419), you must make an immediate HT roll to avoid knockdown and stunning.

Modifiers: -5 for a major wound to the *face* or *vitals* (or to the *groin,* on a humanoid male); -10 for a major wound to the *skull* or *eye;* +3 for High Pain Threshold, or -4 for Low Pain Threshold.

On a success, you suffer no penalty beyond ordinary shock.

On a failure, you're stunned; see *Effects of Stun,* below. You fall prone (if you weren't already), and if you were holding anything, you drop it. This effect is called "knockdown," and isn't the same as "knockback" (see p. 378).

On a failure by 5 or more, or any critical failure, you fall unconscious! See *Recovering from Unconsciousness* (p. 423).

Those with Injury Tolerance (p. 60) suffer reduced effects: No Brain means that skull, face, and eye injuries don't cause knockdown or stunning unless they are major wounds – and even then, the roll is at no special penalty. No Vitals means that vitals and groin injuries don't cause knockdown or stunning unless they are major wounds, in which case the roll has no special penalties. Homogenous and Diffuse include No Brain and No Vitals.

Effects of Stun

A failed knockdown roll can cause "stun," as can certain critical hit results and some afflictions. If you are stunned, you must Do Nothing on your next turn. You may perform any active defense while stunned, but your defense rolls are at -4 and you cannot retreat.

At the end of your turn, you may roll against HT. On a success, you recover from stun and can act normally on subsequent turns. On a failure, you remain stunned; your next maneuver must also be Do Nothing, but you get another roll at the end of that turn . . . and so on, until you recover from stun.

Mental Stun: If you are surprised, you might be *mentally* stunned; see *Surprise Attacks and Initiative* (p. 393). This sort of stunning works as described above, but you must make an IQ roll, not a HT roll, to snap out of it. You're not hurt – you're confused!

Crippling Injury

When using hit locations, sufficient injury to a limb, extremity, or eye may cripple it. This requires a *single* injury that exceeds a certain fraction of the target's HP. For humans and humanoids, these thresholds are:

Optional Rules for Injury

These rules add realism, and give heroes with medical skills or healing abilities exciting tasks to perform – but they also require extra record keeping, so they are *optional.*

Bleeding

If you are injured, you may continue to lose HP to bleeding. At the end of every minute after being wounded, make a HT roll, at -1 per 5 HP lost. On a failure, you bleed for a loss of 1 HP. On a critical failure, you bleed for 3 HP. On a critical success, the bleeding stops completely. On an ordinary success, you do not bleed this minute, but must continue to roll every minute. If you do not bleed for three consecutive minutes, the bleeding stops for good. Otherwise, you or someone else will need to make a First Aid roll to stop the bleeding; see *First Aid* (p. 424).

The GM decides which wounds bleed. Cutting, impaling, and piercing wounds usually bleed; crushing wounds generally don't, but there are always exceptions. Minor burning and corrosion injury does not bleed significantly: the damage sears the flesh, cauterizing the wound and preventing blood loss. However, if such injury causes a major wound, treat it as a bleeding wound, oozing blood plasma until properly treated.

Accumulated Wounds

It normally takes a *single* injury over HP/3 to cripple an extremity – or over HP/2 to cripple a limb. For extra realism, you can keep track of injury by hit location, in which case *total* injury over HP/3 or HP/2, as appropriate, cripples the body part. Be aware that this leads to complicated record keeping! One good way to handle this is to make tally marks by the affected body part on the character's picture.

Excess injury is still lost under this rule. For instance, if you have 11 HP, a total of 6 HP of injury cripples your arm. *Ignore* further injury, except for the purpose of determining dismemberment. Repeated blows to a limb or extremity *cannot* kill you.

Last Wounds

It can happen that a sorely wounded hero is knocked out, or even killed, by a 1 HP blow to the foot. There are those who find this unrealistic. If you wish, use this optional rule: once you have less than 1/3 your HP left, you can totally ignore any wound to a limb or extremity *unless:* (a) it is a critical hit; (b) it is enough to cripple that body part; or (c) it inflicts injury equal to 1/3 your HP or more at once.

Limb (arm, leg, wing, striker, or prehensile tail): Injury *over* HP/2.

Extremity (hand, foot, tail, fin, or extraneous head): Injury *over* HP/3.

Eye: Injury *over* HP/10.

It is sometimes possible to cripple a body part with less damage or no damage at all; e.g., with a specific critical hit result.

A blow to a limb or extremity can never cause more injury than the *minimum* required to cripple that body part. For example, if a man has 10 HP and suffers 9 points of injury to his right arm, he loses only 6 HP – the minimum required to cripple his arm. *Exception:* No such limit applies to the eyes!

Dismemberment: If injury to a body part *before* applying the above limit was at least *twice* what was needed to cripple it, the body part is not just crippled but *destroyed*. A cutting attack or explosion severs a limb or extremity; otherwise, it's irrevocably crushed, burned, etc.

Crippling Extra Limbs

If you have *more than two* of a particular limb (arm, leg, etc.), a crippling blow is injury over HP/(number of limbs of that kind); e.g., if you have four arms, injury over HP/4 cripples an arm.

If you have *more than two* of a given extremity (hand, foot, etc.), a crippling blow is injury over HP/(1.5 × number of extremities of that kind); e.g., if you have four feet, injury over HP/6 cripples a foot.

Patient Status

Hospitals often describe a patient as being in Good, Fair, Serious, or Critical condition. Here's how these familiar terms equate with injury in ***GURPS***.

Good: Vital signs are stable and within normal limits; indicators are excellent; patient is conscious. This means he has 1/2 or more his full HP; e.g., an average human (10 HP) with 5 to 10 HP remaining.

Fair: Vital signs are stable and within normal limits; indicators are favorable; patient is conscious but in moderate to severe discomfort. He has at least 1 HP, but less than 1/2 his full HP; e.g., the same person at 1 to 4 HP.

Serious: Vital signs may be unstable or outside normal limits; indicators are questionable; patient is badly injured or acutely ill, and may be unconscious. He is at 0 HP or worse, but above -1×HP; e.g., our victim at -9 to 0 HP.

Critical: Vital signs are unstable and outside normal limits; indicators are unfavorable; patient is often unconscious, and may not survive. He is at -1×HP or worse; e.g., our patient at -10 HP or below.

Temporary Attribute Penalties

Shock, afflictions, and many other things can *temporarily* lower your attributes. ST reductions affect the damage you inflict with muscle-powered weapons. IQ penalties apply equally to Will and Per. However, there are no other effects on secondary characteristics; for instance, ST, DX, and HT reductions do *not* affect HP, Basic Speed, Basic Move, or FP.

An attribute penalty always reduces skills governed by the lowered attribute by a like amount. For example, -2 to IQ would give -2 to all IQ-based skills (and to all Per- and Will-based skills, since IQ reductions lower Per and Will).

Exception: Defensive reactions that don't require a maneuver to perform – active defenses, resistance rolls, Fright Checks, etc. – *never* suffer penalties for attribute reductions. For instance, -2 to DX would not affect Block, Dodge, or Parry.

Note that *permanent* attribute losses require recalculation of *all* secondary attributes and skills!

Effects of Crippling Injury

Any crippling injury is also a major wound, and requires a HT roll for knockdown and stunning; see *Knockdown and Stunning* (p. 420). Below are some additional effects specific to particular body parts; all these effects apply to *dismemberment* as well. These last until the fight is over, and possibly longer – see *Duration of Crippling Injuries* (p. 422).

Hand: You drop anything you were carrying in that hand. If you were using two or more hands to hold an object, roll vs. DX to avoid dropping it. You cannot hold anything (e.g., a weapon) in that hand. You can wear a shield on that arm and use it to block, but you cannot *attack* with it. Until healed, you have the One Hand disadvantage (p. 147).

Arm: As for a crippled hand . . . but while someone with a crippled hand could at least carry something in the crook of the arm, you cannot use a crippled arm to carry *anything!* You do not drop a shield on that arm (unless the arm is severed), but you cannot use it to block – and since it's just hanging in front of you, reduce its usual Defense Bonus by one. Until healed, you have the One Arm disadvantage (p. 147).

Foot: You fall down! You cannot stand or walk without a crutch or something to lean on. You can still fight if you brace yourself against a wall. If you have nothing to lean on, you may assume a kneeling or sitting posture. Until healed, you have the Lame (Crippled Legs) disadvantage (p. 141).

Leg: You fall down! You can still fight if you assume a sitting or lying posture. Until healed, you have the Lame (Missing Legs) disadvantage (p. 141).

Eye: You are blind in that eye. Until healed, you have the One Eye (p. 147) disadvantage – or Blindness (p. 124), if you lose all your eyes – unless you have some substitute for eyes.

Nonhuman Body Parts

Extra Arms: If you have three or more arms, a crippled arm (hand) simply reduces the number of arms (hands) you can use. You only suffer an actual disadvantage if reduced to fewer than two arms (hands).

Extra Head: If an extraneous head is crippled, you lose the benefits of that Extra Head; see *Extra Head* (p. 54).

Extra Legs: If you have three or more legs, see *Extra Legs* (p. 54) for the effects of a crippled foot or leg.

Striker: You cannot use your Striker to attack. If your Striker is also a wing or a tail, see below for additional effects.

Tail: Any advantages the tail provides (e.g., Extra Arm or Striker) no longer function. As well, your balance is off: -1 DX, except for close manual tasks. If you're a swimmer or winged flyer, the DX penalty is -2 and you are at half your usual water or air Move (which will also halve your top speed with Enhanced Move).

Wing: If you have Flight (Winged), you cannot fly – and if you were airborne, you *fall*. If your wing is also a Striker, you cannot use it to attack.

Duration of Crippling Injuries

If you suffer a crippling injury, make a HT roll to see how serious it is. For battlefield injuries, roll at the end of combat. Success means the crippling is *temporary*, failure means it's *lasting*, and critical failure means it's *permanent*. Dismemberment is automatically permanent – don't bother rolling!

Temporary Crippling: Until you are back at *full* HP, you suffer the disadvantages described under *Effects of Crippling Injury*, above. Once you are fully healed, these effects disappear.

Lasting Crippling: You suffered a broken bone, badly torn (or burned) muscle, or other lingering damage. Roll 1d. This is the number of *months* it will take for the injury to heal fully. (If the injury is treated by a physician, subtract 3 from the roll at medical TL7+, 2 at TL6, or 1 at TL5 – but the period of healing is never less than one month.)

Permanent Crippling: You lose the use of that body part. It is either nonfunctional or *gone*. Either way, you acquire a new disadvantage (One

Hand, Lame, etc., as appropriate). You get no extra character points for this! It simply lowers your point value. In some settings, even this degree of injury is curable; see *Repairing Permanent Crippling Injuries* (p. 424).

Mortal Wounds

If you fail a HT roll to avoid death by 1 or 2, you don't drop dead, but suffer a "mortal wound." This is a wound so severe that your internal injuries might kill you even after you stop bleeding.

If you are mortally wounded, you are instantly incapacitated. You may or may not be conscious (GM's decision). If you suffer further injury and must make another HT roll to avoid death, *any* failure kills you.

While mortally wounded, you must make a HT roll every half-hour to avoid death. On any failure, you die. On a success, you linger for another half-hour – then roll again. On a critical success, you pull through miraculously: you are no longer mortally wounded (but you are still incapacitated).

If you're alive but mortally wounded, surgery may be able to stabilize your condition – see *Stabilizing a Mortal Wound* (p. 424). At TL6+, "trauma maintenance" can keep you alive while waiting for surgery. This involves CPR, oxygen, transfusions, etc. Instead of rolling vs. HT every half-hour, roll against the *higher* of your HT or your caregiver's Physician skill every hour – or every *day*, if you are on a heart-lung machine or similar life support. You do not need to roll at all if you're put into magical or ultra-tech suspended animation!

If you recover from a mortal wound, make a HT roll. On a failure, you lose a point of HT permanently. On a critical failure, the GM may apply the Wounded disadvantage (p. 162) or some other effect (e.g., reduced appearance due to scarring).

This does not apply to a merely *unaware* victim. If you sneak up behind a sentry with a knife, you can't automatically kill him. Game it out realistically. Target the vitals or neck. Since it's a surprise attack, he won't be hitting back: make an All-Out attack! Your attack roll will almost certainly succeed. Your victim gets no active defense at all. You will probably inflict enough injury to incapacitate or kill him. But it isn't *automatic*.

"Now stand aside."
" 'Tis but a scratch."
" A scratch? Your arm's off."
"No it isn't."
"Then what's that?"
". . . I've had worse."
– King Arthur and the Black Knight,
Monty Python and the Holy Grail

Death

If your character is killed, you may still wish to keep track of further injury. In certain futuristic or magical worlds, the dead can be brought back to life by prompt treatment, as long as the body is mostly intact (not reduced to -10×HP).

Instant Death

Decapitation, a cut throat, etc. can kill anyone, regardless of HT and HP. If a *helpless* or *unconscious* person is attacked in an obviously lethal way, he's dead. Don't bother to roll for damage, calculate remaining HP, etc. Just assume that he drops to -5×HP.

Dying Actions

When a PC or important NPC is killed in any but the most sudden and thorough fashion, the GM should allow a "dying action." If this is a final blow at the enemy, it should take no more than a turn. If it's a deathbed speech, the GM should stretch time a little bit for dramatic purposes! This has nothing to do with realism, but it's fun.

Recovery

The *Injuries* rules may seem harsh, but don't despair . . . you can get better!

Recovering from Unconsciousness

Failure by 5 or more on a knockdown roll, a failed HT roll to stay conscious at 0 HP or less, and many other things (e.g., certain critical hits) can leave you unconscious. It is up to the GM to decide whether you are *truly* unconscious or just totally incapacitated by pain and injury – but either way, you can't *do* anything. You recover as follows:

- If you have 1 or more HP remaining, you awaken automatically in 15 minutes.
- At 0 HP or worse, but above -1×HP, make a HT roll to awaken every hour. Once you succeed, you can act normally. You do not have to roll against HT every second to remain conscious unless you receive *new* injury. But since you are below 1/3 your HP, you are at half Move and Dodge.
- At -1×HP or below, you are in bad shape. You get a *single* HT roll to awaken after 12 hours. If you succeed, you regain consciousness and can act as described above. But if you fail, you won't regain consciousness without medical treatment – use the rules given under *Stabilizing a Mortal Wound* (p. 424). Until you receive help, you must roll vs. HT every 12 hours; if you fail, you *die*.

High HP and Healing

The healing rates given for natural recovery, first aid, magical healing spells, the Regeneration advantage, etc. assume someone with human-scale Hit Points; that is, with fewer than 20 HP. Those with more HP heal in proportion to their HP score. Multiply HP healed by 2 at 20-29 HP, by 3 at 30-39 HP, by 4 at 40-49 HP, and so on, with each *full* 10 HP adding 1 to the multiple.

Natural Recovery

Rest lets you recover lost HP, unless the damage is of a type that specifically does not heal naturally (for an example, see *Illness*, p. 442). At the end of each day of rest and decent food, make a HT roll. On a success, you recover 1 HP. The GM may give a penalty if conditions are bad, or a bonus if conditions are very good.

First Aid Table

Tech Level	Time per Victim	HP Restored
0-1	30 minutes	1d-4
2-3	30 minutes	1d-3
4	30 minutes	1d-2
5	20 minutes	1d-2
6-7	20 minutes	1d-1
8	10 minutes	1d
9+	10 minutes	1d+1

First Aid

The two main uses for First Aid skill (p. 195) are *bandaging* and *treating shock*.

Bandaging

It takes one minute to apply pressure or a tourniquet to stop bleeding. This restores 1 HP.

Using the *Bleeding* rule (p. 420), someone who is wounded but receives a successful First Aid roll within one minute of his injury loses *no* HP to bleeding. A later roll will prevent further HP loss.

Treating Shock

After bandaging, the aid-giver may take extra time to apply a more elaborate dressing and treat the victim for shock. He must keep the victim warm, comfortable, calm, and still. After the time indicated on the *First Aid Table*, he may roll against First Aid skill.

On a success, the medic rolls as indicated on the table to see how many HP the victim recovers – minimum 1 HP. A critical success restores the maximum possible HP! This roll *includes* the 1 HP for bandaging; thus, a roll of 1 HP restores no further HP.

On a critical failure, the victim *loses* 2 HP instead of recovering any HP at all!

Surgery

Surgery can physically repair damage to the body, but it's *risky* at low TLs – especially prior to the invention of anesthesia (mid-TL5) and blood typing (TL6). See Surgery skill (p. 223) for general modifiers and for the effects of a failed skill roll. Some additional rules:

Equipment: Basic equipment gives -6 at TL1, -5 at TL2-3, -4 at TL4, -2 at TL5, and +(TL-6) at TL6+. Equipment quality further modifies the roll; see *Equipment Modifiers* (p. 345). The modifiers for TL5+ surgery assume that anesthetic is available. If it isn't, apply a -2 penalty to skill. This is *instead* of the usual -1 for a missing item.

Infection: Before TL5 (and, at the GM's option, even during much of TL5), antiseptic practice is poor. Check for infection (see *Infection*, p. 444) after any surgery.

Stabilizing a Mortal Wound

Each attempt takes one hour. The roll is at -2 if the patient is at -3×HP or worse, or -4 if he's at -4×HP or worse. On a failure, repeated attempts are allowed, at a cumulative -2 per attempt. If the victim dies on the table, resuscitation may be possible; see *Resuscitation* (p. 425).

Repairing Lasting Crippling Injuries

It is possible to fix a lasting crippling injury (see *Duration of Crippling Injuries*, p. 422) through surgery rather than leaving it to heal on its own. This takes 2 hours. On a success, measure the injury's remaining recovery time in *weeks* rather than *months*. But on a critical failure, the injury becomes permanent!

Repairing Permanent Crippling Injuries

Radical surgery can fix certain *permanent* crippling injuries at TL7+; exact details are up to the GM. This often requires prosthetic or transplant parts, which might be costly or hard to find. At TL7-8, the procedure might only restore partial functionality. This kind of operation is also tricky: -3 or worse to skill. On a failure, the patient needs 1d months to recover before another attempt is possible.

Medical Care

Anyone under the care of a competent physician (Physician skill 12+) gets +1 on all rolls for natural recovery.

The *healer* may also make a Physician roll to cure the patient. Only one physician may roll per patient, but a single physician can care for up to 200 patients. The exact number of patients a physician can attend to and the frequency with which he may roll to cure them depend on the TL of his Physician skill; see the *Medical Help Table*, below. On a success, the patient recovers 1 HP; on a critical success, he recovers 2 HP. This is in addition to natural healing. However, a critical failure *costs* the patient 1 HP!

High-tech physicians depend heavily on equipment but still receive good

Medical Help Table

Medical TL	*Frequency of Rolls*	*Patients per Doctor*
0	There are no physicians. Get well by yourself.	
1-3	Weekly	10
4	Every 3 days	10
5	Every 2 days	15
6	Daily	20
7	Daily	25
8	Daily	50
9	2 × daily	50
10	3 × daily	50
11	4 × daily	100
12+	5 × daily	200

It just so happens that your friend here is only MOSTLY dead. There's a big difference between mostly dead and all dead.

– Miracle Max, ***The Princess Bride***

basic training; therefore, a TL6+ physician performs as though he were TL6 if he has to make do without the gadgetry to which he is accustomed, as long as the surroundings are clean.

RESUSCITATION

Reviving a drowning, asphyxiation, or heart attack victim requires *resuscitation*. Make a successful Physician/TL7+ roll – or a First Aid/TL7+ roll at -4. Each attempt takes one minute. Repeated attempts are possible, but there is almost always a time limit.

Cardiopulmonary resuscitation (CPR) and rescue breathing, widely taught after 1960, are more effective than earlier forms of resuscitation. First Aid rolls (but *not* default rolls) to revive victims of drowning or asphyxiation are at -2 instead of -4.

Ultra-Tech Drugs

Miraculous drugs are a staple of science-fiction medicine. Below is a quick-and-dirty system for designing TL9+ drugs.

Effects: Select one or more attribute modifiers, advantages, or disadvantages to represent the drug's effects and (usually *bad*) side effects. Most medical drugs give Rapid Healing, Resistant to Disease, HT bonuses, or similar benefits. Some mitigate disadvantages, canceling them for the drug's duration (e.g., a psychiatric drug might suppress Delusions and Paranoia). A few provide unique effects, such as healing lost HP or FP.

Duration: Select the duration of the effects. Standard durations are *short-term* (lasts [25 - HT] minutes), *medium-term* ([25 - HT]/4 hours), *long-term* (one full day), or *very long-term* (up to a week). Multiple doses generally extend duration rather than increasing effect; e.g., two doses of a long-term drug last two days.

Potency: The subject gets a HT roll to resist disadvantages and other negative effects. The drug's *potency* is a modifier to this roll. Assume that each doubling of dosage gives an extra -1 to the roll.

Form: A drug may be a pill, injection, aerosol, contact agent, or aerosol contact agent. Many drugs are available in multiple forms. Most pills require 30 minutes or more to take effect, but can be dissolved in drinks. Contact agents (e.g., patches) take at least 5 minutes. Aerosols and injections take effect almost immediately.

Cost: This can vary, but here's a rule of thumb. Sum the *absolute* point values of all traits the drug adds or removes. Multiply the sum by a base cost for duration: $2 for short-term, $10 for medium-term, $50 for long-term, or $250 for very long-term. For drugs that heal, use the point cost of HP or FP, as appropriate, and treat permanent healing as "long-term." Potency modifies price: double cost for each -1 to HT rolls. Multiply final cost by 2 for aerosols or contact agents, by 10 for aerosol contact agents.

LC: This will vary by society and with the nature of the drug. Medical drugs are typically LC3. Drugs perceived as socially harmful might be LC2 or even LC1.

Example: A "truth drug" that forces the subject to roll HT-3 or suffer -4 to Will for (25 - HT) minutes would cost 20 (point value) × $2 (short-term) × 8 (potency) × 1 (injection) = $320 per dose. It would probably only be available to spies: LC2.

Fatigue

Running long distances, using extra effort, being suffocated, casting magic spells, and many other things can cause "fatigue": a temporary loss of Fatigue Points. Your Fatigue Points (FP) score starts out equal to your HT, but you can modify this; see *Fatigue Points* (p. 16). Just as injury represents physical trauma and comes off of HP, fatigue represents lost energy and reduces FP. When you lose FP, keep track of it on your character sheet.

Lost Fatigue Points

The chart below summarizes the effects of being at low or negative FP. All effects are cumulative.

Less than 1/3 your FP left – You are very tired. Halve your Move, Dodge, and ST (round *up*). This does *not* affect ST-based quantities, such as HP and damage.

0 FP or less – You are on the verge of collapse. If you suffer further fatigue, each FP you lose also causes 1 HP of injury. Thus, fatigue from starvation, dehydration, etc. will eventually kill you – and you *can* work yourself to death! To do anything besides talk or rest, you must make a Will roll; in combat, roll before each maneuver other than Do Nothing. On a success, you can act normally. You can use FP to cast spells, etc., and if you are drowning, you can continue to struggle, *but* you suffer the usual 1 HP per FP lost. On a failure, you collapse, incapacitated, and can do *nothing* until you recover to positive FP. On a critical failure, make an immediate HT roll. If you fail, you suffer a heart attack; see *Mortal Conditions* (p. 429).

-1×FP – You fall unconscious. While unconscious, you recover lost FP at the same rate as for normal rest. You awaken when you reach positive FP. Your FP can *never* fall below this level. After this stage, any FP cost comes off your HP instead!

Fatigue Costs

The following activities commonly result in FP loss.

Fighting a Battle

Any battle that lasts more than 10 seconds will cost FP – you expend energy quickly when you fight for your life! Those who make *no* attack or defense rolls during the fight are exempt from this fatigue, but other actions (e.g., casting magic spells) still have their usual FP cost. Assess the following costs at the *end* of the battle:

No Encumbrance: 1 FP.
Light Encumbrance: 2 FP.
Medium Encumbrance: 3 FP.
Heavy Encumbrance: 4 FP.
Extra-Heavy Encumbrance: 5 FP.

If the day is hot, add 1 FP to the above – or 2 FP for anyone in plate armor, an overcoat, etc. Full-coverage armor at TL9+ is climate-controlled. This counts as a cooling system, and negates the penalties for hot weather.

These costs are *per battle*, not per 10 seconds of battle. A very long battle may cost more (GM's decision), but it would have to run for 2 or 3 minutes (120 to 180 turns!) before extra FP costs would be realistic.

Hiking

Use the FP costs for fighting a battle, but assess them *per hour* of road travel; e.g., one hour of marching with light encumbrance costs 2 FP (3 FP on a hot day). If the party enters combat while on the march, assume they've been walking for an hour; unless events dictate otherwise, and assess fatigue accordingly.

Overexertion

Carrying more than extra-heavy encumbrance, or pushing/pulling a very heavy load, costs 1 FP *per second* (see *Lifting and Moving Things*, p. 353). For FP costs for other forms of heavy exertion, see *Extra Effort* (p. 356).

Running or Swimming

Every 15 seconds of sprinting, or minute of paced running or swimming, requires a HT roll to avoid losing 1 FP. Encumbrance has no direct effect on this, but you run or swim more slowly. See *Running* (p. 354) and *Swimming* (p. 354).

Special Abilities

Most magic spells (see Chapter 5), many advantages (such as Healing, p. 59), and a few cinematic skills (for instance, Power Blow, p. 215) cost FP to use, as does any trait with the Costs Fatigue limitation (p. 111).

Starvation and Dehydration

When you buy equipment, don't forget food! The traveler's rations under *Camping and Survival Gear* (p. 288) are the *minimum* necessary to keep you healthy on the road; missing even one meal weakens you.

Note to the GM: If keeping up with the party's meals doesn't sound like fun, feel free to ignore this whole section. Travel is much more hazardous if you have to keep track of food and water!

Starvation

A human needs three meals per day. For each meal you miss, take 1 FP. You can only recover "starvation" fatigue with a day of rest: no fighting or travel, and three full meals. Each day of rest makes up for three skipped meals.

Dehydration

In temperate areas, where water is easy to come by, assume that you can renew your supplies as needed. But if water is in short supply, watch out! A human (or elf, dwarf, etc.) needs 2 quarts of water a day – 3 in hot climates, 5 in the heat of the desert! If you get less than you need, you lose 1 FP every eight hours. If you drink less than a quart a day, you lose an *extra* 1 FP and 1 HP per day. You can regain all FP lost to dehydration after a day of rest with ample water supplies. You recover lost HP at the usual rate.

Missed Sleep

The *average* human can function for a 16-hour "day." He must then rest

for an eight-hour "sleep period." Less Sleep (p. 65) shortens this sleep period, thereby increasing useful day length; Extra Sleep (p. 136) and Sleepy (p. 154) do the opposite. Getting less sleep than your sleep period costs FP that you can only recover by sleeping.

Interruptions, noise, and disadvantages such as Chronic Pain (p. 126), Insomniac (p. 140), Light Sleeper (p. 142), and Nightmares (p. 144) can reduce the *quality* of your sleep. In game terms, your sleep counts as fewer hours – or none at all.

Those who have the Doesn't Sleep advantage (p. 50) can *ignore* this entire section!

Staying Up Late

If you've been awake for more than your normal day (typically 16 hours), you start to get tired. You lose 1 FP if you fail to go to sleep, and 1 FP per quarter-day (usually four hours) you stay awake after *that*.

If you've lost half or more of your FP to lack of sleep, you must make a Will roll every two hours you spend inactive (e.g., standing watch). On a failure, you fall asleep, sleeping until you are awakened or get a full night's sleep. On a success, you have -2 to DX, IQ, and self-control rolls. Those with the Slow Riser disadvantage (p. 155) get an extra -1.

If you're down to less than 1/3 your FP due to lack of sleep, roll as above once per 30 minutes of inaction or two hours of action. This can be very dangerous!

Getting Up Early

If you sleep for less than your full sleep period, you'll still be tired when you wake up. Subtract *twice* the hours of missed sleep from your day to determine how long you can stay awake. For example, if your sleep period is eight hours and you sleep only six hours, you've missed two hours of sleep. You will suffer the effects of staying up late after only 12 hours: your usual 16-hour day, minus four hours (twice your hours of missed sleep).

Foraging

In hospitable terrain, you can supplement your supplies by foraging for food. On any day, each character can "forage" as the party travels. A successful Survival or Naturalist roll collects enough edible plants and berries for one meal. (On a 17, you poisoned yourself. Roll vs. HT. On a success, you lose 1 HP; otherwise, lose 1d HP. On an 18, you shared with your friends: the whole party suffers – each PC rolls independently.)

In suitable terrain, a successful skill roll with a missile weapon (at -4) bags a rabbit or similar creature, providing meat for two meals. Near water or at sea, a successful Fishing roll has similar results.

Each forager gets *one* Survival or Naturalist roll and *one* missile or Fishing roll per day.

Alternatively, the party can take some time off from travel and do some *serious* foraging. Each character can make ***five* Survival or** Naturalist rolls and *five* missile or Fishing rolls per day. Foragers can smoke meat and fish over a fire and add it to the regular store of rations.

The GM can impose penalties in areas with little plant or animal life (e.g., -3 in snow, -6 in desert), and cumulative penalties for repeated foraging in an area.

Recovering from Fatigue

You can recover "ordinary" lost FP by resting quietly. Reading, talking, and thinking are all right; walking around, or anything more strenuous, is *not*. Lost FP return at the rate of 1 FP per 10 minutes of rest. The GM may allow you to regain one extra FP if you eat a decent meal *while resting*. Certain drugs, magic potions, etc. can restore missing FP, as can spells such as Lend Energy and Recover Energy (see p. 248).

You can only recover from fatigue caused by *missed sleep* by sleeping for at least one full sleep period. This restores 1 FP. Further uninterrupted sleep restores 1 FP per hour.

You need food or water to recover FP lost to starvation or dehydration; see *Starvation and Dehydration* (above).

Hazards

Besides the ordinary combat risks of swords, guns, and spells, adventurers commonly face other hazards.

Acid

Acids range from extremely weak to extremely strong (e.g., hydrochloric, perchloric, nitric, and sulfuric acids). Most laboratory acids are dangerous only to the eyes, but strong or highly concentrated acids can "burn" through equipment and flesh. For game purposes, treat strong alkalis just like strong acids.

If the victim is *splashed* with strong acid, he suffers 1d-3 points of corrosion damage. If the acid splashes on his face, he must make a HT roll to avoid eye damage. On a failure, or on a direct hit to the eyes, the damage is to his *eyes*. Use the *Crippling Injury* rules (p. 420) to see whether he is blinded – and if so, whether the blindness is permanent. On a critical failure, permanent blindness is certain (acquire the Blindness disadvantage, p. 124).

If the victim is *immersed* in acid, he takes 1d-1 corrosion damage per second. If his *face* is immersed, he must also roll for eye damage (see above) every second.

If the victim *swallows* acid, he takes 3d damage at the rate of 1 HP per 15 minutes. A successful Physician or Poisons roll can halt this damage; treatment requires 2d minutes.

Used against a lock's pins or other small, vulnerable items, acid requires 3d minutes to eat through the item.

A vial of acid powerful enough to produce these effects is a TL3 item, and costs $10.

Afflictions

An "affliction" is a harmful effect other than direct injury or fatigue, usually the result of an attack, hazard, illness, magic spell, or toxin. In most cases, the victim gets a HT roll to resist, and only suffers the affliction on a failure. Duration depends on the cause; see the relevant disease, hazard, poison, spell, or weapon description for details.

Irritating Conditions

Coughing or Sneezing: You are at -3 to DX and -1 to IQ, and cannot use Stealth.

Drowsy: You are on the verge of falling asleep. Make a Will roll every two hours you spend inactive. On a failure, you fall asleep, and sleep until you are awakened or get a full night's sleep. On a success, you have -2 to DX, IQ, and self-control rolls.

Drunk: You are highly intoxicated: -2 to DX and IQ, and -4 to self-control rolls except those to resist Cowardice. Reduce Shyness by *two* levels, if you have it.

Euphoria: You have a -3 penalty to all DX, IQ, skill, and self-control rolls.

Nauseated: You have -2 to all attribute and skill rolls, and -1 to active defenses. As well, roll vs. HT after you eat, are exposed to a foul odor, fail a Fright Check, or are stunned, and every hour in free fall or in any situation where you might suffer motion sickness. A rich meal in the past hour gives -2; anti-nausea remedies give +2. On a failure, you vomit for (25 - HT) seconds – treat as Retching, below.

Pain: You have a penalty to all DX, IQ, skill, and self-control rolls. This is -2 for Moderate Pain, -4 for Severe Pain, and -6 for Terrible Pain. High Pain Threshold halves these penalties; Low Pain Threshold doubles them.

Tipsy: You are slightly intoxicated: -1 to DX and IQ, and -2 to self-control rolls except those to resist Cowardice. Reduce Shyness by one level, if you have it.

Incapacitating Conditions

All of these afflictions prevent you from taking voluntary action for the duration. In addition to their other effects, you're effectively stunned (-4 to active defenses). In combat, you must Do Nothing on your turn. If an affliction lets you *drop*, you can sit, kneel, go prone, etc. if standing, or go prone if kneeling or sitting. If it lets you *stagger*, you can drop, change facing, or step or crawl one yard. In all cases, you are still effectively stunned.

Agony: You are conscious but in such terrible pain that you can do *nothing* but moan or scream. If standing or sitting, you fall down. While the affliction endures, you lose 1 FP per minute or fraction thereof. After you recover, anyone who can credibly threaten you with a resumption of the pain gets +3 to Interrogation and Intimidation skill rolls. Low Pain Threshold *doubles* the FP loss and torture bonus. High Pain Threshold lets you overcome the agony enough to function, but at -3 to DX and IQ.

Choking: You are unable to breathe or speak. You may do nothing but drop. While the choking endures, you suffer the effects of suffocation (see *Suffocation*, p. 436). If you have an object lodged in your throat, a friend can try a First Aid roll to clear it; roll at -2 before TL7. Each attempt takes 2 seconds. If you have Doesn't Breathe or Injury Tolerance (Homogenous), you cannot choke!

Daze: You are conscious – if you are standing, you remain upright – but you can do nothing. If you are struck, slapped, or shaken, you recover on your next turn.

Ecstasy: You're incapacitated with overwhelming pleasure. Treat as Agony, but neither Low Pain Threshold nor High Pain Threshold has any effect – and instead of a bonus for torture, someone offering to *continue* the pleasure gets +3 to any Influence roll! If you have Killjoy, you're immune.

I laugh in the face of danger, and then I hide until it goes away.

– *Xander,* ***Buffy the Vampire Slayer***

Hallucinating: You can *try* to act, but you must roll vs. Will before each success roll. On a success, you merely suffer 2d seconds of disorientation. This gives -2 on success rolls. On a failure, you actually hallucinate for 1d minutes. In this case, the penalty is -5. The GM is free to specify the details of your hallucinations, which need not be visual. On a critical failure, you "freak out" for 3d minutes. You might do *anything!* The GM rolls 3d: the higher the roll, the more dangerous your action.

Paralysis: You cannot move any voluntary muscles, and fall over if you are not in a balanced position. You remain conscious, and can still use advantages or spells that require neither speech nor movement.

Retching: You are conscious but vomiting (or suffering dry heaves). You can *try* to act, but you will be at -5 to DX, IQ, and Per, and automatically fail at any action that requires a Concentrate maneuver. At the end of the retching spell, you lose 1 FP. You gain no benefit from recent meals or oral medication – you've thrown it up.

Seizure: You suffer a fit of some kind. Your limbs tremble uncontrollably, you fall down if standing, and you cannot speak or think clearly. You can do *nothing*. At the end of the seizure, you lose 1d FP.

Unconsciousness: You are knocked out, just as if you had suffered injury.

Mortal Conditions

Coma: You collapse just as if you had been wounded to -1×HP or below and passed out; see *Recovering from Unconsciousness* (p. 423). You get a *single* HT roll to awaken after 12 hours. On a failure, you won't recover without medical treatment. Until you receive treatment, roll vs. HT every 12 hours. On any failure, you *die*.

Heart Attack: Your heart stops functioning ("cardiac arrest"). You immediately drop to -1×FP. Regardless of your current HP, you will die in HT/3 minutes unless resuscitated – see *Resuscitation* (p. 425). If you survive, you will be at 0 HP or your current HP, whichever is *worse*. Missing HP heal normally. If you die and it matters what your HP total was, treat this as death at -1×HP or your current HP, whichever is worse. Injury Tolerance (Diffuse, Homogenous, or No Vitals) grants immunity to this affliction.

Hazardous Atmospheres

Earth's atmosphere is 78% nitrogen and 21% oxygen (plus 1% comprising a number of other gases). Visitors to other planets (and victims of lab accidents or death traps) might encounter other atmospheres, most of which are unsafe for humans without proper protection. Of course, "breathable air" for humans might be deadly for nonhumans, and vice versa!

Corrosive: The atmosphere reacts with exposed flesh. Those with the Sealed advantage are safe; those in sealed suits *might* be safe, but some gases eat away at seals. Small concentrations in otherwise breathable air require a roll at HT to HT-4 every minute to avoid 1 point of corrosion damage. Victims suffer coughing (see *Afflictions*, p. 428) after losing 1/3 their HP, blindness (as the disadvantage) after losing 2/3 their HP. Atmospheres made up mostly of corrosive gases have effects comparable to immersion in acid (see *Acid*, p. 428) *and* count as suffocating. Corrosives include ammonia and nitrides. Chlorine and fluorine are *extremely* corrosive *and* toxic!

Toxic: The atmosphere is poisonous. Individuals without respirators, Doesn't Breathe, Filter Lungs, etc. are susceptible. Ordinary airborne industrial pollutants might require a daily HT roll to avoid 1 point of toxic damage. Lethal gases would call for a HT-2 to HT-6 roll every minute to avoid 1 point of toxic damage. If such gases make up most of the atmosphere, they inflict *at least* 1d toxic damage per 15 seconds (*no* resistance possible) *and* count as suffocating. A typical toxic gas is carbon monoxide. Chlorine and fluorine are deadly in tiny concentrations, and also corrosive.

Suffocating: The atmosphere is unbreathable. For humans, this means it lacks oxygen. Those without Doesn't Breathe or an air supply start to suffocate (see *Suffocation*, p. 436). Hydrogen, methane, and nitrogen are all suffocating. As noted above, an atmosphere made up mostly of corrosive or toxic gases is suffocating as well – but these usually kill so rapidly that suffocation becomes irrelevant.

Atmospheric Pressure

Regardless of its *composition*, an atmosphere may be difficult or impossible to breathe if its *pressure* is wrong. We measure air pressure in "atmospheres" (atm.); 1 atm. is air pressure at sea level on Earth.

Trace (up to 0.01 atm.): Treat an atmosphere this thin as vacuum (see *Vacuum*, p. 437).

Very Thin (up to 0.5 atm.): The air is too thin to breathe. Earth's atmosphere becomes "very thin" above 20,000'. If you lack protection (e.g., the Doesn't Breathe advantage, or a respirator and oxygen tanks), you suffocate – see *Suffocation* (p. 436). Vision rolls are at -2 without eye protection.

Thin (0.51-0.8 atm.): Earth's atmosphere is "thin" between 6,000' and 20,000'. Thin air is breathable *if* oxygen is present in Earthlike percentages, but it is hard on unprotected individuals. Increase all fatigue costs for exertion by 1 FP. Vision rolls are at -1 without eye protection. Finally, anyone who breathes thin air for an hour or more must check for "altitude sickness." Make a daily HT roll at +4. Critical success means acclimatization – do not roll again. Success means no effect *today*. Failure means headaches, nausea, etc., giving -2 to DX and IQ. Critical failure means the victim falls into a coma after 1d hours; see *Mortal Conditions* (above). Roll against Physician skill once per day to revive the victim before he dies.

Dense (1.21-1.5 atm.): The air is breathable, with some discomfort: -1 to all HT rolls, unless you have a pressure suit or "reducing respirator" that lowers air pressure.

Very Dense (1.51+ atm.): *Requires* a reducing respirator to breathe; otherwise, you start to suffocate. Usually quite hot from greenhouse effects.

Superdense (10+ atm.): As "very dense," but the atmospheric pressure is so great that it can actually *crush* someone who is not native to it, unless he has Pressure Support or an armored suit that provides this advantage; see *Pressure* (p. 435). Visitors to Venus, or deep inside Jupiter, experience *hundreds* of atmospheres of pressure! Such atmospheres are often poisonous, which presents a separate problem.

These rules assume you are native to 1 atm. and can function normally at 0.81-1.2 atm. If your native pressure differs from 1 atm., multiply all the pressure ranges above by your native pressure in atm. For example, if you're native to 0.5 atm., a "dense" atmosphere for you would be 0.61-0.75 atm. and a "thin" one would be 0.26-0.4 atm.

Cold

Cold can be deadly, but only magic or superscience can produce cold quickly enough to cause damage in combat. Armor offers its usual DR against such "instant" cold attacks, but it must be insulated or heated to shield against prolonged exposure to ambient cold.

Make a HT or HT-based Survival (Arctic) roll, whichever is better, every 30 minutes in "normal" freezing weather. For most humans, this means temperatures below 35°F, but see *Temperature Tolerance* (p. 93). In light wind (10+ mph), roll every 15 minutes. In strong wind (30+ mph), roll every 10 minutes. Additionally, strong wind can dramatically reduce the effective temperature (the "wind chill factor"). Also see the modifiers below:

Situation	*Modifier to HT Roll*
Light or no clothing	-5
Ordinary winter clothing	+0
"Arctic" clothing	+5
Heated suit	+10
Wet clothes	*additional* -5
Every 10° below 0°F *effective* temperature	-1

Failure costs 1 FP. As usual, once you go below 0 FP, you will start to lose 1 HP per FP. Recovery of FP or HP lost to cold requires adequate shelter and a heat source (flame, electric heat, body warmth, etc.).

Thermal Shock: Sudden immersion in icy waters (e.g., any of Earth's oceans far from the equator) or a cryogenic environment can cause death by thermal shock. Note that impure water (e.g., saltwater oceans) can be below the usual freezing temperature! If you are wearing a completely waterproof "dry suit," you are only affected as per normal freezing. Otherwise, roll against HT once per minute of immersion. Do *not* modify this for clothing. On a success, you lose 1 FP. On a failure, you lose FP equal to the margin of failure. Don't forget to check for drowning as well!

Collisions and Falls

When a moving object hits another object, this is a *collision*. Use the rules below for ramming attempts, accidental crashes, falls, and dropped objects.

Damage from Collisions

An object or person's *Hit Points* and *velocity* determine collision damage. Mass only matters indirectly: massive objects usually have high HP, but it would hurt more to collide with a locomotive than with a pillow of the same mass! HP take into account both mass *and* structural strength.

"Velocity" is how fast the character or object is moving in yards per second (2 mph = 1 yard per second). Velocity could be anything up to Move. It might *exceed* Move when diving or falling; see *High-Speed Movement* (p. 394).

An object in a collision inflicts dice of crushing damage equal to (HP × velocity)/100. If this is less than 1d, treat fractions up to 0.25 as 1d-3, fractions up to 0.5 as 1d-2, and any larger fraction as 1d-1. Otherwise, round fractions of 0.5 or more *up* to a full die.

If an object is bullet-shaped, sharp, or spiked, it does half damage, but this damage is piercing, cutting, or impaling, rather than crushing.

Falling Velocity Table

Fall	Velocity	Fall	Velocity	Fall	Velocity	Fall	Velocity
1 yard	5	13-14 yards	17	35-37 yards	28	68-71 yards	39
2 yards	7	15 yards	18	38-39 yards	29	72-75 yards	40
3 yards	8	16-17 yards	19	40-42 yards	30	76-79 yards	41
4 yards	9	18-19 yards	20	43-45 yards	31	80-82 yards	42
5 yards	10	20-21 yards	21	46-48 yards	32	83-86 yards	43
6 yards	11	22-23 yards	22	49-51 yards	33	87-90 yards	44
7 yards	12	24-25 yards	23	52-54 yards	34	91-95 yards	45
8 yards	13	26-27 yards	24	55-57 yards	35	96-99 yards	46
9 yards	14	28-29 yards	25	58-61 yards	36	100-103 yards	47
10-11 yards	15	30-32 yards	26	62-64 yards	37	104-108 yards	48
12 yards	16	33-34 yards	27	65-67 yards	38	109-112 yards	49

Alternatively, calculate velocity in yards per second as the square root of (21.4 × g × distance fallen in yards), where g is the local gravity in Gs (g = 1 on Earth). Round to the nearest whole number.

Immovable Objects

If a moving object hits a stationary object that is too big to push aside – like the ground, a mountain, or an iceberg – it inflicts its usual collision damage on that object and on *itself*. If the obstacle is breakable, the moving object cannot inflict or take more damage than the obstacle's HP + DR.

Hard Objects: If the immovable object is *hard*, use *twice* the HP of the moving object to calculate damage. Clay, concrete, ordinary soil, and sand are all "hard," as is a building, mountain, or similar obstacle.

Soft Objects: If the immovable object is *soft* – e.g., forest litter, hay, swamp, or water – damage is normal. However, *elastic* objects (mattresses, nets, airbags, etc.) give extra DR against collision damage, ranging from DR 2 for a feather bed to DR 10 for a safety net, trampoline, or airbag. When striking water or a similar fluid, a successful Swimming roll (or vehicle control roll, if "ditching" a vehicle) means a clean dive that negates *all* damage. This roll is at a penalty for velocity; use the speed penalty from the *Size and Speed/Range Table* (p. 550).

Falling

A fall is a collision with an immovable object: the ground. Find your velocity when you hit using the *Falling Velocity Table*.

Example: Bill is pushed out a fifth-story window. He falls 17 yards. When he hits the street, his velocity is 19 yards/second. Bill has 10 HP, but he uses *twice* this because he hit a "hard" surface. Damage is (2 × 10 × 19)/100 = 3.8d, which rounds up to 4d crushing.

Falls and Armor: All armor, flexible or not (but *not* innate DR), counts as "flexible" for the purpose of calculating blunt trauma from falling damage. Thus, even if the victim has enough armor DR to stop the falling damage, he suffers 1 HP of injury per 5 points of falling damage. See *Flexible Armor and Blunt Trauma* (p. 379).

Controlled Falls: If you are free to move, you can use Acrobatics skill to land properly. On a success, reduce falling distance by five yards when calculating velocity. If falling into water, you can do this *or* attempt a proper dive (see above) – decide which first!

Terminal Velocity: "Terminal velocity" is the maximum speed a falling object can achieve before air resistance negates further acceleration under gravity. Air resistance is relatively negligible for distances shown on the table, but increases drastically for longer falls.

Terminal velocity varies greatly by object. For human-shaped objects on Earth, it is 60-100 yards/second. Use the low end for a spread-eagled fall, the high end for a swan dive. For dense objects (e.g., rocks) or streamlined objects, it can be 200 yards/second or more!

The terminal velocity rules assume Earth-normal gravity (1G) and atmospheric pressure (1 atm.). Multiply terminal velocity by the square root of gravity in Gs. Then divide it by the square root of pressure in atm. Thus, gravity under 1G, or pressure above 1 atm., reduces terminal velocity; gravity over 1G, or pressure below 1 atm., increases it. Note that terminal velocity is *unlimited* in a vacuum!

Damage from Falling Objects

If an object falls *on* someone, find its velocity on the table above and calculate damage as for an ordinary collision. To hit someone with a dropped object, use Dropping skill (p. 189). Most dropped objects will have Acc 1. Your target cannot avoid the object unless he knows it's coming. If he's aware of it, he can dodge.

A falling object with a Size Modifier equal to or greater than that of whoever it lands on impedes the victim's movement. He may move only one yard on his next turn, and his active defenses are -3. These penalties result from *bulk*, not mass, so ST is irrelevant.

Hit Location from a Fall

If using hit locations, roll randomly for the hit location damaged in a fall. If the injury is to an extremity or a limb, do not ignore injury in excess of that required to cripple it. Instead, subtract the *full* amount from HP! If the fall would cripple a limb, roll 1d. On 5-6, *all* limbs of that type are crippled, although there is no extra injury.

Collision Angle

The angle at which you hit adjusts velocity, affecting damage. This is especially true in collisions between two moving objects!

Head-On: In a head-on collision between two moving objects, collision velocity is the *sum* of the objects' velocities. The slower object cannot inflict more dice of damage than the faster one.

Rear-End: If a faster object overtakes and strikes a slower one, collision velocity is that of the striking object *minus* that of the struck object. The struck object cannot inflict more dice of damage than the striking one.

Side-On Collisions and Falls: If a moving object strikes a stationary one, or strikes a moving object side-on, collision velocity is that of the striking or falling object. The struck object cannot inflict more dice of damage than the striking or falling one.

Example: A car with 60 HP, moving at 50 mph (velocity 25), strikes a pedestrian with 10 HP. The pedestrian was fleeing from the car at Move 5, so this is a "rear-end" collision. Collision velocity is 25 (car) - 5 (pedestrian) = 20. The car inflicts (60 × 20)/100 = 12d crushing damage on the pedestrian; the pedestrian inflicts (10 × 20)/100 = 2d crushing damage on the car.

Overruns

If the Size Modifier of the striking object in a collision exceeds that of the struck object by two or more (e.g., a car hitting a man) the striking object "overruns" the struck object. This inflicts additional crushing damage: roll thrust damage for ST equal to *half* the striking object's HP (or half its ST score, if it has one). Even a slow-moving elephant or a tank can crush someone who doesn't get out of the way. This rule does *not* apply to falls.

Anything with a ST attribute can *deliberately* trample as well; see *Trampling* (p. 404).

Whiplash and Collision

Anyone *inside* an object that comes to a *sudden* stop in a fall or a collision (a falling elevator, a crashing car, etc.) takes damage. Find the speed lost in the "stop" and work out falling damage for this velocity. Seatbelts or straps give DR 5 vs. this damage; airbags give DR 10. In a collision involving an open vehicle, also work out knockback from this damage for those who weren't strapped in. This is how far they fly . . .

In a collision involving an open vehicle, work out knockback for those who weren't strapped in. This is how far they fly . . .

Electricity

If an uninsulated person is exposed to electricity, he may receive a shock. The effects of electric shock are *highly* variable, ranging from momentary stunning to instant death! This section helps the GM assess these effects if a character receives a shock during an adventure. If a specific attack or scenario gives different rules, they override the guidelines below.

All electrical damage falls into one of two classes: *nonlethal* or *lethal*. Against either, metallic armor (e.g., plate armor) provides only DR 1 – and if the wearer is grounded, he actually *attracts* electrical attacks, giving the attacker +2 to hit.

Nonlethal Electrical Damage

High-voltage, low-power shocks are unlikely to kill, but can stun the victim or even render him unconscious. This is called "nonlethal electrical damage." Examples include electric stun weapons, realistic electric fences, and static shocks on a cool, dry day. The GM should require an immediate HT roll whenever someone is zapped.

Modifiers: From +2 for a short circuit in a battery-powered gadget down to -3 or -4 for a specially designed stun weapon. Nonmetallic armor gives a bonus equal to its DR – but *surface* shocks (e.g., from a cattle prod) tend to flow over armor rather than through it, and have an armor divisor of (0.5), while energy weapons designed to arc through armor have an armor divisor of (2) or even (5).

On a failure, the victim is stunned. An instantaneous jolt (static electricity, electrolaser, etc.) stuns for one second, after which time the victim may roll vs. HT once per second to recover. A continuous shock (stun gun, electric fence, etc.) stuns for as long as the victim is in contact with the source, and for (20 - HT) seconds after that, with a minimum of 1 second. After this time, the victim may roll vs. HT each second to recover. The basic HT modifier for the strength of the shock (but *not* for DR) applies to all recovery rolls.

Electromuscular Disruption (EMD): Some ultra-tech weapons deliver a more powerful current that induces convulsions. The HT roll is at -5, and if the victim fails, he is knocked down and paralyzed instead of merely stunned. Otherwise, the effects are as above.

Lethal Electrical Damage

High-power shocks cook flesh and inflict real damage; they can even stop the victim's heart! This is called "lethal electrical damage." Examples include power mains, lightning bolts (natural and magical), and *cinematic* electric fences.

Lethal electric shocks inflict *burning* damage: only 1d-3 to 3d around the house, but 6d on up for lightning, transmission lines, etc. A victim who suffers *any* injury must make a HT roll at -1 per 2 points of injury suffered. On a failure, he falls unconscious for as long as the current is applied, and for (20 - HT) minutes afterward, with a minimum of 1 minute. He will be at -2 DX for *another* (20 - HT) minutes when he recovers. Failure by 5 or more, or any critical failure, results in a heart attack; see *Mortal Conditions* (p. 429).

Lethal electrical damage also causes "surge" effects in victims who have the Electrical disadvantage (p. 134).

Localized Injury: Attacks that don't affect the target's entire body – including most magical electricity attacks – cause pain and burns, but not unconsciousness or cardiac arrest. Treat this as normal burning damage, except that the victim must make a HT roll at -1 per 2 points of injury suffered. On a failure, he is stunned for one second, after which time he may roll vs. HT once per second to recover. If the injury is to the arm or hand, he must also make a Will roll or drop anything carried in that hand.

Flame

Exposure to flame inflicts *burning* damage. See *Wounding Modifiers and Injury* (p. 379) and *Hit Location* (p. 398) for wounding effects. Below are some additional special rules.

Fire Sources

Adventurers often encounter flaming oil (see *Molotov Cocktails and Oil Flasks*, p. 411), high-tech weapons, Innate Attacks, and battle magic (see *Fire Spells*, p. 246) . . . not to mention the burning rubble these attacks leave behind!

If you spend *part* of a turn in a fire (e.g., running through the flames), you take 1d-3 burning damage. If you spend *all* of a turn in a fire of ordinary intensity – or if you are on fire – you take 1d-1 damage per second. Very intense fires inflict more damage; for instance, molten metal or a furnace would inflict 3d per second! Use *Large-Area Injury* (p. 400) in all cases.

Continued exposure to a fire can result in intense heat that can rapidly fatigue you even if the flames themselves cannot penetrate your DR. See *Heat* (p. 434).

Incendiary Attacks: Any attack with the Incendiary damage modifier (p. 105) does one point of burning damage in addition to its other damage; in effect, it has a one-point linked burning attack. Examples include torches (see *Torches and Flashlights*, p. 394) and flaming arrows (see *Flaming Arrows*, p. 410). High-tech tracer bullets also qualify.

Making Things Burn

Materials are grouped into six "flammability classes," based on the amount of burning or incendiary damage needed to set them aflame:

Super-Flammable (e.g., black powder, ether): Negligible damage (candle flame).
Highly Flammable (e.g., alcohol, paper, tinder): 1 point.
Flammable (e.g., dry wood, kindling, oil): 3 points.
Resistant (e.g., seasoned wood, clothing, rope, leather): 10 points.
Highly Resistant (e.g., green wood, flesh): 30 points.
Nonflammable (e.g., brick, metal, rock, fireproof synthetics): N/A.

A fire source (including any incendiary attack) that inflicts the listed amount of *burning* damage in a *single* damage roll ignites the material immediately. Divide damage by 10 for tight-beam burning attacks. If the flame fails to ignite the material immediately, but could do so on its *best* damage roll, roll damage once per second for as long as it is in contact. Even if the flame is incapable of inflicting enough damage on its best roll, it may set things afire with prolonged contact. Roll 3d for every 10 seconds of contact. Materials one category up (e.g., Flammable materials taking 1 point per second) catch fire on a 16 or less; those two categories up (e.g., Flammable materials touching a candle flame) catch on a 6 or less.

Once a material starts burning, it may ignite adjacent materials. Make separate rolls for it based on the fire's damage (1d-1 per second for an ordinary fire).

Catching Fire

A *single* hit that inflicts at least 3 points of basic burning damage ignites *part* of the victim's clothing. (The Ignite Fire spell does this at its third level of effect; see p. 246). This does 1d-4 burning damage per second and is distracting (-2 to DX, unless the damage simply cannot harm the target). To put out the fire, the victim must beat it with his hands. This requires a DX roll, and each attempt takes a Ready maneuver.

A *single* hit that inflicts 10 or more points of basic burning damage ignites *all* of the victim's clothes. This does 1d-1 burning damage per second and is *very* distracting (-3 to DX, except when rolling to put out the fire). To put out the fire, the victim must roll on the ground. This requires a DX roll, and each attempt takes *three* Ready maneuvers. Jumping into water takes only one second, and automatically extinguishes the fire.

If a wooden shield takes 10 or more points of burning damage in one second, the bearer is at -2 to DX, and takes 1d-5 burning damage per second until he gets rid of it.

Clothing that is wet or worn under armor is almost impossible to ignite, and won't stay lit. On the other hand, fancy dresses, lace cuffs, and so on ignite if they take even 1 point of burning damage!

In all cases, remember to apply shock penalties to DX if the flame inflicts injury!

The above guidelines assume ordinary clothing. Armor is good protection against fire; clothing worn over armor (e.g., a surcoat) might burn, but the armor's DR reduces the damage normally. Clothing that is wet or worn *under* armor is almost impossible to ignite, and won't stay lit. On the other hand, fancy dresses, lace cuffs, and so on ignite if they take even 1 point of burning damage!

Remember to divide damage from tight-beam burning attacks by 10 when applying the rules above.

Gravity and Acceleration

A change in gravity can be harmful. These rules describe *health* effects; see *Different Gravity* (p. 350) for the effects of gravity on common tasks.

Space Adaptation Syndrome ("Space Sickness")

Those who are not native to micro- or zero gravity ("free fall") may become nauseated and disoriented by the constant falling sensation. Roll against the *higher* of HT or Free Fall when you first enter free fall. The Space Sickness disadvantage (p. 156) gives -4.

On a success, you are unaffected. On a failure, you are nauseated (see *Afflictions*, p. 428), which may trigger vomiting. If you begin to retch while wearing a vacc suit, you may choke; treat this as drowning (see *Swimming*, p. 354). Roll against the *better* of HT or Free Fall every 8 hours to recover. If you suffer from Space Sickness, you *cannot* adapt!

High Acceleration

Make a HT roll whenever you experience a *sudden* acceleration ("G-force") of at least 2.5 times your home gravity. Treat a home gravity under 0.1G as 0.1G for this purpose.

Modifiers: -2 per doubling of acceleration (-2 at 5× home gravity, -4 at 10×, and so on); +2 if seated or lying prone, or -2 if upside down.

On a failure, you lose FP equal to your margin of failure. On a critical failure, you also black out for 10 seconds times your margin of failure.

A sudden acceleration may throw you against a solid object. If this happens, treat it as a collision with that object at a velocity equal to 10 × G-force of the acceleration.

Heat

In ordinary hot weather, you will experience no ill effects if you stay in the shade and don't move around much. But if you are *active* in temperatures in the top 10° of your comfort zone or above – over 80°F, for humans without Temperature Tolerance (p. 93) – make a HT or HT-based Survival (Desert) roll, whichever is better, every 30 minutes.

Modifiers: A penalty equal to your encumbrance level (-1 for Light, -2 for Medium, and so on); -1 per extra 10° heat.

Failure costs 1 FP. On a critical failure, you suffer heat stroke: lose *1d* FP. As usual, if you go below 0 FP, you start to lose 1 HP per FP. You cannot recover FP or HP lost to heat until you move into cooler surroundings.

In addition, at temperatures up to 30° over your comfort zone (91-120° for humans), you lose an extra 1 FP whenever you lose FP to exertion or dehydration. At temperatures up to 60° over your comfort zone (121-150° for humans), this becomes an extra 2 FP.

Intense Heat: Human skin starts to *burn* at 160°; see *Flame* (p. 433) for damage. Even if no damage penetrates your DR, you will rapidly overheat if the ambient temperature is more than 6 × your comfort zone's width over your comfort zone (e.g., in a fire). After 3 × DR seconds, make a HT roll every second. On a failure, you lose 1 FP. Your DR provides its usual protection against burning damage, but it has no effect on this FP loss.

Sunburn: After a day of full sun on unprotected skin, an albino will be near death and a light-skinned Caucasian will be very uncomfortable (1d-3 damage). Darker-skinned individuals may itch, but aren't in much danger. Details are up to the GM.

Armor: Armor prevents sunburn and provides its full DR against burning damage – but only armor that provides Temperature Tolerance (through insulation or a cooling system) can prevent FP loss due to heat. This feature is standard on battlesuits and TL9+ combat armor.

Pressure

Adventurers are most likely to encounter extreme pressure in superdense atmospheres (see *Atmospheric Pressure*, p. 429) or deep underwater (where pressure increases by about 1 atmosphere per 33' of depth). Pressures in excess of your native pressure – 1 atm., for a human – are not always immediately lethal, but present serious risks.

Over 2 × native pressure: You risk "the bends" (see below) if you experience over 2 × native pressure and then return to normal pressure. With Pressure Support 1, the bends are only a risk when returning from over *10* × native pressure. With Pressure Support 2 or 3, you are *immune* to the bends.

Over 10 × native pressure: You may be crushed! On initial exposure and every minute thereafter, roll vs. HT at a basic +3, but -1 per 10 × native pressure. If you fail, you suffer 1 HP of injury equal to your margin of failure. If your Size Modifier is +2 or more, multiply injury by SM. With Pressure Support 2, read this as "Over 100 × native pressure" and "-1 per 100 × native pressure." With Pressure Support 3, you are *immune* to pressure.

The Bends

When you are breathing air that has been compressed (e.g., using scuba gear), your blood and tissues absorb some of the nitrogen gas in the compressed air. When you return to normal pressure, or "decompress," this nitrogen escapes, forming small bubbles in the blood and muscles. This can result in joint pains, dizzy spells, possibly even death. These symptoms are known as "the bends."

You risk the bends if you return to normal pressure after experiencing pressure greater than twice your native pressure (or *10* times native pressure, with Pressure Support 1). To avoid this, you must decompress *slowly*, spending time at intermediate pressures to allow the nitrogen to escape harmlessly.

Divers and mountaineers use precise tables to determine decompression times based on time spent at a given pressure. For game purposes, at up to 2 atm. (about 33' underwater), a human can operate for *any* amount of time and return without risk. At up to 2.5 atm. (50' depth), a human can safely operate for up to 80 minutes and return without requiring slow decompression. Greater pressures reduce the safe time without slow decompression: at 4 atm. (100' depth), it's about 22 minutes; at 5.5+ atm. (150' depth), there is *no* safe period.

Safe decompression involves slowly lowering the pressure, either naturally (e.g., a diver deliberately taking hours to reach the surface) or in a decompression chamber. The time required increases with both pressure and exposure time. It can be several hours – or even *days*.

If you fail to decompress slowly enough, make a HT roll. *Critical success* means no ill effects. *Success* means severe joint pain, causing agony (see *Incapacitating Conditions*, p. 428); roll vs. HT hourly to recover. *Failure* means unconsciousness or painful paralysis; roll vs. HT hourly to regain consciousness, with each failure causing 1d of injury. Once conscious, you suffer joint pain, as described above. *Critical failure* results in painful death. Recompression to the highest pressure experienced lets you roll at HT+4 every five minutes to recover from all effects short of death.

An *instant* pressure reduction can *also* result in explosive decompression; see *Vacuum* (p. 437) for details. All effects are cumulative!

Radiation

Radiation threatens high-tech heroes in the form of solar flares, cosmic rays, nuclear accidents, radioactive materials, and lethal weapons (nuclear bombs, particle beams, etc.). Exposure is measured in *rads*. The more rads received, the greater the chance of ill effects.

Whenever a character is exposed to radiation, the GM should note both the dose and the date. Each dose diminishes separately from all others; it starts to heal after 30 days, at the rate of 10 rads per day. However, 10% of the original dose *never* heals (except via ultra-tech, magic, etc.).

Example: A reactor technician spends a day in a "hot" environment and receives a 200-rad dose. After 30 days, *that particular dose* starts to heal at 10 rads/day. After another 18 days, the remaining dose is 20 rads – 10% of 200 rads – and stops healing.

Radiation Hazards

Cosmic Rays: **A constant hazard for space travelers. Inflict 1 rad/week. Only massive shielding protects people.**

Fallout: **Small radioactive particles, such as those produced by a ground-burst nuclear bomb. Inflicts 2-5 rads/minute within a few hours of the blast, and several rads/hour over the next day. If you breathe or swallow fallout (in contaminated food or water), the ingested material delivers a continuing dose (see below).**

Fission Plant Accident: **1,000 rads/hour or more! This is only in close proximity (e.g., the reactor room); divide dose by the square of the distance in yards from the source.**

Ingested Radioactive Material: **Plutonium, radium-226, uranium-235, etc. Even tiny doses** can cause 1 rad/day to several rads/minute, **depending on the isotope.** (Some radioactive materials, such as plutonium, are also extremely toxic!)

Innate Attack: An attack with the Radiation damage modifier (p. 105) delivers one rad per point of damage rolled.

Nuclear Blast: One-megaton fission air or space burst at 2,000 yards: 6,600 rads!

Effects of Radiation on Living Things

When a living being accumulates at least 1 rad (but no more than once per day, for continued exposure to a given source), he must make a HT roll. Consult the *Radiation Effects Table*, below, and find his current accumulated dose in the "Accumulated Dose" column. Apply the modifier in the "HT" column to his HT roll. Then roll the dice. Use the first result in the "Effects" column on a critical success, the second on a success, the third on a failure, and the last on a critical failure.

Radiation Effects Table

Accumulated Dose	*HT*	*Effects*
1-10 rads	+0	–/–/A/B
11-20 rads	+0	–/A/B/C
21-40 rads	+0	A/B/C/D
41-80 rads	-1	A/B/C/D
81-160 rads	-3	A/B/C/D
161-800 rads	-4	A/B/C/D
800-4,000 rads	-5	C/D/E/E
Over 4,000 rads	-5	D/F/E/E

–: The dose has no obvious effect, but doses continue to accumulate.

A: Radiation burns and chronic "somatic" damage. HT hours after irradiation, suffer 1d of injury and gain Low Pain Threshold for one week (those with High Pain Threshold lose this instead). If you recover, make two more HT rolls with the modifier on the table: one to avoid sterility, the other to avoid gaining the Terminally Ill (1 year) disadvantage.

B: Hematopoietic syndrome. As **A,** but as well, after HT hours you are nauseated (see *Irritating Conditions*, p. 428) for a further (40 - HT) hours; lose 1d each from DX, IQ, and FP; and acquire the Hemophilia disadvantage. Each day, make a HT roll with the modifier on the table. On a critical success, you heal 2 points each of DX, IQ, and FP; on a success, you recover 1 point of each; on a failure, there is no improvement; and on a critical failure, you *lose* 1 point of each and are nauseated that day. After recovering all lost DX, IQ, and FP, you no longer suffer from Hemophilia or need to make daily HT rolls.

C: Gastrointestinal syndrome. As **B,** but in 1d/2 weeks, you also lose all body hair and must make daily HT rolls. On a critical failure, you suffer 1d points of injury; on a failure, 2 points of injury; on a success, 1 point of injury; and on a critical success, injury stops and normal recovery can occur (and hair starts to grow back). Until injury stops, you have Susceptible to Disease -3 (p. 158) and suffer from nausea. If you lose more than 2/3 of your HP to radiation, your teeth and nails start to fall out.

D: Terminal radiation sickness. As **C,** except HP loss begins in 1d/2 *days*, and even a critical success won't stop daily HP loss – it only postpones it for a day. Death is certain.

E: Rapid cerebrovascular death. After one hour, you lose 1d from each of DX, IQ, and FP; take 1d of injury; gain Hemophilia, Low Pain Threshold, and Susceptible to Disease -3; and are nauseated. Make an hourly HT roll. Critical failure means instant death from brain hemorrhage; failure means loss of another 2 points of DX, IQ, and FP, and 2 more points of injury; success means 1 extra point of each; critical success mean no decline that hour.

Other Effects: In addition to these effects, a *single* dose of 200+ rads causes sterility and blindness for 1d months; a dose of 500+ rads makes it permanent. An *accumulated* dose of 100+ rads increases the risk of birth defects. Should you become a parent, make a HT roll, at +3 if you are male. On a failure, the child has some sort of birth defect (GM's option).

Radiation and Nonhumans

The above effects apply to humans and most other mammals. Other creatures may have Radiation Tolerance (p. 79).

Machines are not affected unless they have the Electrical disadvantage (p. 134). Each time such a machine accumulates a dose of 100 rads, make a HT roll at a basic +4, -1 per 100 rads accumulated dose. On a failure, it ceases to function until repaired. On a critical failure, it is destroyed (any data stored on it is also lost).

Radiation Protection

Any material between you and the radiation source grants a Protection Factor (PF) that reduces your received dose. Divide your dose by PF; e.g., PF 100 means 1/100 the dose. Half an inch of lead, 1.5 inches of steel, or 750 yards of air has PF 2; a yard of water has PF 8; a yard of earth has PF 27; and a yard of concrete has PF 64.

Shielding protects differently against certain types of radiation. Radiation from solar flares and planetary radiation belts (like the Van Allen belt) is mostly free electrons and alpha particles: multiply PF by 20. Against cosmic rays, divide PF by 100!

Radiation Treatment

All costs below are *per treatment.*

At TL7, drugs are available that can halve your effective rad dosage if a dose ($500) is taken 1-3 hours *in advance*. Chelating drugs are also available to get radioactive fallout out of your system; a dose ($500) halves exposure after 3 days and eliminates it entirely after a week. This has no effect on radiation already absorbed!

At TL8, advanced chelating drugs ($500) encapsulate and remove fallout in 12 hours.

At TL9, advanced anti-radiation drugs or cell-repair nanotechnology ($1,000) can give +3 to all HT rolls vs. radiation for 2 weeks.

At TL10+, cell-repair nanotech or rejuvenation technology might be able to completely repair the ravages of radiation, provided the victim is still alive.

SEASICKNESS

Those aboard a seagoing vessel (excluding large, modern vessels with roll stabilizers) must check for seasickness on their first day afloat. Use the rules for the Motion Sickness disadvantage (p. 144) – but if you lack that disadvantage, you roll at HT+5, and with a success by 5 or more, or a critical success, you suffer *no* ill effects at all.

SUFFOCATION

If you *completely* lack air – see *Actions After a Grapple* (p. 370), *Choke Hold* (p. 371), and *Holding Your Breath* (p. 351) for examples – you lose 1 FP per second. If you are drowning after a failed Swimming roll, you can get *some* air, but you also inhale water: roll vs. Swimming every five seconds;

failure costs 1 FP (see *Swimming*, p. 154).

At 0 FP, you must make a Will roll every second or fall unconscious. You are likely to die unless rescued (see *Lost Fatigue Points*, p. 426). Regardless of FP or HP, you die after four minutes without air.

If you get clean air before you die, you stop losing FP and start to recover FP at the usual rate (see *Recovering from Fatigue*, p. 427). If you are unconscious, you awaken once you have 1 FP. If you were drowning, a rescuer must *also* make a First Aid roll to get the water out of your lungs in order to save you – see *Resuscitation* (p. 425).

If you went without air for more than two minutes, roll vs. HT to avoid permanent brain damage: -1 to IQ.

Vacuum

Vacuum is the absence of air – but these rules also apply in trace atmospheres, where there is *almost* no air. If you are exposed to vacuum without protection (e.g., a vacc suit or the Vacuum Support advantage), the following rules apply.

Breathing Vacuum: You can't hold your breath in vacuum – and you may rupture your lungs if you try (1d of injury). If you exhale and leave your mouth open, you can operate on the oxygen in your blood for *half* the time listed under *Holding Your Breath* (p. 351). After that, you begin to suffocate (see *Suffocation*, p. 436).

Explosive Decompression: When an area *suddenly* goes from normal pressure to little or none (a "blowout"), body fluids boil, blood vessels rupture, and eardrums pop. Take 1d of injury immediately, and roll vs. HT to avoid the bends (see *The Bends*, p. 435). Also roll vs. HT+2 for each eye; failure means One Eye or Blindness, as appropriate. Finally, roll vs. HT-1 to avoid Hard of Hearing. Use the *Duration of Crippling Injuries* rules (p. 422) to determine how long these disadvantages last.

Extreme Temperatures: Vacuum itself is neither "cold" nor "hot," but in the absence of air, surfaces in shadow will eventually grow very cold, while those in sunlight will become extremely hot. For example, on the moon – with its month-long "day" – the temperature can range from -243°F (at night) to 225°F (at noon).

Poison

Poison can show up on weapons; on darts, needles, or spikes in traps; in food or drink offered by a treacherous foe; and anywhere else you did not expect it. Human foes are not the only ones who can poison you. Snakes, insects, and certain other creatures have natural poison (usually blood agents) – and eating the wrong plant or animal may treat you to a dose of digestive poison.

Describing Poisons

A poison's description includes its name, means of delivery, delay, resistance roll, effects (injury and symptoms), and cost per dose – and possibly notes on what constitutes a "dose," how to use or conceal the poison, and how to treat it (including any antidotes).

A poison can have multiple sets of effects. For example, tear gas is both a respiratory agent (with one set of effects) and a vision-based agent (with other effects).

Delivery

A given poison might reach its victim in any of several ways:

Blood Agent: The poison must reach a mucous membrane (eyes, open mouth, nose, etc.) or an open wound. If it is sprayed or spat, it must actually strike one of these vulnerable areas (so a spitting cobra must target the face). If it is delivered as a gas or wide-area spray, only those with the Sealed advantage (p. 82) – or with one of Doesn't Breathe (p. 49) or Filter Lungs (p. 55) *and* one of Nictitating Membrane (p. 71) or Protected Vision (p. 78) – are immune. These advantages might be natural or provided by equipment.

Contact Agent: The poison must be inhaled or touch skin to take effect. If it is use to poison a melee weapon, the weapon must hit an unarmored and unclad hit location for the poison to affect the target. If it is delivered as a gas or wide-area spray, it affects everyone in the area who lacks the Sealed advantage (whether natural or provided by a suit, vehicle, etc.).

Digestive Agent: The victim must swallow the poison. This is typical of poisonous plants and toxic substances such as arsenic. If the poison has a slight but distinctive taste (e.g., cyanide), the GM can allow the victim a Taste roll or Perception-based Poisons roll – at a basic -2, but +2 per doubling of dosage – to notice it in time. Poisons that are easier to detect give a bonus; those that are harder to detect, or whose taste is masked by suitable food or drink, give a penalty. To force someone to swallow a poison rather than spit it out, you must grapple him by the head or neck and maintain your hold for 10 seconds.

Follow-Up Poison: The poison must be placed on a piercing or impaling weapon, or injected using a hollow projectile, hypodermic needle, etc. If the weapon penetrates DR and does *any* damage, it delivers the poison. Most "follow-up" poisons are simply blood or contact agents injected into the body.

Respiratory Agent: The poison is a gas that only affects those who inhale it into their lungs. Delivery is usually via an area or cone attack (e.g., gas grenade, spray gun, or dragon's breath), but an *entire atmosphere* could be poisonous! Only Doesn't Breathe and Filter Lungs protect completely against respiratory agents – but a victim who makes a Sense roll to notice the poison in time may hold his breath (see *Holding Your Breath*, p. 351). Unconscious or stunned victims inhale automatically. An improvised mask, such as a wet towel over the face, gives +1 to HT to resist.

Sense-Based Agent: The poison affects the victim through a specific sense. It has no effect on those who lack that sense or have appropriate protection. A smell-based agent is usually a foul stench that induces nausea; suitable protection is nose plugs, a respirator, or the Protected Sense (Smell) advantage. A vision-based agent is generally a cloud of gas that irritates the eyes; appropriate protection is a gas mask, goggles, or the Protected Sense (Vision) advantage. See *Sense-Based* (p. 109).

Delay

Most poisons require a few seconds to several hours to take effect. This is nearly *always* true for digestive agents.

Delays given are for victims with Size Modifier 0. The victim's size modifies delay: each +1 to SM *doubles* the delay; each -1 to SM *halves* the delay. For example, if the delay is 1 hour, someone with SM -2 is affected in only 15 minutes.

Special Delivery

Two qualifiers can apply to several of the standard means of delivery:

Cumulative: **A poison may be mild in low concentrations but become harmful with continued exposure. The GM must decide how much exposure constitutes a "dose." This might be time-based (e.g., a toxic atmosphere that requires an hour of exposure) or based on the victim's bulk or body mass (ST/10 ounces of liquid, HP/5 pills, etc.). See *Drinking and Intoxication* (p. 439) for a detailed example.**

Persistent Gas: A respiratory agent or area-effect blood or contact agent typically persists for 10 seconds or more, depending on wind. Some contact agents leave a poisonous residue on exposed surfaces until they're washed away.

Resistance Roll

Some poisons give the victim a HT roll to resist. Make this roll after the delay, if any, has passed. There is often a modifier: a mild poison might call for a HT+2 roll, while one that is almost impossible to resist might require a HT-8 roll! HT to HT-4 is typical. DR never affects this roll.

If you're in a poisonous *environment* (like a gas cloud or toxic atmosphere) and make your initial HT roll, you must roll again once per second until the poison affects you or you leave the area. If the poison has a delay, roll after each delay period instead.

Some poisons are specific to certain species and do not affect others. Others are easier or harder for particular species to resist. These effects are up to the GM.

Effects of Poison

The most common effect of poison is *toxic* or *fatigue* damage. Mild poisons might only inflict 1 HP or FP; more severe poisons might inflict 1d or more. DR has no effect on this damage. These HP and FP losses heal normally, but if the poison is cyclic (see below), no healing is possible until after the final cycle!

Damaging poisons sometimes affect their victims gradually, causing damage each time a specified interval of time passes. The description of such a poison specifies the length of this interval and the total number of cycles. The interval may vary from one second (for a fast-acting agent) to one day (for a slow poison). The total number of cycles may be two to several dozen.

If a resistible poison is cyclic, the victim gets a new HT roll to resist every cycle. On a success, he shakes off the poison; on a failure, an additional cycle of damage occurs. Note that even a poison that inflicts 1 HP of injury per day can be lethal if it's hard to resist *and* lasts for two dozen cycles!

A poison always has *some* symptoms. The basic damage includes symptoms such as swelling, headache, and fever. Poisons that inflict toxic damage may have more severe symptoms that occur automatically after the poison causes enough injury (usually 1/3, 1/2, or 2/3 of the victim's HP). For example, a poison might result in blindness once the victim loses 1/2 his HP. Symptoms vanish when the victim's HP rise above this threshold.

Some poisons cause effects other than injury or fatigue, including attribute penalties, irritating or incapacitating conditions (see *Afflictions*, p. 428), temporary disadvantages, or even the removal of existing advantages (e.g., an alchemical poison that negates Magery). The victim usually gets a resistance roll against these effects, and the effects always have a specific duration. The default duration is a number of minutes equal to the margin of failure on the resistance roll. In a poisonous *environment*, a failed resistance roll means the effects last for as long as you're in the environment *plus* the duration.

Cost Per Dose

It is up to the GM whether a particular poison is for sale – it might be impossible to extract in a useful form, or the authorities might want to keep it off the market. If a poison *is* available, its cost often reflects how difficult it is to obtain, not its effectiveness. In most game worlds, people who sell poisons are criminals. All of these factors make cost per dose highly variable. See *Poison Examples* (p. 439) for suggestions . . . but the GM is free to use whatever prices he feels are reasonable.

Dosage

The statistics given in a poison's description always assume one "dose": enough poison to produce the described effects in *one* victim. Some additional notes:

Contact Agents: One dose of a contact agent coats or affects a single hit location.

Gases and Sprays: One dose of a respiratory agent, or a blood or contact agent in gas or spray form, affects one hit location on one victim. For a respiratory agent, this must be the *face*. *Ten* doses are enough to affect everyone in a room (say, a 2-yard radius).

Poison Examples

Arsenic (TL1): A digestive agent with a one-hour delay and a HT-2 roll to resist. Inflicts 1d toxic damage, repeating at hourly intervals for eight cycles. $1/dose. LC1.

Cobra Venom (TL0): A follow-up poison with a one-minute delay and a HT-3 roll to resist. Inflicts 2d toxic damage, repeating at hourly intervals for six cycles. A victim who loses 1/3, 1/2, or 2/3 HP has -2, -4, or -6 DX, respectively. $10/dose. LC1.

Cyanide (TL4): This fast-acting poison is deadly in any form. As a follow-up poison or respiratory agent, it has *no* delay. As a contact or digestive agent, it has a 15-minute delay. In all cases, there is *no* HT roll to resist! Inflicts 4d toxic damage. $2/dose. LC1.

Mustard Gas (TL6): An area-effect respiratory *and* contact agent. As a contact agent, it has *no* delay and a HT-4 roll to resist, and inflicts 1 point of toxic damage, repeating at 8-hour intervals for 24 cycles. As a respiratory agent, it has a two-hour delay and a HT-1 roll to resist, and inflicts 1d toxic damage, repeating at one-hour intervals for six cycles. $10/dose. LC0.

Nerve Gas (TL6): An area-effect contact agent with *no* delay and a HT-6 roll to resist. Inflicts 2d toxic damage, repeating at one-minute intervals for six cycles. A nerve gas usually causes agony, paralysis, retching, or seizure as well; see *Afflictions* (p. 428) $20/dose. LC0.

Smoke: Ordinary smoke is an area-effect respiratory agent with a 10-second delay and a HT roll to resist. Causes coughing (see *Afflictions*, p. 428) for the time spent in the smoke plus one minute times the margin of failure. *Dense* smoke can cause actual damage. LC4.

Tear Gas (TL6): An area-effect respiratory *and* vision-based agent. As a respiratory agent, it has *no* delay and a HT-2 roll to resist, and causes coughing (see *Afflictions*, p. 428). As a vision-based agent, it has *no* delay and a HT-2 roll to resist, and causes blindness. Both effects endure for the time spent in the gas plus one minute times the margin of failure. Tear gas is opaque: Vision rolls are at -1 to -3 per affected yard. $10/dose. LC2.

Individuals unprepared for mustard, nerve, or tear gas may have to make Fright Checks!

Poisoned Weapons: One dose of a follow-up poison envenoms the *tip* of a piercing or impaling weapon, or fills a hypo. Poisoning the *edge* of a weapon, so that a cutting attack can deliver it, requires three doses per yard of reach. Most poisons on blades only last for one successful strike or three blocked or parried ones. Misses and dodged attacks do not rub off the poison.

Varying the Dosage: It is possible to vary the dosage of a digestive agent or a follow-up poison delivered by hypodermic. Each doubling of dosage (and cost!) halves the delay and interval, doubles damage, gives -2 to HT rolls to resist, and gives +2 to all rolls to detect the poison (including the victim's Sense rolls, and any Diagnosis or Forensics roll made to investigate the victim's symptoms or death). Using *less* than one full dose may reverse these modifiers or simply make the poison ineffective, at the GM's option.

Treatment

If the poison has a delay, there may be time to treat the victim before he suffers *any* ill effects. Since he will not yet be showing symptoms, he must be aware of his predicament in order to seek help!

A poisonous animal bite is usually obvious – but the GM may require a Naturalist roll to realize that an animal is venomous. Sucking the poison from the wound takes a minute, requires a First Aid or Physician roll at -2, and gives +2 on HT rolls to resist.

If the victim suspects a digestive agent, he or a friend can induce vomiting to expel the poison. This takes 10 seconds, calls for a First Aid or Physician roll, and gives +2 to resist the poison. But for some poisons, vomiting is a bad idea – it can *increase* injury!

It might also be possible to take an antidote. Antidotes exist for only a few poisons. Where they do exist, they are usually specific to the poison. The *correct* antidote gives the victim a bonus to HT rolls to resist the poison, or even completely halts the poison.

Medical procedures – chelation, gastric lavage, intravenous fluids, oxygenation, etc. – can also give a HT bonus, but only if the treatment suits the poison. Such measures require a Physician roll. The HT bonus never exceeds TL/2 (round *up*, minimum +1).

To learn whether it is safe to induce vomiting, or which antidotes or procedures to use, you must identify the poison. This is tricky before symptoms appear! The GM may require rolls against Poisons (to identify a residue on a dart, in a glass, etc.), Naturalist (to identify a venomous animal), or even Intimidation (to force the poisoner to reveal what he used).

Once the victim takes damage, symptoms appear. At this point, a Diagnosis or Poisons roll can identify the poison. If the poison is cyclic, the correct antidote or medical procedures can help prevent *further* damage, providing their bonus to future HT rolls.

Drinking and Intoxication

If you drink too much alcohol in a short period of time, you may become intoxicated. Keep track of how many "drinks" you consume each hour. For simplicity, one drink is a full mug or can of beer (12 oz.), a full glass of wine (4-5 oz.), or a shot of spirits (1.5 oz.).

At the end of any hour during which you consume more than ST/4 drinks, roll against the *higher* of HT or Carousing. If you continue to drink, continue to roll once per hour.

Modifiers: -1 per drink over ST/4 that hour; -2 on an empty stomach, or +1 if you have recently eaten; +2 for the Alcohol Tolerance perk (p. 100), or -2 for the Alcohol Intolerance quirk (p. 165).

Each failure shifts you one level from *sober* to *tipsy* to *drunk* to *unconscious* (drunken stupor) to *coma;* see *Afflictions* (p. 428) for details. A critical failure drops you *two* levels: sober to drunk, tipsy to unconscious, or drunk to coma. If penalties reduce your roll to 2 or less, critical failure means you drop *three* levels! Remember that any roll 10 or more above effective skill is a critical failure; e.g., a roll of 11+ against a modified HT of 1.

Pink Elephants: If you are drunk, make one additional HT+4 roll. On a failure, you are also hallucinating (see *Incapacitating Conditions,* p. 428).

The Heaves: If you are drunk and keep drinking, your body will try to purge itself of the alcohol (which *is* a toxin, after all!). When a failed HT roll indicates that you would fall unconscious or into a coma, make a second, unmodified HT roll. On a success, you vomit up the alcohol instead of passing out; treat this as *retching* (p. 429). On a critical failure, however, you pass out and *then* retch; treat this as *choking* (p. 428).

Sobering Up: To sober up, you must first stop drinking. After *half* as many hours as the total number of drinks you consumed, roll vs. HT. Various remedies may give a bonus. On a success, you move one step toward sober. Continue to roll each time this many hours pass until you are sober. *Exception:* To recover from a coma, you need medical help!

Hangovers: If you are tipsy or worse, you must roll vs. HT when you stop drinking, at -2 if you're drunk or -4 if you're unconscious. On a failure, you will suffer a hangover. This kicks in 1d hours after the end of the drinking session – or on awakening, if you pass out or fall asleep before this time – and lasts hours equal to your margin of failure. During this time, you will suffer from moderate pain (see *Irritating Conditions,* p. 428) and acquire Low Pain Threshold (or lose High Pain Threshold, if you have it). The GM may decide that preventative treatment (including drinking plenty of water and possibly taking a mild analgesic) gives you a bonus to this roll.

Addictive Drugs

The habitual use of a mind-altering substance can lead to dependency. Abusers have the Addiction disadvantage (p. 122), and may suffer withdrawal (see box) if forced to go without the drug.

Below are rules for three common classes of addictive drugs. Note that these are also *poisons.* If someone takes a large dose, follow all the usual rules for poison on pp. 437-439, except where specified otherwise.

Stimulants

Stimulants elevate the user's mood and energy level . . . temporarily. Potent ones – e.g., amphetamine – restore 1d FP, and give Doesn't Sleep and Overconfidence (12). These effects endure for (12 - HT) hours, minimum one hour. After that time, the user loses *twice* the FP he recovered (e.g., if his FP jumped from 8 to 10, he drops to 6 FP), and gains the disadvantages Bad Temper (12) and Chronic Depression (9) for an equal length of time.

If the user takes multiple doses in 24 hours, he must roll vs. HT after the second and later doses, at a cumulative -1 per dose after the first. On a critical failure, he suffers a heart attack (see *Mortal Conditions,* p. 429).

Stimulants are cheap and only slightly addictive. If they are legal, stimulant addiction is a Minor Addiction (-1 point); if they are illegal, it is a -5-point Addiction.

Hallucinogens

Hallucinogens – e.g., LSD and mescaline – cause disorientation,

Drug Withdrawal

Use these rules when you try to give up an Addiction, either voluntarily or because you are broke, imprisoned, or in a place where your drug just isn't available.

Withdrawal is a painful process that requires a series of daily *withdrawal rolls.* It normally takes 14 successful rolls to shake the habit (thus, it always takes at least two weeks), but the GM is free to vary this. Should you manage to withdraw, you must "buy off" your Addiction disadvantage immediately.

The effects of withdrawal rolls depend on whether the drug is *physiologically* or *psychologically* addictive.

Physiological Dependency: Your body has come to rely on the drug! Make daily withdrawal rolls against HT (maximum 13). Each success puts you a day closer to shaking off your Addiction. The results of failure depend on whether the drug is available. If it is, you give in and take a dose; if you still want to try to withdraw, you must restart the process from day one. If the drug is *not* available, you take 1 HP of injury and may continue the process . . . but that day doesn't count toward the 14 successful rolls needed to withdraw. You cannot naturally recover HP lost to withdrawal until you either succeed or abandon the attempt.

Psychological Dependency: You've convinced yourself that you cannot function without the drug. Make withdrawal rolls against Will (maximum 13). Use the physiological dependency rules, except that if you fail a roll and the drug is unavailable, you don't take injury. Instead, you gain -1 point of drug-related quirks, chosen by the GM. These vanish if you give in and take a dose of the drug (but then you must restart the process). If you don't give in, these quirks grow into progressively more severe mental disadvantages. If you make 14 successful Will rolls, you withdraw – but you must make one final Will roll. On a failure, you *keep* any quirks or disadvantages incurred along the way!

hallucinations, and fits of paranoia. They may induce psychological dependency, but not physiological addiction.

Most of these drugs are taken orally and require about 20 minutes to work. Make a HT-2 roll to resist. On a failure, the user starts hallucinating (see *Incapacitating Conditions*, p. 428). This lasts for hours equal to the margin of failure. After that time, the user may roll vs. HT-2 once per hour to shake off the drug's influence.

Addiction is typically worth -10 points if the drugs are legal, -15 points otherwise.

Overdose

Anyone who takes two or more doses of depressants risks an "overdose." This *definitely* includes taking a single dose of two or more depressants! *Any* alcohol at all counts as an extra dose. Drug interactions can kill . . .

Overdose occurs on a critical failure on any resistance roll for multiple doses. As with any poison, each doubling of dosage gives -2 to resistance rolls – and as for all success rolls, a roll of 10 or more above *effective* skill is a critical failure. For instance, heroin offers a HT-4 roll to resist. If a HT 10 man takes a double dose, his effective HT is 10 - 4 - 2 = 4. He overdoses on a 14 or higher.

Overdose causes unconsciousness for hours equal to the margin of failure. As well, the drug acts as a poison with a resistance roll equal to its usual resistance roll (the *most difficult* roll, for two or more drugs); e.g., HT-4, for heroin. It inflicts 1 point of toxic damage, repeating at 15-minute intervals for 24 cycles. If the victim reaches -1×HP, he slips into a coma (see *Mortal Conditions*, p. 429).

Depressants

Depressants induce drowsiness, lassitude, and (in large doses) insensibility. All offer a HT roll to resist. As with any poison, a large dose gives a penalty – see *Dosage* (p. 438). Massive doses may lead to overdose (see box). Commonly abused depressants include:

Sedatives: These include sleep aids, anti-anxiety drugs, and many psychiatric drugs. A typical sedative is taken orally and requires 20 minutes to take effect. Make a HT-2 roll to resist. On a failure, the user becomes drowsy (see *Irritating Conditions*, p. 428) for hours equal to the margin of failure. Habitual users need larger and larger doses to produce the same effect, increasing the risk of overdose. Sedatives are cheap and highly addictive. If the user acquires them legally, he has a -5-point Addiction; otherwise, he has a -10-point Addiction.

Painkillers: Potent painkillers, such as morphine, are used to treat chronic or surgical pain. Abuse is often the unintended result of legitimate use. Taken orally, there is a delay of 20 minutes; injected, there is *no* delay. Roll vs. HT-4 to resist. On a failure, the user acquires the High Pain Threshold (p. 59) and Unfazeable (p. 95) advantages, and the Laziness disadvantage (p. 142), and experiences euphoria (see *Irritating Conditions*, p. 428). All effects last for hours equal to the margin of failure. Painkillers powerful enough to produce these effects are expensive and totally addictive. Addiction is worth -15 points if the drugs are legal, -20 points otherwise.

Heroin: This opium derivative has few legitimate uses. It is typically injected, in which case there is no delay. Roll vs. HT-4 to resist. Failure incapacitates the user for hours equal to the margin of failure – treat this as ecstasy (see *Incapacitating Conditions*, p. 428). In addition to the usual risk of overdose, there is always the chance the heroin was "cut" with toxic filler; effects are up to the GM. Heroin is very expensive, incapacitating, totally addictive, and illegal; Addiction to heroin is a -40-point disadvantage.

Illness

Maladies and strange diseases may affect adventurers in far-off lands . . . or even at home. The search for a cure – whether for the Princess' wasting disease, an alien plague, or a terrorist's bioweapon – is a wonderful plot device. The invention of diseases is an excellent opportunity for the GM to exercise a morbid sort of creativity.

Magical or technological items, the Resistant advantage (p. 80), and high HT can all protect you from disease. Risks are greatest in warm, moist areas. If you catch something, you won't know until the symptoms start to show . . . *the GM* makes your roll to avoid it!

Disease

Most diseases are caused by microorganisms and spread by infected people or animals – but some have other causes!

News about disease-ridden areas travels fast; a successful Current Affairs roll can alert adventurers to the presence of disease in a region. Spotting locals suffering from symptoms requires a Perception-based Diagnosis or Physician roll. And in an area where *animals* are carrying a disease that people can catch, investigators would need to examine an infected specimen and make a successful Veterinary roll to realize the danger.

Defining a Disease

Diseases are defined in much the same way as poisons (see *Poison*, p. 437). For each disease the PCs encounter, the GM should specify:

Vector: How the disease spreads. Diseases are generally blood, contact, digestive, or respiratory agents. These terms mean just what they do for poisons; see *Delivery* (p. 437).

Resistance Roll: The HT roll to avoid the disease. Anyone exposed must roll, possibly at a penalty. Most diseases allow a roll at HT to HT-6. The *means* of exposure can modify this roll; see *Contagion* (p. 443). On a success, the victim does not contract

the disease. On a failure, he does, but he gets further rolls – once per "cycle" – to throw off the disease.

Delay: This is the incubation period – the time between initial exposure to the disease and the appearance of the first symptoms in those who fail to resist. This is 24 hours for a "generic" disease, but can vary considerably for real-life diseases.

Damage: The disease's effects in game terms. This is typically 1 point of toxic damage, but it might be higher – up to 1d – for virulent diseases. DR does not protect against disease! Symptoms (fever, sneezing, coughing, spots, rash, etc.) appear after the subject starts to suffer injury. Injury from disease will *not* heal naturally until the victim makes his HT roll to recover!

Cycles: Like a cyclic poison, a disease damages its victim at regular intervals until he makes a HT roll *or* a maximum number of cycles passes. The "default" interval between HT rolls is one day. The number of cycles varies with the deadliness of the disease; for instance, a potentially fatal disease might only inflict 1 HP per cycle but endure for 20-30 cycles.

Symptoms: A disease can cause attribute penalties, temporary disadvantages, etc. after the victim loses a specified fraction (typically 1/3, 1/2, 2/3, or all) of his HP to it.

Contagion: Some diseases are mildly or highly contagious – although sometimes not until after the incubation period.

Most diseases are caused by microorganisms and spread by infected people or animals – but some have other causes!

The combination of resistance roll, damage, and cycles determines "deadliness." By carefully selecting these statistics, the GM can distinguish between a virulent but mild flu that ends in a day or two (24-hour delay, HT-2, 1 point of toxic damage, 12-hour interval, six cycles) and a slower but usually fatal disease (72-hour delay, HT-5, 1 point of toxic damage, daily interval, 30 cycles).

Diagnosis

Once the symptoms of a disease become apparent, identification requires a successful roll against Diagnosis or Expert Skill (Epidemiology) – or Veterinary, for an animal illness. This cannot identify a totally new illness, but a good roll might give enough information to allow treatment.

Treatment

Appropriate remedies – herbs, drugs, etc. – can provide a bonus to the cyclic HT rolls to shake off certain diseases. At TL6+, antibiotics (e.g., penicillin) give +3 to recover from most bacterial diseases. At *any* TL, a physician's care provides the same bonuses to recover from disease that it gives to recover from injuries (see *Medical Care*, p. 424).

However, some diseases are drug-resistant, in which case ordinary medicine *gives no bonus*. At TL7+, drug treatments can often mitigate the *effects* of such illnesses – usually by reducing damage or lengthening interval – but these aren't cures. Radiation treatment, gene therapy, nanotech, magic, and psi might still work, however.

Immunity and Susceptibility

Differential Susceptibility: Members of a given ethnicity, sex, or race may be more or less susceptible to a particular disease. For instance, the GM might decide that dwarves are *immune* to the Purple Shakes, and that elves get +2 on their HT rolls against it . . . but that the mortality rate among male giants is 100% unless they are treated within two days. A successful Diagnosis or Physician roll reveals differential susceptibility, if applicable.

Natural Immunity: Some individuals are simply immune to a specific disease. If the GM rolls a 3 or 4 for your *first* attempt to resist a disease, you are immune! He should note this fact and not tell you – under normal circumstances, you have no real way of knowing about your immunity.

Contagion

If you enter a disease-ridden area or encounter a disease carrier, make a HT roll at the end of the day to resist the disease. On a failure, you catch the disease! Modifiers to this roll include the disease's basic virulence modifier and the *least advantageous* applicable modifier from this list:

Avoided all contact with possible victims: *+4.*
Entered dwelling or shop of victim: *+3.*
Spoke with victim at close quarters: *+2.*
Touched victim briefly: *+1.*
Used victim's clothes, blankets, etc.: *+0.*
Ate victim's cooked flesh (animal, we hope!): *+0.*
Ate victim's raw flesh (ditto!!): *-1.*
Prolonged contact with living victim: -2.
Kissing or other intimate contact with victim: -3.

Proper precautions – masks, antiseptics, etc. – provide a bonus *to those who know and understand them.* The GM should consider limiting such measures to PCs from cultures that understand the germ theory of disease (late TL5).

Acquired Immunity: Anyone who survives a given disease may be immune in the future. This depends on the illness. You only catch measles once, for instance – but mumps can come back over and over.

Vaccination: Vaccination won't cure disease, but it provides almost certain immunity. At TL5, vaccines exist for a few diseases – notably smallpox – but aren't widespread. At TL6+, new vaccines appear constantly, and most can be stored for long periods of time, like other medicines. Developing a new vaccine is difficult and time-consuming; use the rules under *New Inventions* (p. 473), rolling against Bioengineering skill. At TL10+, exotic treatments (e.g., nanomachine colonies) can give individuals or entire societies the Resistant to Disease advantage.

Infection

A microorganism that attacks open wounds may cause an "infection." Infections are possible anywhere, but some places (especially jungles) may harbor especially severe forms of infection.

Open wounds treated with antibiotics (TL6+) never become infected except on a critically failed First Aid or Physician roll. People wounded under less-than-clean circumstances (GM's decision) *and* who do not receive treatment must make a HT+3 roll, modified as follows:

Ordinary "clean" dirt in wound: +0.

Dung or other infected matter in wound: -2.

Locale harbors a special infection: -3.

These modifiers are *cumulative*, and replace those listed under *Contagion* (p. 443).

On a failure, the wound is infected. Treat this as any other disease. A typical infection requires a daily HT roll, modified as above, with failure indicating the loss of 1 HP. Most infections progress until the victim either makes a HT roll, ending the infection, or takes so much injury that he dies.

Treatment with antibiotics (TL6+) gives +3 to HT rolls. This usually halts the infection before serious injury can occur.

If drugs are unavailable, or if the patient doesn't respond, a surgeon can cut out the infected tissue if the injury from infection hasn't progressed beyond a certain point. On the head or torso, this limit is the patient's HP/2. On a limb or extremity, it is the amount of injury required to cripple the body part. Surgery cannot help infections more severe than this.

The surgeon must make a Surgery roll. This inflicts 2d of injury to the head or torso, or amputates a limb or extremity. On a success, it cures the infection. On a failure, damage or amputation occurs but the patient remains infected.

Age and Aging

As discussed under *Age* (p. 20), you can start your adventuring career at any age that falls within your race's usual lifespan. However, unless you are Unaging (p. 95), you will experience gradual decline once you age past a certain point.

Beginning at age 50, make a series of "aging rolls" each year to see if old age is taking its toll. (If you did not note an exact birthday, roll on the first day of every game year.) At age 70, roll every six months. At age 90, roll every *three* months!

If you have Extended Lifespan (p. 53), each level *doubles* the age at which you must make aging rolls (50 years), the ages at which aging rolls become more frequent (70 and 90 years), and the time intervals between aging rolls (1 year, 6 months, and 3 months). If you have Short Lifespan (p. 154), each level *halves* these numbers.

Aging rolls are a series of four HT rolls – one for each of your four basic attributes, in the following order: ST, DX, IQ, HT. You may *not* use any form of Luck (p. 66) on these rolls.

Modifiers: Your world's medical tech level *minus 3*; e.g., -3 at TL0, or +4 at TL7, +2 if you are Very Fit, +1 if Fit, -1 if Unfit, or -2 if Very Unfit.

On a failure, reduce the attribute in question by one level. A critical failure, or any roll of 17 or 18, causes the loss of *two* levels. *Exception:* If you have Longevity (p. 66), treat any roll of 16 or less as a success, and treat a 17 or 18 as an ordinary failure – and if your modified HT is 17+, only an 18 fails!

When you lose an attribute level to age, reduce your point value accordingly. Reduce all secondary characteristics and skills based on that attribute to reflect its new level. For instance, if aging reduces your IQ by one, your Perception, Will, and skills based on any of those three quantities also drop by one. If any attribute reaches 0 from aging, you die a "natural" death.

At the GM's option, you may lose advantages or gain disadvantages of equivalent point value instead of losing an attribute point. For example, your Appearance could decline, or you could gain Hard of Hearing.

Artificial Youth

In some settings, magic or technology can halt or reverse aging. Should you become younger through any means, you regain all attribute levels lost between your new age and your old one. This simply increases your point value; you do not have to "buy back" the recovered attribute levels. Even without magic or high technology, you can spend earned character points to raise your attributes to combat aging.

I'm 37. I'm not old.
– Dennis,
Monty Python and the Holy Grail

Chapter Fifteen

Creating Templates

The GM is responsible for establishing which professional, social, and racial origins are (and *aren't*) appropriate for PCs. No GM can hope to anticipate every possible character concept, but a *good* GM shares his expectations with his players and helps those who are struggling for ideas. One effective way to do this is to provide the players with a set of "templates": collections of traits that typify the kinds of characters that are likely to figure prominently in the campaign.

This section gives rules for template *design*, and is intended for GMs. It assumes you have read the rules for template *use* in Chapter 7.

Character Templates

A "character template" is a carefully structured list of the attribute levels, secondary characteristics, advantages, disadvantages, and skills the GM feels a PC should possess to fill a particular professional, social, or dramatic role in the campaign. The GM calculates all point costs in advance and gives the results with the template, reducing the amount of math involved in character creation.

The main purpose of a character template is to prevent new players from overlooking vital abilities when choosing from among all the options in Chapters 1-6. The secondary goal is to accelerate character design. Thus, a template should list only necessary traits – not everything that *might* fit. The player should always have room to customize his PC!

How GURPS Works: Character Templates Aren't Rules!

Character templates are not rules. They are just a character-design aid with *no effect* on point costs, success rolls, NPC reactions, character development, or any other aspect of game play. The traits on templates are *suggestions* as to what abilities a hero will need to fill his role in the game world. Make sure your players know this! They should feel free to customize or alter templates, or to create characters without using templates at all.

Types of Character Templates

Most character templates fall into one of the general categories below – a few will fall into more than one. There is no harm in mixing PCs built using different classes of templates within a single campaign.

Cultural Templates

Cultural background is a powerful defining concept in many settings. For instance, Alexander the Great was first and foremost a Macedonian, and this identified him throughout his adventures. A cultural template might specify the genetic traits of a closed breeding group, skills taught to all members of a culture, or the beliefs and prejudices of a given tribe, nation, or religion. It will often include Cultural Familiarity and Languages.

Character Templates and Player Perceptions

The character templates you offer your players will affect their view of the game world and the type of campaign you intend to run. Suppose you are planning a fantasy campaign. If you present only thief and warrior templates, your players will justifiably conclude that you intend to run a freebooting campaign set in a world where rough-and-tumble "professional adventurers" are common. But if you also include templates for farmers, herbalists, and minstrels, your players may infer that you intend a more staid campaign, set in a quasi-medieval world. Make sure your template list sends the right message!

Always make clear when templates are for PCs and NPCs alike – and when they *aren't*. Players usually assume that the abilities listed on templates reflect status quo in the game world. For instance, they will expect *enemy* thieves and warriors to have certain abilities . . . and spend their points and cash to prepare accordingly. If this assumption proves costly or fatal, you might end up with confused or angry players!

Finally, design your templates as a complementary set. If some templates outshine others, or are clearly of lower quality, the players might feel that you favor those who play certain character types – even if that is not actually the case.

Occupational Templates

Someone who does a certain job (e.g., a physician or a mechanic) should have the necessary job skills – see *Jobs* (p. 516). Not all *occupations* are *jobs*, however; you could create occupational templates for hereditary nobles, idle rich, slaves, students, etc. These latter templates might include Duties, codes of conduct (see *Self-Imposed Mental Disadvantages*, p. 121), and "entrance requirements." All occupational templates should suggest Wealth and Status appropriate to the occupation, and should specify attribute levels and advantages that would lead to success at – or successful adaptation to – that career.

Dramatic Templates

A dramatic template defines a character's role in the plot – often in terms of an archetype such as "wise man" or "trickster." Some roles are genre-specific ("screaming victim" is rare except in horror, for instance); others are universal (e.g., "femme fatale"). The dramatic template ensures that the PC has the traits he needs to advance the plot, *regardless* of his exact occupation or culture. This type of template attempts to define personality as much as ability; therefore, it often includes more mental disadvantages than other kinds of templates.

Concept

A character template is a partially built character. To design it, you need a "concept" – a clear idea of what it represents and where it fits in – just as for a fully realized character (see *Character Concept*, p. 11). Decide on the type of template you are designing and what role it will fill, and then visualize which traits would best meet the demands of that role in your campaign. Use your knowledge of the game world to help you here!

Example: We shall construct a "heroic knight" template for a fantasy campaign. This template is both dramatic (the "heroic" part) and occupational (the "knight" part). We could create separate templates for each aspect – or even treat one as a "lens" on the other (see *Lenses*, p. 449) – but we have chosen to keep things simple. We decide that a heroic knight should be strong, honorable, a wise leader, and a skilled warrior.

Flexibility

The concept behind a template should be sufficiently flexible that the player can easily individualize his character. Leave enough creative "space" that the player is not stuck playing a stereotype. There are two useful measures of flexibility: the number of abilities on the character template (its degree of detail) and the extent to which those abilities use up the player's "budget" for character creation (its point cost).

Degree of Detail

A "dense" character template includes *many* traits. It defines a particular role precisely . . . so precisely that it can rob a PC of individuality. A "sparse" template makes a few suggestions, perhaps only a skill or two. It makes the resulting PC easier to customize, but leaves inexperienced players wondering, "What's my role?" The secret is to strike a balance between the two: don't try to give the template every trait that might fit – just focus on the traits that *define* the role!

Template Cost

The more expensive the template, the more points you're spending for the player. Keep the campaign power

level in mind and come in under the point budget for PCs, leaving enough unspent points (and enough unused points in disadvantages, if you are enforcing such a limit) that the player can customize his character. If a template absolutely *must* tie up a lot of points, make it "interactive" (see p. 449).

Example: We'll design our heroic knight for a 150-point game with a -75-point disadvantage limit. This means we'll try to spend fewer than 150 points total, and take less than the full -75 points of disadvantages.

The character templates you offer your players will affect their view of the game world and the type of campaign you intend to run.

Selecting Traits

The next few sections offer concrete advice on selecting the actual traits that appear on character templates.

Attributes

The 9-13 range is suitable for most characters. "Adventuring" templates should have one or two above-average scores, but those for most normal jobs should leave everything at 10. Remember that an 11 or 12 is noteworthy, and that a 13 or 14 is exceptional – see *How to Select Basic Attributes* (p. 14). Dramatic templates are a special case, as it often serves the purposes of drama for an archetype to have extreme attributes. Still, try to avoid excessive stereotyping.

Example: We see our knight as a capable warrior, so we give him superior physical attributes: **ST** 12 [20], **DX** 12 [40], and **HT** 12 [20]. To reflect his wisdom and resolve, we give him **IQ** 11 [20] – he is supposed to be a wise leader, not a genius. This comes to 100 points.

Secondary Characteristics

It is usually best to leave Hit Points, Will, Perception, Fatigue Points, Basic Speed, and Basic Move at their base values. Tweaking these numbers is likely to confuse new players. Unless the concept absolutely requires exceptional talent in one of these areas (e.g., high Perception for a detective), just choose attributes that give fair secondary characteristics and leave fine-tuning to the adventurous player.

Advantages

For occupational templates, list the job's requirements (e.g., Languages for a translator) or benefits (e.g., Clerical Investment for a priest). Other possibilities include "tricks of the trade" (e.g., Combat Reflexes for a soldier) and talents that would lead a person to select this particular career (e.g., Night Vision for a thief).

For cultural templates, also consider genetic and cultural traits (e.g., "All Northerners have Temperature Tolerance"), as well as Cultural Familiarity (p. 23), Languages (p. 23), and Social Regard (p. 86).

For dramatic templates, include traits that are invariably found in literary and cinematic examples of the archetype (e.g., Charisma or Handsome appearance for a swashbuckler).

Justify each advantage using an argument similar to one of those above – which means that *most* advantages on a character template should be learned or social in nature. Also, try to avoid unusual advantages. If every single character of a given type has a rare advantage, it will dilute the value of the advantage and possibly strain the suspension of disbelief.

Example: A knight *requires* Status 2 [10]. His Wealth should be at least Comfortable [10], to cover his cost of living and buy his expensive equipment. This costs 20 points.

Disadvantages

For the most part, follow the advice given for advantages. In the case of occupational templates, avoid disadvantages that are liable to inhibit job performance (e.g., Honesty for a thief). Focus instead on those that are likely to *help* with the chosen career (e.g., Fat for a sumo wrestler) and those that are *expected* (e.g., Disciplines of Faith or Vows for a priest). Some professions tend to *lead to* disadvantages, a few of which might be so common that they merit a place in the template (e.g., Social Stigma for a thief).

Dramatic templates are often defined almost entirely by their mental disadvantages, and frequently have "good" disadvantages or tragic flaws – see *Disadvantages for Heroes* (p. 119).

Example: Our knight owes fealty to his liege lord, so we give him Duty (Liege lord, 9 or less) [-5]. Since he's a *heroic* knight out of fantasy, we also give him Code of Honor (Chivalry) [-15], Honesty (6) [-20], and Vow (Never refuse a request for aid) [-15]. This comes to -55 points.

Skills

Pick the skills needed for the character to be competent at the role the template describes. Avoid excessive numbers of skills, but include *all* necessary skills, a few skills that are complementary but not vital, and perhaps one or two skills that serve mostly to provide background color.

When assigning skill levels, assume that skill 12 suffices for "safe" jobs (e.g., accountant or librarian) and that skill 14 is plenty for "risky" jobs (e.g., assassin or surgeon) – including most "adventuring professions." Save skill 16+ for those who truly stand out in their field; don't water down the value of high skill by making it commonplace.

Of course, these guidelines assume relatively realistic characters. Many larger-than-life heroes have dozens of skills at high levels. It is up to the GM whether he wishes to encourage this pattern of skill buying in his campaign.

Listing Skills

When listing skills, include all relevant information in the following format:

***Skill Name** (Difficulty)* Relative Level **[Point Cost]**-Actual Level

For instance, "Broadsword (A) DX+2 [8]-14." This might look odd now, but it makes things much more transparent when the time comes to customize the character!

It can also be helpful to break down skill listings as follows:

Primary Skills: Vital skills, at level 12+ – or at 14+, if they are likely to matter in life-or-death situations.

Secondary Skills: Helpful skills that it's hard to imagine the character not having, at level 11+.

Background Skills: Anything else that fits, chosen for descriptive reasons rather than utility, usually at a lower level than primary and secondary skills.

Examples: Our knight is an adventurer first, so we make his primary skills Broadsword-14 [8], Lance-14 [8], Riding (Horse)-12 [2], and Shield-14 [4]. We make his leadership abilities secondary: Leadership-11 [2] and Tactics-11 [4]. Finally, we add Armoury (Melee Weapons)-10 [1] and Heraldry-10 [1] as background skills, to cover his knowledge of arms and armor. Total cost is 30 points.

Setting the Price

Total the cost of everything on the character template. This is the "template cost": the number of points the player must pay to purchase the template.

If template cost comes to more than 90% of the campaign's starting points (see *Starting Points*, p. 10), players are liable to find it restrictive. To remedy this, lower attribute levels, remove noncritical advantages and skills, or add a few appropriate disadvantages. Alternatively, you can try to optimize the template (see below).

If you *still* can't get template cost down to a reasonable level, it is likely that the starting points you've selected are less than ideal for the heroes you see working well in the game world. It might be a good idea to revise the campaign power level! See *Power Level* (p. 487) for advice.

Example: Our knight has spent 100 points on attributes, 20 on advantages, -55 on disadvantages, and 30 on skills. That's 95 points, which is well within the recommended 90% limit for a 150-point campaign (135 points).

Optimization

Experienced players usually attempt to minimize the point cost and maximize the effectiveness of their characters. New players are unlikely to do so; therefore, it is a good idea to optimize templates so that characters built with them are not less efficient than scratch-built PCs. There are two main methods for doing this:

1. Select attribute levels that minimize the cost of the chosen skills. For instance, an Average skill at DX+2 level costs 8 points; six such skills would cost 48 points. An Average skill at DX+1 costs 4 points; six skills at this level would cost only 24 points. By lowering six skills from DX+2 to DX+1, you could free up 24 points – and if you then spent 20 points on DX, you could raise DX by one level, regain the original skill levels, *and* save 4 points!

2. Add advantages that give skill bonuses at discount rates – notably Talents (see p. 89).

If you have trouble justifying this, remember: templates are blueprints for *adventurers* – exceptional characters built with more points than the average person – so high attributes and rare advantages are going to be more common than in the general population.

Writing it Up

Use the following format for the final character template (illustrated here using our heroic knight):

Heroic Knight

95 points

You are a brave knight out of fantasy or fairy tales – strong, honorable, a wise leader, and a skilled warrior.

Attributes: ST 12 [20]; DX 12 [40]; IQ 11 [20]; HT 12 [20].

Secondary Characteristics: Dmg 1d-1/1d+2; BL 29 lbs.; HP 12 [0]; Will

Discounts

Avoid the temptation – often carried over from other RPGs – to offer a discount on template cost. A character built using a template should be *indistinguishable* from an equivalent character designed from the ground up.

Adjusting for Player Experience

When designing character templates, be sure that they take into account the character-creation habits of your experienced players. For instance, if all their warriors have Combat Reflexes and all their wizards have Magery 3, your templates should follow suit – even if the "typical" warrior or wizard in the setting lacks this level of talent. This puts the characters of inexperienced players who use your templates on an equal footing with those of more experienced players.

11 [0]; Per 11 [0]; FP 12 [0]; Basic Speed 6.00 [0]; Basic Move 6 [0].

Advantages: Status 2 [10]; Wealth (Comfortable) [10].

Disadvantages: Code of Honor (Chivalry) [-15]; Duty (Liege lord; 9 or less) [-5]; Honesty (6) [-20]; Vow (Never refuse a request for aid) [-15].

Primary Skills: Broadsword (A) DX+2 [8]-14; Lance (A) DX+2 [8]-14; Riding (Horse) (A) DX [2]-12; Shield (E) DX+2 [4]-14.

Secondary Skills: Leadership (A) IQ [2]-11; Tactics (H) IQ [4]-11.

Background Skills: Armoury (Melee Weapons) (A) IQ-1 [1]-10; Heraldry (A) IQ-1 [1]-10.

Customization Notes

Give the player a few thoughts on how he can make his character different from other PCs built using the same character template. For instance, you might include a brief list of useful traits to buy with leftover points, advice on how to flesh out the player-defined traits in the template (e.g., self-imposed mental disadvantages, Patrons, and the details of Ugly appearance), or thoughts on appropriate or necessary equipment.

Example: We mention that the player should specify his knight's coat of arms and liege lord. He also needs weapons, armor, and a mount! Since Wealth (Comfortable) cannot cover all that, we suggest using a few leftover points to purchase additional Wealth – or to buy his liege lord as a Patron who can provide these things.

For an occupational template, this is the place to note the job roll, monthly pay, and wealth level for the job – see *Jobs* (p. 516). Job *prerequisites* should appear in the template; there is no need to reiterate them here.

Additional Options

Character templates need not be "set pieces." With a little extra effort, you can greatly expand the versatility of templates by building in tools that let the player customize his character in the course of buying the template.

Lenses

You can treat common variations on templates as "lenses" through which to view the basic design. A lens is a package of advantages, disadvantages, and skills that adds to the base template, changing its emphasis. It might be specific to just one template or applicable to several (or *all*) templates in your campaign. Some lenses are mutually exclusive; others can "stack."

A lens should not add traits that oppose or that are redundant with those on the base template(s). If this is inevitable, explain what to do when conflict occurs. A lens should also be compatible with all other lenses the player can select at the same time (but don't worry about mutually exclusive lenses).

The player adds the cost of any lenses selected to the cost of the base template and writes down both sets of abilities.

Example: It is possible to represent the "heroic knight" in our example as a "warrior" template modified by "heroic" and "knight" lenses:

Warrior

101 points

You are a fantasy warrior – a barbarian, knight, swashbuckler, or someone else who lives by the sword.

Attributes: ST 12 [20]; DX 12 [40]; IQ 10 [0]; HT 12 [20].

Secondary Characteristics: Dmg 1d-1/1d+2; BL 29 lbs.; HP 12 [0]; Will 10 [0]; Per 10 [0]; FP 12 [0]; Basic Speed 6.00 [0]; Basic Move 6 [0].

Skills: Armoury (Melee Weapons) (A) IQ-1 [1]-9; Shield (E) DX+2 [4]-14; and two weapon skills, each (A) DX+2 [8]-14.

Lenses

Heroic (-9 points): You are wise, honorable, and a leader of men. Add +1 IQ [20], Honesty (6) [-20], Vow (Never refuse a request for aid) [-15], Leadership (A) IQ [2], and Tactics (H) IQ [4].

Knight (+3 points): You are an invested knight, with all the attendant privileges and duties. Add Comfortable [10], Status 2 [10], Code of Honor (Chivalry) [-15], Duty (Liege Lord, 9 or less) [-5], Heraldry (A) IQ-1 [1], and Riding (Horse) (A) DX [2].

Interactive Templates

Along with fixed character traits, you may wish to include a number of choices with identical point costs. These can be specific (e.g., High Pain Threshold *or* +1 ST; Chemistry-14 *or* Mathematics-14) or general (e.g., any DX/Average weapon skill at 15; any three IQ/Hard sciences at 14), as long as the point cost is the same. A good compromise is to set aside a pool of points that the player can spend on a specific list of options however he sees fit.

Once you are comfortable with template design, consider using this option for all your templates. It simplifies the player's choices without eliminating them *and* is an effective stepping-stone to unassisted character design. It is especially useful for mental disadvantages, because it gives the player more latitude in defining his character's personality.

Example: Not all knights use broadswords; many prefer the mace. On our heroic knight template, we could replace "Broadsword (A) DX+2 [8]-14" with "Axe/Mace *or* Broadsword, both (A) DX+2 [8]-14" and let the player choose.

We could also offer a choice of mental disadvantages. Instead of requiring Code of Honor, Honesty, and Vow, we could say: "A total of -50 points chosen from Charitable [-15*], Code of Honor (Chivalry) [-15], Honesty [-10*], Selfless [-5*], Sense of Duty [-2 to -20], Truthfulness [-5*], and Vow [-5 to -15]." Note how disadvantages with variable values offer a *range* of point costs, and how disadvantages that require self-control rolls are marked (*) to indicate that they might be at ×.5, ×1, ×1.5, or ×2 value, depending on the self-control number.

Racial Templates

The baseline character in ***GURPS*** is human, but nonhumans are common in many game worlds. The collection of traits that differentiate a nonhuman species from humanity is called a "racial template."

Unlike character templates, racial templates are not normally optional or customizable – every member of a species *must* purchase its racial template, exactly as written. Furthermore, racial templates are subject to a number of special rules that have ramifications in play, and may even include "hidden features" that can affect outcomes in the game.

Concept

Before building a racial template, you should develop a clear idea of what it is you are designing. A racial concept is *not* a character concept – you are creating an entire species, and must consider morphology, survival strategies (biological, technological, or magical), group behavior, and culture.

What Is a Race?

A "race" is normally a biological species – human, tiger, elf, Gray alien, etc. – but you need not limit yourself to this definition. A race might be a genetically engineered subspecies, a particular category of fantastic creature (for instance, "faerie" or "vampire"), or a specific make or model of construct (golem, robot, sentient computer program, etc.). What matters is that every member of the group possesses a common set of identifiable traits.

What Do They Look Like?

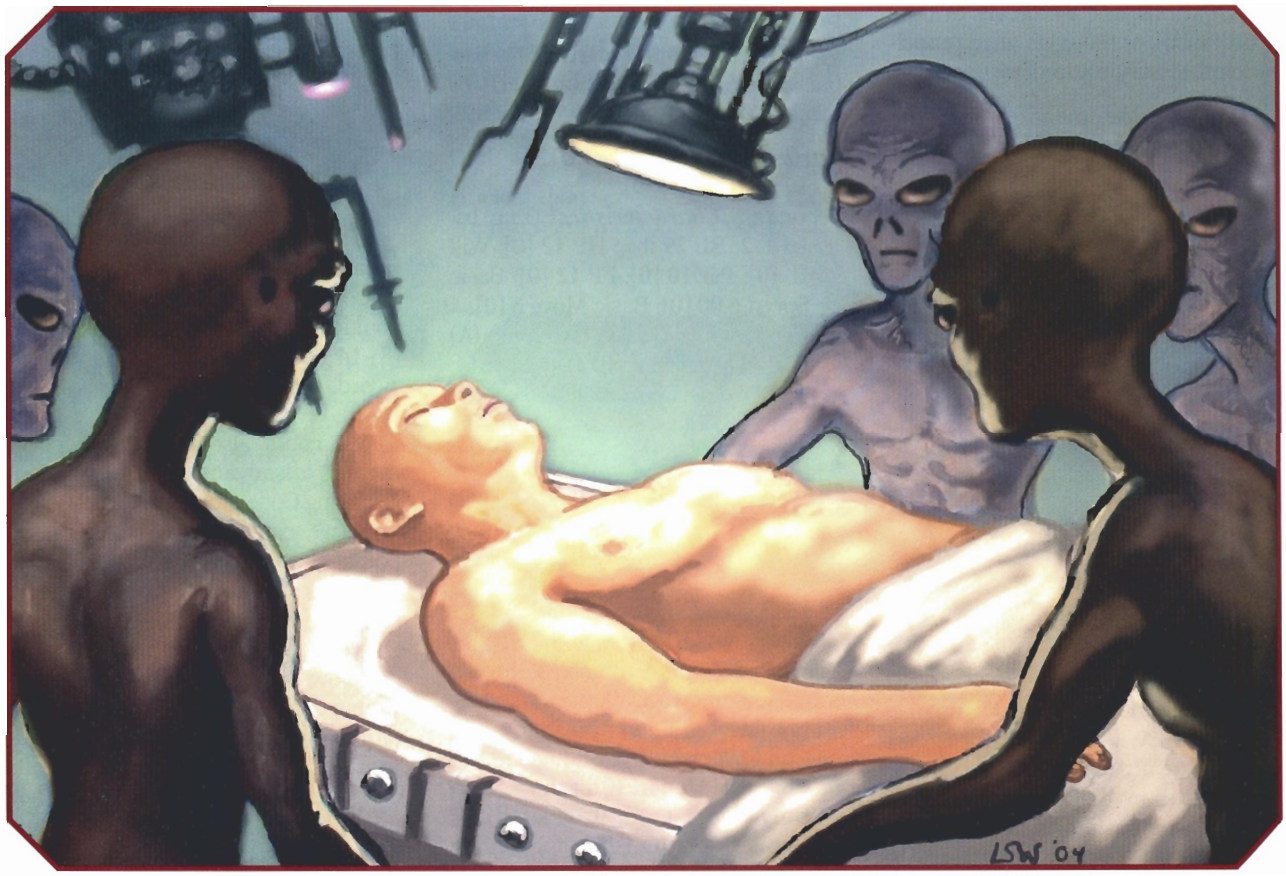
A race's appearance suggests many of its racial traits. For instance, a species with four arms needs to purchase Extra Arms, because it has two more arms than a human, which is an advantage. Likewise, a species with one eye should have One Eye, as its lack of binocular vision puts it at a disadvantage next to a human.

Be sure to distinguish between purely cosmetic features and those that actually affect play. Outward appearance is often just a "special effect," and special effects should not cost points – see *Features and Taboo Traits* (p. 452). Only genuine differences in *function*, relative to a human, call for definition in terms of attributes, advantages, and disadvantages. Assigning point values to racial characteristics unnecessarily is a sure-fire way to make a multiracial campaign confusing, if not unbalanced.

How Do They Think?

Decide how members of the race act, and lend some thought to the race's dominant cultural background. These things determine the race's mental traits, including racial skills. Here again, be careful to distinguish features that affect play from those that do not.

The most challenging problem is to determine how the race *thinks*. This is crucial if you expect people to roleplay



members of the race! Humanity's two primary motivations seem to be sex and material comfort. Other races might not share these drives. Of course, any biological creature must feel *some* instinct to preserve its young and itself, or the race will vanish. Races that lack this drive would have psychologies that humanity would find truly alien.

Selecting Traits

A racial template consists of attribute modifiers, secondary characteristic modifiers, advantages, disadvantages, quirks, and skills that apply to *every* member of the race. A race may also have features that do not have a point cost but that do have in-game effects.

Most of the *mental* and *physical* traits in Chapters 1-3 are suitable as racial traits. More rarely, *social* traits are appropriate – for instance, an entire race might enjoy Social Regard or suffer from Social Stigma.

As the GM, you are free to assign exotic (🌹) and supernatural (🌠) traits to racial templates as needed – even if such traits are otherwise forbidden (in which case nonhumans are likely to be the *only* ones who have such traits). A few traits explicitly note that they are *reserved* for racial templates, and cannot occur otherwise.

In all cases, make sure that the traits you choose are in line with the racial concept and, more importantly, *make sense*.

Racial Attribute Modifiers

If the ST, DX, IQ, or HT of an *average* member of a race differs from the human norm of 10, that race has a "racial attribute modifier." This costs ±10 points per ±1 to racial average ST or HT, or ±20 points per ±1 to racial average DX or IQ.

A member of a race with such modifiers pays for his personal scores as usual, and *then* applies his racial modifiers to find his final scores.

Example: A racial +10 to ST costs 100 points, while a racial -1 to IQ costs -20 points. A racial template with these modifiers notes "ST+10 [100]" and "IQ-1 [-20]."

A member of this race buys a personal ST 9 [-10], IQ 14 [80]. He then applies his racial attribute modifiers: ST+10 gives ST 19, and IQ-1 gives IQ 13.

Racial Secondary Characteristic Modifiers

These work much as do racial attribute modifiers. The main difference is the point cost: ±1 to HP costs ±2 points; ±1 to FP costs ±3 points; and ±0.25 to Basic Speed or ±1 to Will, Perception, or Basic Move costs ±5 points.

Example: A racial -0.75 to Basic Speed would cost -15 points. A racial template with this modifier would note "Basic Speed-0.75 [-15]."

A member of a race with such modifiers calculates his basic secondary characteristics from his attributes as usual, *after* applying all racial attribute modifiers. He may buy these characteristics up or down, as usual. After that, he applies racial secondary characteristic modifiers to find his final scores.

PC Races vs. NPC Races

A "player character race" is one that the PCs can belong to at the time of character creation. A "nonplayer character race" is one reserved for NPCs under the GM's control. There is no rule distinction between a PC race and an NPC race. As the GM, you are free to assign a race to either category – or even to move a race from one category to the other during the course of the campaign.

Try not to be too restrictive, however. ***GURPS***, being a generic system, has rules for most situations. This makes it feasible to allow PCs to belong to races reserved for NPCs in other games (ghosts, monsters, robots, etc.) if the players and GM are up to the roleplaying challenge.

Player-Created Races

It is the GM's job to design the racial templates for his campaign. The rules given here have fewer arbitrary limitations and balancing factors than do those for creating individual characters, because this is intended to be a GM's system, and the GM is free to decide what is balanced in his campaign.

That said, the adventurous GM might allow an especially good player or group to design races for their characters. This can be a major time-saver for the GM in a campaign that calls for a plethora of nonhuman species!

A few tips for GMs who wish to allow player-created races:

- Watch out for abuse. The lack of balancing factors in these rules makes it possible to create a race that has a significant advantage in effectiveness over the human race. Do not allow such races – at least, not as PCs.
- Do not allow abilities (or *combinations* of abilities) that you do not want in the PCs' hands, however balanced they may be. In particular, keep an eye on exotic and supernatural traits. If a trait is strictly off-limits to *all* PCs, then the race of the PC should be unimportant.
- Player-generated races work best in game worlds that already have *many* different races, because "yet another race" will rarely upset the campaign. Be sure to have a few ready-made PC races on hand for players who do not wish to create their own, however – and to serve as examples for those who do.
- Be leery of player-created *NPC* races. In most game worlds, NPC races are supposed to be somewhat mysterious. Mystery is hard to maintain when the creator is a member of the party!

Example: A member of a race with DX+2, HT+1, and Basic Speed-0.75 buys a personal DX 12 [40], HT 12 [20]. His racial attribute modifiers make this DX 14, HT 13. These attributes give Basic Speed 6.75. Next, he buys his Basic Speed up to 7.75, for 20 points. At the very end, he applies his racial Basic Speed-0.75 to get a final Basic Speed 7.00.

Racial Advantages and Disadvantages

A nonhuman race could conceivably possess almost any advantage or disadvantage that an individual could . . . within reason. When in doubt, the GM should exercise common sense.

Traits related to build – Skinny, Overweight, Fat, Very Fat, Dwarfism, and Gigantism (see *Build*, p. 18) – are relative to the *racial* norm. They're valid for individuals, not races. To create an entire race that is smaller or larger than humanity, assign an appropriate Size Modifier (see *Size Modifier*, p. 19). This has no point cost – the advantage of longer reach cancels out the disadvantage of being a large target, while the disadvantages of being short balance the advantage of being hard to hit. Individual members of such races can have any build; e.g., an ogre with racial SM +1 could take Dwarfism and have a personal SM of 0.

Note that racial disadvantages do *not* count against the campaign disadvantage limit (see *Disadvantage Limit*, p. 11). This limit applies only to *personal* disadvantages. For instance, a player in a campaign with a -75-point disadvantage limit may take up to -75 points in disadvantages, regardless of which race he selects for his PC.

Racial Quirks

It can be useful to assign a few quirks on a racial basis to define a race's minor disadvantages or personality traits. Use these sparingly, however – players are obligated to roleplay their quirks, and too many racial quirks can result in a complicated, unplayable character.

Racial quirks do not count against the normal limit of five quirks.

Features and Taboo Traits

Many traits *distinguish* a race without actually increasing or reducing its capabilities. Such traits cost 0 points, and fall into two categories:

Features: A "feature" is just a note on how the race differs cosmetically or physiologically from humanity when that difference does not grant an advantage or a disadvantage. For instance, a human subspecies genetically modified to lack an appendix has a feature; so does a fantasy race that bears a magical mark from birth. Faster and slower maturation are features as well. A race's native environmental conditions are also features, if they differ from the human norm (humans are adapted to 1G of gravity, have a temperature "comfort zone" of 35° to 90°, and breathe 78% nitrogen/21% oxygen at 1 atm of pressure). A race that can tolerate a *broader* spectrum of conditions than humanity has an advantage, however!

Any biological creature must feel some instinct to preserve its young and itself, or the race would vanish. Races that lack this drive would have psychologies that humanity would find truly alien.

Taboo Traits: A specific advantage, disadvantage, or skill might be off-limits ("taboo") for the race – that is, no member of the race can possess that trait. Given the number of possible choices, and the small odds that a given character would actually take a particular trait, this is not considered a disadvantage. Often, "taboo traits" result from racial disadvantages; for instance, No Legs (Sessile) logically forbids movement-related traits. To keep a race fun to play, do not assign excessive numbers of taboo traits, and give a plausible cultural, psychological, or physiological reason for each one.

Racial Skill Bonuses and Penalties

A race with a particular gift for a skill or a set of skills has an advantage, while a race that is unusually inept has a disadvantage.

Racial talent for *one skill* costs 2 points for +1 to skill, 4 points for +2, or 6 points for +3 (the maximum bonus allowed). Write this as, for instance, "+1 to Forgery [2]" or "+3 to Fast-Talk [6]." This trait does *not* actually grant the skill – it gives a bonus whenever a member of the race rolls against that skill or its default.

Treat a racial knack for a *group of related skills* as a Talent (see p. 89). Each +1 to those skills costs 5 points for six or fewer skills, 10 points for seven to 12 skills, or 15 points for 13 or more skills. The maximum bonus is +4. If this is not a standard Talent, note which skills get the bonus. (Keep an open mind – some unusual things might be "closely related" for a race that thinks nothing like humanity!)

Racial ineptitude at *one skill* is a flat -1 point for -4 to skill. This is just a racial Incompetence quirk (see p. 164), and is subject to all the usual rules for Incompetence. To keep things balanced, no race can be incompetent at more than five individual skills (-5 points), and the affected skills must be important in the game world to qualify for points.

Evaluate racial incompetence at a *group of related skills* like a Talent, but put a minus sign in front of the cost. For instance, -2 with 7-12 skills would be a -20-point racial disadvantage. A race can have only one "group incompetence."

The bonuses and penalties above apply to *all* specialties of any affected skills.

Effects of Experience: When an individual improves a racially modified skill, disregard the racial modifiers and calculate the new level based solely on the points he spent. Apply the racial skill bonus to his *final* skill level. For example, a member of a race with +1 to Fast-Talk would pay only 1 point to have Fast-Talk at IQ. If he wanted to improve Fast-Talk to IQ+1 later on, he would pay 1 more point.

Racially Learned Skills

A "racially learned skill" is an automatic level of proficiency acquired by every member of the race. It is usually innate or instinctive. For instance, a flying race might possess racial Flight skill, while a race with padded feet might have Stealth skill on a racial basis.

Price racially learned skills just as if an individual character were learning them; see the *Skill Cost Table* (p. 170). Write them in the format used on character templates (see *Listing Skills*, p. 448), calculating the final skill level based on the racial average attribute score. For instance, a race with DX+4, HT-1 would have racial average DX 14, HT 9, and would write "Flight (A) HT [2]-9" and "Stealth (A) DX+1 [4]-15." The *actual* skill levels that an individual member of the race enjoys vary according to his personal attribute scores.

Effects of Experience: Members of a race may improve racially learned skills just as they would any other skill. For instance, if a race has Flight at HT, it would cost an individual member of that race 2 points to increase his skill to HT+1.

Racial Magic

Many races of fantasy and horror are magical. Below are two possible ways to handle magical powers.

Advantages: Any advantage might stem from the race's magical nature as a "special effect" (see *Advantage Origins*, p. 33). Such advantages require mana to work. If regions without mana are common in the campaign world, apply the limitation "Mana Sensitive," worth -10%, to the cost of such abilities.

Racially Innate Spells: Every member of the race might have the inborn ability to cast one or more spells; see Chapter 5. *Ignore* the usual prerequisites and buy the spells using the rules for racially learned skills (above). Add racial Magery, if any, to the race's skill level. Magery is not required for racially innate spells – but without Magery, the race's magic only works in areas of high or very high mana (see *Mana*, p. 235). A race that can *only* cast racially innate spells pays the usual 5 points for Magery 0, but may buy Magery 1+ with a -40% Accessibility limitation: "Racially innate spells only."

Setting the Price

The point cost of a racial template called the "racial cost" is the sum of the point values of its constituent traits. Anyone who wishes to play a member of the race *must* pay its racial cost. If racial cost is 0 points or more, treat the template as an advantage; if racial cost is negative, treat it as a disadvantage. (It costs 0 points to play a human, but there is no need to note this, as characters are assumed to be human *unless* they buy a racial template.)

A template with a negative racial cost does *not* count against the campaign disadvantage limit, if any (see *Disadvantage Limit*, p. 11). Individual mental, physical, and social problems are as likely for members of low-powered races as they are for humans and members of high-powered races!

Players must normally purchase *all* elements of a racial template as a unit, and may only "opt out" of a given trait with the GM's permission. Opting out of an advantageous trait saves points, while opting out of a disadvantageous one costs points. In both cases, pay racial cost normally and note the changes separately – for instance, "No Infravision [-10]" or "No Bad Sight [25]." See *Omitting Racial Traits* (p. 262) for additional details.

Sub-Races

A "sub-race" is a sizeable portion of a race that differs significantly from the racial norm. Examples include extreme sexual dimorphism, true biological subspecies, half-breeds, and radical mutations (or even upgrades, in the case of robots).

Sub-races should share most of the parent racial template, but with a few important differences (and a matching adjustment to racial cost). Write up sub-races exactly as you would "lenses" for a character template – see *Lenses* (p. 449).

Filling in the Blanks

After finalizing any racial template, try to answer the following questions. The answers will help *you* present the race to the players and help *them* role-play members of that race!

- What do they look like? How big? How tall? What shape? What color? Do they have hair? What color? Do they have eyes? Do they have distinctive markings? Do they have hands or claws? What direction do their joints bend?
- Were they created or did they evolve? Where? What environmental pressures combined to give them their advantages and disadvantages?
- How do they live? How do they govern themselves? Are they gregarious or solitary in nature? If they are gregarious, do they favor large cities, small villages, or family groups?
- How do they think? Do they have a racial philosophy? Do they have a religion? Do they have *many* religions? How do they react in an emergency? Do they like new things, or are they complacent? Can they be trusted?
- How do they get along with others? Do they fight among themselves? How do they react to new races? Suspiciously? Enthusiastically? Do they trade with other races? Are there other races they particularly like or dislike?

Character Cost vs. Racial Strength

Many GMs will want to create at least a few races with powers far beyond those of normal humans. In game terms, this means a high racial cost. This may create an apparent contradiction in the campaign: "If these guys are so great, why don't they control the whole world?"

The most obvious answer is "They do!" There's *no* reason why humanity has to be the dominant race of the campaign. Mankind could be an insignificant minor race or an audacious upstart to the ancient civilizations of the nonhumans!

However, the GM needn't forsake superhuman races in an anthropocentric campaign. The factors that allow *individuals* to excel are quite different from those that allow one *race* to dominate another. An anthropocentric story or campaign usually assumes that humanity has several advantages, relative to other races, that would never show up on a character sheet.

Humans are prolific. A woman can easily bear six to 12 children in her lifetime; a man can father children with a huge number of women. Other races might be strictly monogamous, tied to a complex fertility cycle, or generally infertile, allowing humanity to dominate them through sheer numbers. This is borne out in nature, where extremely capable species – such as the dominant carnivores – inevitably have smaller populations than "lesser" species.

Humans are aggressive. They tend to want money, property, and power for its own sake. A pragmatic race might *let* the humans move in and assume the burden of running things! They might insist on a few basic rights, but not necessarily political power. Of course, an extremely powerful or supernatural race might pursue goals that humans cannot comprehend, leaving humanity to do as it pleases.

Humans are organized. A super-race might never need to band together for protection from nature as humanity's ancestors did. Such a race might be unable to withstand an organized human military campaign or political program. Indeed, such a race might find real economic and cultural benefit in accepting organization by humanity.

This discussion applies equally to extremely *low*-powered races vis-à-vis humanity. The members of a hive mind or primitive horde might be no match for us individually, but be more prolific, aggressive, and organized than we are as a race!

Chapter Sixteen
Animals and Monsters

An "animal" is any *nonsapient* natural creature; for instance, a rhinoceros or a tiger. A "monster" is any fantastic or unnatural creature – either sapient, like a dragon, or nonsapient, like a flesh-eating slime – that lacks a civilization. Both are considered *characters*, with racial templates (see Chapter 15) that show how they differ from human beings.

Since animals are normally nonsapient and have few or no skills, and since monsters are most often intended as adversaries for the PCs, the GM need not create them as fully fleshed-out characters. If the GM controls a creature, he can simply refer to its unmodified racial template – or just list a few combat statistics, if the thing is intended as an opponent.

However, animals and monsters intended as PCs *always* require full statistics. The GM might wish to create some animal and monster NPCs as fully realized characters, too. This is the difference between "a wolf" and "the canny old wolf that terrorized the village"!

Common Animals

Below are descriptions of a few commonly encountered beasts. Use these as guidelines when assigning statistics to animals not listed here.

Apes

Apes are intelligent – too intelligent to be really predictable. Animal Handling rolls are at -1 with such creatures. Apes attack in close combat by grappling and biting, rather than by punching or kicking.

Chimpanzee

A peaceful plant-eater. A chimp won't fight unless it or its young are threatened.

ST 11; **DX** 12; **IQ** 6; **HT** 12.
Will 10; **Per** 10; **Speed** 6; **Dodge** 9; **Move** 7.
SM 0; 140 lbs.

Traits: Arm ST +3; Bad Grip 2; Brachiator; DR 1; Sharp Teeth; Wild Animal.
Skills: Climbing-14.

Gorilla

A great ape.

ST 15; **DX** 12; **IQ** 6; **HT** 12.
Will 10; **Per** 10; **Speed** 6; **Dodge** 9; **Move** 7.
SM +1; 400 lbs.

Traits: As chimpanzee.
Skills: Climbing-14.

Bears

When making reaction rolls for bears, remember that grizzly, polar, and cave bears are mostly carnivorous and ill-tempered. *Any* mother bear with cubs will be aggressive: -3 to reactions!

A bear walking or running on four legs is a two-hex creature. When it stands on its hind legs to fight, it is a one-hex creature.

Black Bear

A small, omnivorous bear.

ST 14; **DX** 11; **IQ** 4; **HT** 13.
Will 12; **Per** 10; **Speed** 6; **Dodge** 9; **Move** 7.
SM 0; 300 lbs.

Traits: Blunt Claws; DR 2; Semi-Upright; Sharp Teeth; Temperature Tolerance 2; Wild Animal.
Skills: Brawling-13.

Grizzly Bear

ST 19; **DX** 11; **IQ** 4; **HT** 13.
Will 11; **Per** 10; **Speed** 6; **Dodge** 9; **Move** 8.
SM +1; 800 lbs.

Traits and Skills: As black bear, plus Bad Temper (9).

Polar Bear

ST 20; **DX** 11; **IQ** 4; **HT** 13.
Will 11; **Per** 10; **Speed** 6; **Dodge** 9; **Move** 7 (Water Move 3).
SM +1; 1,000 lbs.

Traits and Skills: As grizzly bear, plus Swimming-13.

Cave Bear

A prehistoric creature.

ST 23; **DX** 11; **IQ** 4; **HT** 13.
Will 11; **Per** 10; **Speed** 6, **Dodge** 9; **Move** 7.
SM +1; 1,400 lbs.

Traits and Skills: As grizzly bear.

Cats

Cats are only domesticated in the sense that they tend to hang around human settlements. It is a very rare trainer who can teach a cat a trick it doesn't feel like learning . . .

House Cat

A domestic feline, kept as a pet, familiar, or mouser.

ST 4; **DX** 14; **IQ** 4; **HT** 10.
Will 11; **Per** 12; **Speed** 6; **Dodge** 10; **Move** 10.
SM -3; 10 lbs.

Traits: Catfall; Combat Reflexes; Domestic Animal; Night Vision 5; Quadruped; Sharp Claws; Sharp Teeth.
Skills: Brawling-16; Jumping-14; Stealth-14.

Lion

A big, lazy cat, found in both plains and jungle. Lions hunt in small groups.

ST 16; **DX** 13; **IQ** 4; **HT** 11.
Will 11; **Per** 12; **Speed** 6; **Dodge** 9; **Move** 10.
SM +1 (2 hexes); 500 lbs.

Traits: DR 1; Laziness; Night Vision 5; Quadruped; Sharp Claws; Sharp Teeth; Temperature Tolerance 1; Wild Animal.
Skills: Brawling-15; Running-13.

Tiger

A solitary hunting cat, usually a jungle dweller.

ST 17; **DX** 13; **IQ** 4; **HT** 11.
Will 11; **Per** 12; **Speed** 6; **Dodge** 10; **Move** 10.
SM +1 (2 hexes); 500 lbs.

Traits: Combat Reflexes; DR 1; Night Vision 5; Quadruped; Sharp Claws; Sharp Teeth; Temperature Tolerance 1; Wild Animal.
Skills: Brawling-15; Stealth-13; Swimming-13.

Animal and Monster Statistics

Creature statistics in this chapter appear in an abbreviated form.

Attributes: These are racial averages, suitable for a typical encounter. **The GM might wish to increase ST for especially large specimens, or decrease it for young or scrawny examples. Find racial attribute modifiers for templates by subtracting 10 from the racial average score; e.g., the ST 14 listed for a black bear means its racial template would have ST+4.**

Secondary Characteristics: **These, too, are racial averages. They are derived from attributes using the usual formulas – but note that many animals have racial Will, Perception, and Move modifiers. For damage, see *Damage for Animals* (p. 460). Calculate Basic Lift normally, if needed. Assume that HP equal ST and FP equal HT, unless noted otherwise. Dodge is based on Basic Speed, and *includes* the +1 for Combat Reflexes, if applicable. Size Modifier (SM) and average weight also appear here.**

Traits: A summary of the creature's most important meta-traits, advantages, and disadvantages, *from the perspective of interacting with humans.* Most creatures have other traits, but these only matter when creating a full-fledged racial template.

Skills: The creature's *significant* skills, at racial average levels. Assume that a creature with the Wild Animal meta-trait will also have Survival skill in its native habitat at a level equal to its Perception.

Individualizing Animals

The GM is not bound by the statistics given to animals, which describe *typical* creatures. Individuals may vary!

Attributes

ST: May vary significantly – perhaps by as much as 20%, for large creatures. High ST is *extremely* valuable for draft animals.

DX: Rarely varies by more than a point either way.

IQ: Realistically, this is fixed, as noted in the Domestic Animal and Wild Animal meta-traits (see *Mentality Meta-Traits*, p. 263). Even a one-point increase in IQ makes a beast a genius of its kind. However, allowing an occasional animal of *any* species to be IQ 6 makes for some interesting pets!

HT: May vary by one or two points in either direction.

Secondary Characteristics

Any change in attributes will affect these scores normally. In addition:

HP: May vary by up to 20% in either direction, especially on a large creature.

Will: May vary by one or two points either way. Strong-willed creatures tend to be ornery but hard to spook – which is desirable for war beasts, less so for pets.

Per: Rarely varies by more than a point either way. High Per is greatly prized in hunting animals!

FP: May vary by up to 20% either way.

Speed and *Move:* May vary a little bit. Even a one-point increase can grossly inflate the price of a horse or other mount.

Traits

Advantages and Disadvantages: These rarely vary much – but feel free to give an animal mental disadvantages and quirks that reflect its personality. Unique beasts might have other mundane traits; e.g., a horse with Danger Sense or Luck.

Meta-Traits: Morphology meta-traits should never change. However, Domestic Animal and Wild Animal are interchangeable for a few species.

Skills

These are unlikely to vary much without training – see *Animal Training* (p. 458).

Cost

Any improvement in an animal's stats will increase its market value. ST and FP are valuable for draft animals, Will for war beasts, Per for hunting animals, Move for mounts, and IQ and skills for *any* trained animal. Likewise, inferior stats will decrease value. In the absence of specific formulas, details are up to the GM. A normally wild animal with Domestic Animal and Mount skill would be worth a small fortune!

Deer

Deer are swift herbivores, frequently hunted for food.

Red Deer

A large deer, common in medieval Europe and still widespread today.

ST 12; **DX** 13; **IQ** 3; **HT** 12.
Will 10; **Per** 10; **Speed** 6.25; **Dodge** 9; **Move** 9.
SM +1 (2 hexes); 200 lbs.

Traits: Hooves; Impaling Striker (Antlers); Quadruped; Weak Bite; Wild Animal.
Skills: Running-13.

Dogs

Domesticated dogs are used for hunting or as pets (or, if large enough, as draft animals). There are many breeds; statistics can vary greatly. Cost ranges from negligible to $10,000+. A healthy, *trained* dog – even a mongrel – is always worth at least $200.

Large Guard Dog

ST 9; **DX** 11; **IQ** 4; **HT** 12.
Will 10; **Per** 12; **Speed** 5.75; **Dodge** 8; **Move** 10.
SM 0; 90 lbs.

Traits: Chummy; Discriminatory Smell; Domestic Animal; Quadruped; Sharp Teeth.
Skills: Brawling-13; Tracking-13 (bloodhounds have Tracking-15 or better!).

Falcons

These birds of prey are commonly used for sport hunting. A trained falcon – or one disturbed by a stranger – *might* attack a human. A diving falcon can reach Move 70!

Large Falcon

ST 3; **DX** 14; **IQ** 3; **HT** 10.
Will 10; **Per** 12; **Speed** 6; **Dodge** 9; **Move** 2 (Ground).
SM -4; 5 lbs.

Traits: Acute Vision 3; Domestic (or Wild) Animal; Enhanced Move 1 (Air Speed 24); Flight (Winged; Air Move 12); No Fine Manipulators; Sharp Beak; Sharp Claws.
Skills: Brawling-16.

Sharks

Some sharks are almost docile, feeding primarily on whatever fish happen to swim by at the wrong moment. Those sharks aren't any fun at *all*.

Tiger Shark

A large, aggressive shark.

ST 19; **DX** 13; **IQ** 2; **HT** 12.
Will 10; **Per** 12; **Speed** 6.25; **Dodge** 10; **Move** 7 (Water).
SM +2 (4 hexes); 900 lbs.

Traits: Bad Temper (9); Combat Reflexes; Crushing Striker (Snout); Discriminatory Smell; Doesn't Breathe (Gills); Enhanced Move 1 (Water Speed 14; Costs Fatigue 2);

Ichthyoid; Pressure Support 2; Sharp Teeth; Subsonic Hearing; Vibration Sense; Wild Animal.
Skills: Brawling-15; Survival (Open Ocean)-14.

Great White Shark

An apex predator!

ST 38; **DX** 10; **IQ** 2; **HT** 12.
Will 10; **Per** 10; **Speed** 5.5; **Dodge** 9; **Move** 7 (Water).
SM +3 (7 hexes); 7,000 lbs.

Traits: As tiger shark, plus Hard to Kill 2.
Skills: Brawling-12; Survival (Open Ocean)-14.

Snakes

Snakes are among the most common reptiles on Earth; they are found in temperate or warmer climates on six of the seven continents.

Python

A large constrictor. Statistics are for a 15' Indian python, but lengths can reach 30'!

ST 13; **DX** 12; **IQ** 2; **HT** 11.
Will 10; **Per** 10; **Speed** 5.75; **Dodge** 8; **Move** 4.
SM 0; 225 lbs.

Traits: Cold-Blooded (50°); Constriction Attack; Vermiform; Wild Animal.
Skills: Stealth-12; Wrestling-13.

Rattlesnake

A common poisonous snake. Even little ones are dangerous; the gigantic diamondback described here (8' long) is *deadly*. Modifiers to HT roll for venom: +1 if venom is immediately sucked out; +2 if antivenin (TL6+) is used.

ST 5; **DX** 13; **IQ** 2; **HT** 11.
Will 10; **Per** 10; **Speed** 6; **Dodge** 9; **Move** 4.
SM -1; 15 lbs.

Traits: Cold Blooded (50°); Fangs; Toxic Attack 2d (Cyclic, 1 day, 4 cycles; Follow-Up, Fangs; Resistible, HT-4); Vermiform; Wild Animal.
Skills: Brawling-15; Stealth-13.

Wild Boars

Wild hogs are hunted for food – but they're dangerous game. Boars are *smart*, evil-tempered, and likely to attack even when encountered by accident. They try to knock a man down with a slam and gore him while he's down. Sows are less aggressive and smaller (give them lower ST and weight).

Large Boar

ST 15; **DX** 12; **IQ** 5; **HT** 14.
Will 12; **Per** 12; **Speed** 6.5; **Dodge** 10; **Move** 8.
SM +1 (2 hexes); 400 lbs.

Traits: Bad Temper (9); Combat Reflexes; Cutting Striker (Tusks); DR 2; Quadruped; Wild Animal.

Small Boar

A javelina or peccary.

ST 8; **DX** 12; **IQ** 5; **HT** 12.
Will 12; **Per** 12; **Speed** 6; **Dodge** 10; **Move** 7.
SM -1; 45 lbs.

Traits: As large boar, but only DR 1.

Wolves

These wild carnivores hunt in packs. They can be domesticated, more or less, but never like a dog.

Timber Wolf

ST 10; **DX** 12; **IQ** 4; **HT** 12.
Will 11; **Per** 14; **Speed** 6; **Dodge** 9; **Move** 9.
SM 0; 120 lbs.

Traits: Discriminatory Smell; DR 1; Night Vision 2; Quadruped; Sharp Teeth; Temperature Tolerance 1; Wild Animal.
Skills: Brawling-14; Tracking-14.

Pets and Trained Animals

Ordinary trained animals are property purchased with cash, *not* advantages bought with points. The GM controls their actions – but the better a beast's training, the more likely it is to do what its owner wishes.

These rules do not apply to *unique* animal companions, such as familiars. For a creature like that, determine its point total as a character, and then see *Allies* (p. 36) to find its point cost as an advantage.

Animal Training

To train an animal, you must know the appropriate specialty of Animal Handling skill (p. 175). The level of training an animal can absorb depends strictly on its IQ:

IQ 2 – *Average reptile.* It can learn to come when called for food and recognize its master, and not to attack him (usually!).

IQ 3 – *Average horse or hawk.* It can learn commands appropriate to its work – hunting commands for a hawk, riding or pulling commands for a riding or draft animal, etc. – and general tolerance for all humans or for specific masters (trainer's choice). It knows its name and comes when called (if it feels like it).

IQ 4 – *Average dog.* As above, plus "fetch," "attack," "find," "sit," etc., as appropriate for the species. It tries to warn its owner of dangers it perceives, and fights – and even dies – for its master.

IQ 5 – *Average monkey.* As above, but with more complexity. The GM may allow anything he ever saw a trained animal do in the movies . . .

Find training time by comparing the IQ level of the training to the animal's actual IQ score on the table on p. 459. These times assume the trainer works with the creature for about four hours a day, in a pair of two-hour sessions.

This table gives the time needed to train the animal to the *general* level given above. To teach a specific new trick – if the GM agrees the animal can learn it – allow 14 days for an IQ 5 creature, 30 days for one of IQ 4, or 90 days for an IQ 3 animal.

IQ of Animal	IQ Level of Training 2	3	4	5
2	60 days	Imp.	Imp.	Imp.
3	30 days	360 days	Imp.	Imp.
4	7 days	180 days	360 days	Imp.
5	2 days	90 days	180 days	720 days

Imp.: Training to this IQ level is impossible.

Value of Trained Animals

Training may affect the value of a domestic animal, as follows:

IQ 2 creatures can learn so little that training doesn't enhance their value.

IQ 3 creatures are of little use unless trained. *Decrease* the value of an IQ 3 domestic animal by 1/3 if it is "unbroken" (that is, untrained). Any young specimen is automatically unbroken and therefore cheaper.

IQ 4 creatures are assumed to be trained to IQ 3 level when bought; if not, decrease price by 1/3, as above. When an IQ 4 creature is fully trained to IQ 4 level, increase its base value by 50%.

IQ 5 creatures follow the IQ 4 rule. In addition, when an IQ 5 creature is fully trained to IQ 5 level, *double* its base value.

If a *domestic* animal (anything with the Domestic Animal meta-trait) has higher IQ than normal for its species, it is worth *much* more when fully trained: multiply by 4 for +1 IQ or by 10 for +2 IQ. For example, an IQ 5 horse is worth 10 times base value.

If a *wild* animal (anything with the Wild Animal meta-trait) is captured and trained, its value goes up markedly – especially if the creature is intelligent or ferocious. Details are up to the GM. All Animal Handling rolls to train wild beasts are at -5.

Riding and Draft Animals

Below are descriptions of several domestic animals kept for riding and draft purposes. If you are using miniatures, a horse is considered a three-hex figure, with the rider in the middle hex. Donkeys and small mules are two-hex figures. For mounted combat rules, see p. 396.

Cost: The costs listed assume a beast trained to IQ 3 level (see above). Several factors can increase this price:

- Increases in *ST* raise cost by a percentage equal to the ST increase. (*Very* strong specimens might be worth more than this formula would indicate!)
- Increases in *IQ* raise cost as described under *Value of Trained Animals*.
- Increases in *Move* drastically raise a riding animal's value! *Double* cost for +1 Basic Move, and *quadruple* it for +2 Basic Move. Remember to multiply Basic Move for Enhanced Move, if any.

Other changes are up to the GM.

War-Trained Mounts

War-trained riding animals are worth more than other mounts. Before TL4, they are taught to enter battle and fight savagely, even if their rider is unhorsed. A trained warhorse is likely to attack *anyone* other than its owner who approaches it! At TL4+, they are not taught to fight, but to be reliable transportation, *not* afraid of gunfire or screams.

At *any* TL, it takes a year of war training (after "basic" training to IQ 3 level) to get the mount fit to ride into battle. This doubles its value. The statistics and cost given for the cavalry horse and heavy warhorse under *Riding and Draft Animals* assume a beast with this training.

Up to three more years of training are possible, giving +1 per year on all Riding and Animal Handling rolls in combat, and increasing base value by 50% per year.

Camels

A dry-plains native, the camel can go for four days without drinking. Its stubborn temper gives -4 to Animal Handling rolls.

ST 22; **DX** 9; **IQ** 3; **HT** 12.
Will 11; **Per** 12; **Speed** 5.25; **Dodge** 8; **Move** 7.
SM +1 (3 hexes); 1,400 lbs.

Traits: Bad Temper (12); Domestic Animal; Enhanced Move 1 (Ground Speed 14); Hooves; Peripheral Vision; Quadruped; Reduced Consumption 3 (Water Only); Stubbornness; Weak Bite.
Skills: Survival (Desert)-12.
Cost: $1,500.

Donkeys, Horses, and Mules

These animals were domesticated in Europe and Asia before recorded history. They were introduced to the Americas in the late 15th and 16th centuries.

Cavalry Horse

A light warhorse.

ST 22; **DX** 9; **IQ** 3; **HT** 11.
Will 11; **Per** 12; **Speed** 5; **Dodge** 9; **Move** 8.
SM +1 (3 hexes); 1,400 lbs.

Traits: Combat Reflexes; Domestic Animal; Enhanced Move 1 (Ground Speed 16); Hooves; Peripheral Vision; Quadruped; Weak Bite.
Skills: Brawling-10; Mount-12.
Cost: $4,000.

Donkey

Sturdy, but too small for an adult to ride.

ST 15; **DX** 10; **IQ** 3; **HT** 11.
Will 11; **Per** 12; **Speed** 5.25; **Dodge** 8; **Move** 5.
SM +1 (2 hexes); 500 lbs.

Traits: Domestic Animal; Enhanced Move 1/2 (Ground Speed 8); Hooves; Quadruped; Weak Bite.
Cost: $1,000.

Draft Horse

ST 25; **DX** 9; **IQ** 3; **HT** 12.
Will 10; **Per** 11; **Speed** 5.25; **Dodge** 8; **Move** 6.
SM +1 (3 hexes); 2,000 lbs.

Traits: Domestic Animal; Enhanced Move 1 (Ground Speed 12); Hooves; Peripheral Vision; Quadruped; Weak Bite.
Cost: $2,000.

Heavy Warhorse

ST 24; **DX** 9; **IQ** 3; **HT** 12.
Will 11; **Per** 12; **Speed** 5.25; **Dodge** 9; **Move** 7.
SM +1 (3 hexes); 1,900 lbs.

Traits: As cavalry horse, but with Bad Temper (12) and Enhanced Move 1 (Ground Speed 14).
Skills: Brawling-12; Mount-13.
Cost: $5,000.

Large Mule

ST 22; **DX** 10; **IQ** 3; **HT** 12.
Will 12; **Per** 12; **Speed** 5.5; **Dodge** 8; **Move** 6.
SM +1 (2 hexes); 1,400 lbs.

Traits: As donkey, but Enhanced Move 1/2 (Ground Speed 9) and sterile.
Cost: $2,000.

Pony

ST 18; **DX** 10; **IQ** 3; **HT** 11.
Will 11; **Per** 12; **Speed** 5.25; **Dodge** 8; **Move** 7.
SM +1 (3 hexes); 800 lbs.

Traits: As draft horse, but Enhanced Move 1 (Ground Speed 14).
Cost: $1,500.

Racehorse

Some are faster!

ST 20; **DX** 9; **IQ** 3; **HT** 11.
Will 11; **Per** 11; **Speed** 5; **Dodge** 8; **Move** 9.
SM +1 (3 hexes); 1,100 lbs.

Traits: As draft horse, but Enhanced Move 1 (Ground Speed 18).
Skills: Mount-12; Running-12.
Cost: $4,000+.

Saddle Horse

An ordinary riding horse.

ST 21; **DX** 9; **IQ** 3; **HT** 11.
Will 10; **Per** 12; **Speed** 5; **Dodge** 8; **Move** 6.
SM +1 (3 hexes); 1,200 lbs.

Traits: As draft horse.
Skills: Mount-11.
Cost: $1,200.

Small Mule

ST 18; **DX** 10; **IQ** 3; **HT** 12.
Will 12; **Per** 12; **Speed** 5.5; **Dodge** 8; **Move** 5.
SM +1 (2 hexes); 800 lbs.

Traits: As donkey, but sterile.
Cost: $1,000.

Elephants

Often domesticated. Intelligent, loyal, and hardworking.

ST 45; **DX** 12; **IQ** 5; **HT** 12.
Will 10; **Per** 10; **Speed** 4; **Dodge** 7; **Move** 4.
SM +3 (10 hexes); 12,000+ lbs.

Traits: Crushing Striker (Tusks); Domestic (or Wild) Animal; DR 4; Enhanced Move 1 (Ground Speed 8); Peripheral Vision; Quadruped (but replace No Fine Manipulators with One Arm); Trunk (Extra-Flexible; Long, +1 SM; Weak, 1/4 ST); Weak Bite.
Cost: $10,000.

Oxen

Oxen are steers trained to work in the fields. They are hardier and easier to keep than horses.

ST 27; **DX** 8; **IQ** 3; **HT** 12.
Will 12; **Per** 10; **Speed** 5; **Dodge** 8; **Move** 4.
SM +2 (3 hexes); 2,500 lbs.

Traits: Domestic Animal; DR 2 (Skull only); Enhanced Move 1 (Ground Speed 8); Impaling Striker (Horns); Neutered; Quadruped; Weak Bite.
Cost: $1,500.

Fantasy Monsters

Damage for Animals

Basic damage for a beast is *thrust* for its ST, found by consulting the *Damage Table* (p. 60). Modify this as follows:

A *bite* does thrust-1. Weak Bite, common for large herbivores, gives an extra -2 *per die*. A bite is *crushing* unless the creature has Sharp Teeth (cutting) or Fangs (impaling).

A *claw* does thrust-1, like a punch. Blunt Claws give +1 *per die*, and damage is *crushing*. Sharp Claws give no bonus, but inflict *cutting* damage.

A *kick* does thrust. Blunt Claws or Hooves give +1 *per die*, and inflict *crushing* damage; Sharp Claws give no bonus, but cause *cutting* damage. The Quadruped meta-trait includes Horizontal (p. 139), which gives -1 *per die* to kicking damage to creatures without Claws. For large herbivores, this cancels out the +1 per die for Hooves.

Most other attacks (horns, tusks, etc.) are Strikers (p. 88). These inflict thrust damage, at +1 *per die*. Damage type depends on the Striker.

Predators and combat-trained animals often have Brawling at **DX**+2 level or better. This adds +1 *per die* to basic thrust damage for *any* of these attacks!

Here are three sample monsters from fantasy. If the GM changed the names and filed off the serial numbers, they could work equally well in a science-fiction background!

Basilisk

This creature resembles a small snake with a hideous face and a crested head. It attacks with a "death gaze": if it meets its victim's eyes, it can kill using the power of its mind.

ST 2; **DX** 12; **IQ** 3; **HT** 12.
Will 10; **Per** 10; **Speed** 6; **Dodge** 9; **Move** 4.
SM -3; 2 lbs.
Traits: DR 1; Toxic Attack 3d (Malediction 1; Psychokinetic; Vision-Based); Vermiform; Wild Animal.

Gryphon

The gryphon is a beautiful creature, with the head, wings, and forefeet of an eagle, and the hindquarters of a lion. It is *immune* to abilities that affect

only mammals or only birds, as it is neither!

A gryphon can be tamed if captured young, but at -3 to Animal Handling skill. An untamed gryphon in good health might sell for $5,000; a tame one is priceless, and will not cooperate with anyone except its trainer.

ST 17; **DX** 12; **IQ** 5; **HT** 12.
Will 11; **Per** 12; **Speed** 6; **Dodge** 10; **Move** 6 (Ground).
SM +1 (2 hexes); 600 lbs.

Traits: Acute Vision 3; Combat Reflexes; DR 2; Enhanced Move 1 (Air Speed 24); Flight (Winged; Air Move 12); Quadruped; Sharp Beak; Sharp Claws; Wild Animal.
Skills: Brawling-14.

Strix

A strix (plural *striges*) is a blood-sucking, birdlike creature about the size of a crow, with a long beak and large eyes. Striges are nocturnal. A strix attacks with its long, barbed beak. If the attack penetrates armor, the strix sucks its victim's blood. Striges have *excellent* aim, and can even attack through the eyeslits of a helm. Only two striges can strike thus in a second, but a successful hit can also blind the eye!

ST 5; **DX** 15; **IQ** 4; **HT** 11.
Will 10; **Per** 10; **Speed** 6.5; **Dodge** 9; **Move** 2 (Ground).
SM -1; 18 lbs.

Traits: Bloodlust (9); Flight (Winged; Air Move 12); Night Vision 5; No Fine Manipulators; Vampiric Bite; Wild Animal.
Skills: Brawling-17.

Animals in Combat

To play animals realistically, remember that:

- Most animals fear man and flee rather than attack. Exceptions include a mother defending her young; an insect swarm defending its nest; an old or wounded "man-eater" predator; a creature so stupid it doesn't realize men are dangerous; a creature so powerful men *aren't* dangerous; or a large herbivore (bison, rhino, Triceratops), which might charge anything out of sheer orneriness.
- In a balanced ecology, predators are comparatively rare, prey species common.

Use the combat rules in Chapters 11-13 for animals, just as you would for humans, with special attention to *Multi-Hex Figures* (p. 392) and *Trampling* (p. 404). A few other notes:

Reach: A beast's reach is "C" ("close combat only") unless its description notes otherwise. Most animals initiate combat with a grapple or a slam, followed by an attempt to crush the foe or tear him to pieces in close combat.

Defense: Animals usually defend by *dodging*. Dodge is Basic Speed + 3, dropping all fractions. Most animals have No Fine Manipulators (included in Ichthyoid, Quadruped, and Vermiform) and, therefore, cannot parry. Those with manipulators (e.g., apes) *can* parry. Unarmed Parry is (DX/2) + 3 or (Brawling/2) + 3. No natural animal can block. Many animals have Combat Reflexes, which adds +1 to defenses.

Swarm Attack Examples

Bats. A "swarm" is about a dozen carnivorous bats. Flies at Move 8. Does 1d cutting damage per turn. Armor protects with its normal DR. Dispersed after losing 8 HP.

Bees. A "swarm" is about 1,000 common bees. Flies at Move 6. Stings for 1 HP of injury per turn unless the victim is *completely* protected. Dispersed after losing 12 HP. Will give up the attack if foe is chased 50 yards from hive. Note that bothering a hive may get *several* such swarms after you!

Rats. A "swarm" is about a dozen rats. It has Move 4. Does 1d cutting damage per turn. Armor protects with its normal DR. Dispersed after losing 6 HP.

Armor: A creature's hide, shell, fur, etc. may give DR, as indicated in its *Traits* entry.

Swarm Attacks

Treat a group of small creatures as a unit when it attacks. This "swarm" fills one hex on a combat map. A swarm attacks the victim(s) in its own hex (if you are not using a combat map, it attacks one person per second), and will not change victims without a good reason.

A swarm attack hits *automatically* – there is no attack or defense roll. Every turn until it is dispersed, it does the listed damage to its victim(s).

Special clothing (a wetsuit or beekeeper's suit, or high-tech airtight armor) may protect against some types of swarm. Against tiny creatures like insects, ordinary clothing gives *complete* immunity for two seconds, while low-tech armor protects for five seconds; then the bugs get in and the protection becomes worthless! Against larger creatures like rats, armor protects indefinitely with its normal DR.

Special tactics may work on some types of swarms. For instance, one can destroy bees with insecticide or baffle them by leaping into a pond. This is up to the players' cleverness and the GM's common sense.

Attacking a Swarm: Any attack against a swarm hits automatically. The swarm gets no defense roll. (A swarm of hard-to-hit creatures just requires more damage to disperse.) A swarm takes damage as if it were Diffuse – see *Injury to Unliving, Homogenous, and Diffuse Targets* (p. 380). *Shields* can crush *flying* creatures; a shield does 2 HP per turn, and can attack at the same time as a weapon. *Stomping* does 1 HP per turn to *nonflying* vermin, and can be done while attacking with a weapon.

Chapter Seventeen

Technology and Artifacts

Nearly every game world features gadgetry of some kind, ranging from primitive to futuristic . . . and often including things which are magical or just *weird*. These rules describe how to create and use all kinds of devices, what happens when they are damaged, and how to fix them.

Vehicles

A vehicle might be little more than a means of getting somewhere. But it *could* be a source of extra firepower . . . or even part of a character concept! A fighter plane or mecha might be the high-tech equivalent of a knight's trusty steed, and a party on the move might call a pirate ship or star cruiser "home" for adventure after adventure.

Vehicle Statistics

The tables in this section give statistics for common vehicle types, and note the skills required to operate them. Some vehicle systems, such as sensors or weapons, may require additional skills not listed here.

ST/HP: The vehicle's ST and HP. These are equal for a powered vehicle: the vehicle's mass determines both how powerful its engine must be (ST) and how hard it is to destroy (HP). For an *unpowered* vehicle, this score is marked with a †, and represents HP only; ST is 0. Unpowered vehicles have Injury Tolerance (Homogenous); others have the Machine meta-trait (p. 263), which includes Injury Tolerance (Unliving).

Hnd/SR: The first number is Handling; the second is Stability Rating. See *Control Rolls* (p. 466) for details.

HT: The vehicle's HT, a measure of reliability and ruggedness. *Fragile* vehicles have an additional code: "c" for Combustible, "f" for Flammable, or "x" for Explosive.

Move: The first number is Acceleration and the second is Top Speed, in yards/second (*double* this to get mph). These statistics are equivalent to a character's Move and his top speed with Enhanced Move. For ground vehicles, a * indicates a road-bound vehicle, while a ‡ indicates one that must follow rails. For spacecraft, divide Acceleration by 10 to find it in Earth gravities (G), and note that *c* means the speed of light (186,000 miles/second).

LWt.: Loaded Weight, in tons (1 ton = 2,000 lbs.), with *maximum* payload and a full load of fuel. Actual weight is often lower.

Load: The weight, in tons, of occupants and cargo the vehicle can carry, *including* the operator. To find cargo capacity, subtract the weight of occupants (for simplicity, assume 0.1 ton/person, including gear). To find "curb weight" (with fuel but no other payload), subtract Load from LWt.

SM: The vehicle's Size Modifier.

Occ.: The number of occupants the vehicle can carry in reasonable comfort, given as "crew+passengers"; e.g., 2+6 means two crew and six passengers. "A" indicates a vehicle built for long-term accommodation, with room to sleep, cook, etc. If the vehicle affords the occupants special protection, there is an additional code: "S" for Sealed (p. 82), "P" for Pressure Support (p. 77), or "V" for Vacuum Support (p. 96).

DR: The vehicle's DR. Some vehicles have different DR on various faces or locations. The table lists the two most important DR scores – for ground vehicles, this is usually the front DR and the average of side and rear DR.

Range: The travel distance, in miles, before the vehicle runs out of fuel. For unpowered or exotic vehicles, "–" means only provisions (food and water) limit range. "F" means the FP of the rowers or draft animals, and stored provisions, limit range. Spacecraft either omit this statistic or use the entry to give faster-than-light drive capabilities.

Cost: The vehicle's cost, in $. "K" means thousands; "M" means millions.

Locations: The vehicle's hit locations, besides its body. If a vehicle has multiple instances of a location, a quantity precedes the abbreviation; e.g., "3M" for a three-masted ship, or "14D" for 14 draft animals. A vehicle's hit locations determine both how it moves (see *Basic Vehicle Movement*, below) and what parts can be hit in combat (see *Vehicle Hit Location Table*, p. 554).

Code	*Location*
A	arm
C	caterpillar tracks
D	draft animals
E	exposed rider
G	large glass windows
g	small glass windows
H	helicopter rotors
L	leg
M	mast and rigging
O	open cabin
R	runners or skids
r	retractable
S	large superstructure or gondola
s	small superstructure
T	main turret
t	independent turret
W	wheel
Wi	a *pair* of wings
X	exposed weapon mount

Draft: For a watercraft, the minimum depth of water, in feet, it can safely operate in.

Stall: For an aircraft, the minimum speed, in yards/second, it must maintain to take off and stay airborne. "0" means it can hover.

Notes: Any special capabilities or problems the vehicle has. If the vehicle has complex systems, footnotes or a separate description will detail weapons and equipment.

Basic Vehicle Movement

When adventurers use a vehicle for transportation, it is usually enough to know *how fast it can move* (Top Speed, in yards/second) and *how far it can travel* (Range, in miles). The rules below are for those occasions when the details become important.

"Are you telling me that you built a time machine . . . out of a DeLorean?"

"The way I see it, if you're going to build a time machine into a car, why not do it with some style?"

– Marty McFly and Doc Brown,
Back to the Future

Long-Distance Movement

When covering significant distances, the following factors can be more important than Top Speed and Range.

Cruising Speed: Travel conditions, safety considerations, and the need to conserve fuel or energy mean that in practice, ground and air vehicles typically use only 60-70% of Top Speed when traveling long distances. An animal-drawn or rowed vehicle can only use its Top Speed for a few minutes – for the beasts or rowers, this is as fatiguing as running! The highest sustainable speed is about 75% of this, which is as fatiguing as hiking. If the beasts or rowers drop below 1/3 FP, halve Top Speed.

Endurance: Divide Range in miles by cruising speed in mph to determine endurance in hours for situations where "loiter" capability matters more than range. The vehicle must carry provisions in order to take advantage of endurance in excess of one day. Food and water are about 12 lbs. per person per day, but won't keep for more than a month before TL5 (at TL5+, canned goods and similar rations are available).

Ground Vehicle Table

TL	Vehicle	ST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ.	DR	Range	Cost	Locations	Notes
TEAMSTER														
0	Dogsled	27†	0/2	12c	6/6	0.29	0.14	+1	1	2	F	$400	14DER	[1]
1	Chariot	22†	0/2	11c	4/9*	0.29	0.2	+1	1+1	1	F	$330	2DE2W	[1]
3	Wagon	35†	-3/4	12c	4/8*	0.84	0.5	+2	1	2	F	$680	2DE4W	[1]
4	Coach	53†	-2/3	12c	4/9*	2.4	1.2	+3	1+9	2	F	$11K	4DO4W	[1]
DRIVING/TL (LOCOMOTIVE)														
5	Locomotive	152	-2/5	11	1/35‡	28	0.2	+5	1+1	8	700	$45K	8W	
DRIVING/TL (AUTOMOBILE)														
6	Roadster	42	-1/3	9f	2/22*	0.85	0.25	+2	1+1	4	200	$3.6K	O4W	
6	Sedan	46	0/4	10f	3/30*	1.3	0.5	+3	1+3	5	360	$8K	G4W	
6	Jeep	52	0/3	11f	2/32	1.6	0.4	+2	1+3	4	375	$10K	O4W	
7	Pickup Truck	55	0/4	11f	3/50	2.2	0.85	+3	2	5	450	$20K	G4W	
7	Sedan	53	0/4	11f	2/55*	1.8	0.6	+3	1+4	5	500	$15K	G4W	
7	Van	68	-1/4	11f	2/45*	3.5	1	+4	1+7	4	650	$25K	g4W	
7	Sports Car	57	+1/4	10f	5/75*	1.8	0.4	+3	1+3	4	500	$85K	GW4	
8	Luxury Car	57	0/4	11f	3/57*	2.1	0.6	+3	1+4	5	500	$30K	G4W	
8	SUV	68	-1/4	11f	3/50	4	1.5	+3	1+4	5	400	$45K	G4W	
DRIVING/TL (HEAVY WHEELED)														
6	2 1/2-Ton Truck	88	-1/4	11f	1/24*	8.5	3	+4	1+2	5	375	$17K	G6W	
7	Bus	100	-2/4	11f	1/30*	14.7	6.7	+6	1+66	4	400	$120K	G4W	
8	Semi-Truck	104	-1/5	12f	2/55*	10.3	0.3	+4	1+2	5	1,200	$60K	G6W	[2]
DRIVING/TL (MOTORCYCLE)														
6	Hvy. Bike	33	+1/2	10f	5/32*	0.4	0.1	0	1	4	200	$1.5K	E2W	
7	Scooter	29	+1/2	10f	3/27*	0.3	0.1	0	1	3	190	$1K	E2W	
7	Hvy. Bike	33	+1/2	11f	8/55*	0.5	0.2	0	1+1	4	200	$8K	E2W	
8	Sports Bike	30	+2/2	10f	9/78*	0.42	0.2	0	1+1	3	150	$11K	E2W	
DRIVING/TL (TRACKED)														
7	APC	111	-3/5	11f	1/20	12.5	1.6	+4	2+11S	50/35	300	$120K	2CX	[3]

[1] Draft animals are dogs for the dogsled, and horses for the chariot, wagon, and coach.

[2] Hauls a 48′ semi-trailer. With the trailer, Hnd/SR is -3/4 and Move is 1/30*. Trailer is HP 100†, Load 24, SM +5, and DR 3.

[3] "APC" means "armored personnel carrier." The higher DR applies only to attacks from the *front*. Mounts a machine gun (7.62mm or .50) on an external mount on the roof.

Watercraft Table

TL	Vehicle	ST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ.	DR	Range	Cost	Loc.	Draft	Notes
BOATING/TL (UNPOWERED)															
0	Canoe	23†	+1/1	12c	2/2	0.3	0.2	+1	2	2	F	$200	O	3	
BOATING/TL (MOTORBOAT)															
7	Inflatable Boat	20	+2/2	11	2/12	0.6	0.5	+1	1+4	2	100	$2K	O	2	
7	Speedboat	50	+1/3	11f	3/20	2	1	+2	1+9	3	200	$18K	O	3	
SHIPHANDLING/TL (SHIP)															
2	Penteconter	85†	-4/3	11c	1/5	12.5	7.5	+8	55	3	F	$14K	MO	6	[1, 2]
3	Cog	147†	-3/4	12c	0.1/4	85	60	+7	18	5	–	$23K	M	13	[1, 3]
6	Tramp Steamer	750	-3/6	11f	0.01/6	14,000	9,000	+10	41+29A	30	7,200	$15M	g2S	25	

[1] A "penteconter" is a Greek war galley with a sail and a single bank of oars, favored by raiders and pirates. A "cog" (or "roundship") is a single-masted medieval sailing ship.

[2] Using oars, with 50 rowers. Under sail, Range is "–" and Move is 1/4 in a fair wind. Has a bronze ram, which adds +1 *per die* of collision damage.

[3] Wind-powered. Weight includes ballast.

Aircraft Table

TL	Vehicle	ST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ.	DR	Range	Cost	Loc.	Stall	Notes
PILOTING/TL (LIGHT AIRPLANE)															
6	"Barnstormer"														
	Biplane	43	+2/3	10f	2/37	0.9	0.2	+3	1+1	3	85	$55K	O2WWi	23	
7	Light Monoplane	45	+2/3	10f	3/70	1.15	0.3	+4	1+1	3	500	$150K	G2WWi	25	
PILOTING/TL (LIGHTER-THAN-AIR)															
6	Blimp	120	-4/3	10	1/38	18	4	+10	10A	1	2,300	$3M	S	0	
PILOTING/TL (HEAVY AIRPLANE)															
6	Twin-Prop														
	Transport	100	-2/3	12f	2/114	12.8	3	+7	2+21	4	1,500	$340K	g3WWi	34	
7	Business Jet	84	0/3	11f	4/275	9.2	1.6	+6	2+6P	5	1,300	$10M	G3WWi	55	
PILOTING/TL (HELICOPTER)															
7	Light Helicopter	47	+2/2	10f	2/90	1.5	0.5	+4	1+3	3	225	$400K	GH3Wr	0	
7	Utility Helicopter	70	0/2	10f	2/65	4.7	1.4	+5	2+12	3	300	$2M	gH2R	0	
8	Utility Helicopter	87	+1/2	11f	3/110	10	3.5	+5	3+14	5/20	370	$8M	gH3W	0	[1]
PILOTING/TL (VERTOL)															
9	Air Car	45	+2/3	11f	4/190	1.2	0.4	+3	1+3P	4	900	$500K	G4W	0	
PILOTING/TL (CONTRAGRAVITY)															
^	Grav Bike	30	+4/2	11	20/80	0.4	0.2	0	1+1	3	1,000	$25K	E	0	
^	Grav Jeep	50	+3/3	12	10/100	2	1	+4	1+5	4	2,000	$400K	O	0	

[1] Rotors have DR 20; all other locations have DR 5.

Spacecraft Table

TL	Vehicle	ST/HP	Hnd/SR	HT	Move (G)	LWt.	Load	SM	Occ.	DR	Cost	Locations	Notes
PILOTING/TL (AEROSPACE)													
9	Orbital Clipper	170	-2/3	10fx	30/9,000 (3G)	515	10	+9	2+4SV	4	$350M	–	[1]
PILOTING/TL (HIGH-PERFORMANCE SPACECRAFT)													
^	Shuttlecraft	136	+2/4	12	20/c (2G)	100	25	+6	1+10SV	100	$35M	3Rr	[2]
^	Star Freighter	500	0/5	11	15/c (1.5G)	1,000	400	+9	2+18ASV	100	$100M	3Rr2t	[2, 3]

[1] The orbital clipper is a Space Shuttle replacement that can boost to Earth orbit and make reentry. Uses ordinary Newtonian space flight. Cost drops to M$70 at TL10+.

[2] Uses reactionless or gravitic thrusters to accelerate to light speed (*c*) – or whatever fraction of *c* the GM sets as a limit. Star drives and force fields, if any, are up to the GM.

[3] Has hyperspectral sensors (Hyperspectral Vision, with 360° Vision and Telescopic Vision 10) and radar (Radar, 500,000 yards, Targeting). Its two independent turrets can, at extra cost ($0.5M apiece), mount laser cannon: Dmg. 6d×5(2) burn, Acc 10, Range 100,000/300,000, RoF 4, Rcl 1.

Convoys: Multiple vehicles traveling in convoy or formation move at 80% of the speed of the *slowest* vehicle, due to the need for station keeping. On a successful Leadership roll, use 100% of the speed of the slowest vehicle. For long journeys, roll daily.

Control Rolls

A vehicle operator must make a "control roll" – against Boating, Driving, Piloting, etc., as appropriate – in any potentially hazardous situation. The GM may require a roll every few hours in an ongoing situation such as a fierce storm, or every few *seconds* in combat!

Modifiers: The vehicle's Handling (Hnd) statistic modifies *all* control rolls. For sudden deceleration or tight turns, see *Pushing the Envelope* (p. 395). Visibility modifiers (-1 to -9 for darkness, fog, etc.; -10 for total darkness) apply if there is risk of collision; they aren't important when trying to weather a storm at 30,000 feet or in the mid-Atlantic, but they're crucial if you're zigzagging through mountains, landing or taking off in an aircraft, sailing just off a rocky coast, etc. See the relevant vehicle skill for other modifiers. The GM may assess situational modifiers as he sees fit.

On a failure, the operator does not perform the maneuver properly, or fails to avoid the hazard. Failure by no more than the vehicle's Stability Rating (SR) is a minor problem; e.g., a car skids off the road, or a ship loses a few hours of travel. More severe failure means a major problem; e.g., a crash. The GM may allow a second control roll, at a hefty penalty, to keep a major problem from becoming a total disaster; the modifiers should depend on the exact action(s) the operator takes. On a critical failure, disaster is inevitable!

Large vehicles may require a roll against both the master's Shiphandling skill and the crew's average Crewman skill. Use the *average* margin of success or failure.

Ground Travel

A ground vehicle moves on wheels, runners, tracks, or legs, as indicated by the notation in its Locations entry. The average speed it can sustain on a journey depends on the terrain and the weather. See *Hiking* (p. 351) for definitions of terrain and weather conditions.

Terrain: Figure cruising speed in mph from Top Speed in yards/second as follows:

- *Very Bad* (deep snow, swamp): Top Speed × 0.1 mph on wheels or runners, Top Speed × 0.15 mph on tracks, Top Speed × 0.2 mph on legs.
- *Bad* (hills, woods): Top Speed × 0.25 mph on wheels, Top Speed × 0.5 mph otherwise.
- *Average* (dirt road, plains): Top Speed × 0.5 mph on wheels, Top Speed × 1 mph otherwise.
- *Good* (paved road, salt flats): Top Speed × 1.25 mph.

For a road-bound vehicle (e.g., a normal car), use Top Speed only when traveling on a road. Off road, use the *lower* of Top Speed and 4 × Acceleration in these formulas.

Example: A luxury car with Move 3/57 gets an average travel speed of 57 × 1.25 = 71 mph on a paved road (Good). On a dirt road (Average), it could manage 57 × 0.5 = 28 mph. But off road in Average terrain, it would drop to 3 × 4 × 0.5 = 6 mph!

For a vehicle that follows rails (e.g., a locomotive), treat the rails as Good terrain. However, the vehicle cannot move *at all* off the rails!

These rates assume *sustained* travel at a safe cruising speed. A vehicle going flat out can move up to 60% faster (e.g., Top Speed × 2 mph over Good terrain, like a road), but the GM may require hourly control rolls to avoid a mishap, such as a collision.

Weather: This affects ground vehicles just as it does hikers. Treat sleds and snowmobiles as skates on ice and as skis on snow.

Water Travel

A powered vessel moves at Top Speed × 2 mph. A sailing craft moves at Top Speed × 2 mph in ideal wind conditions; actual speed can drop to a fraction of this – or even zero – depending on wind direction and strength. A rowed vessel can only sustain a speed of Top Speed × 1.5 mph (and even this will eventually fatigue the crew).

Currents can increase or reduce speed directly – typically by a few mph, depending on the current. Heavy seas (caused by high winds) usually reduce speed. An unpowered vessel faced with a storm may require Shiphandling and Seamanship rolls by captain and crew to avoid being blown off course or worse.

Draft: "Draft" is the distance between the vessel's waterline and its keel. In water shallower than this, it will run aground. Re-floating it requires waiting for a change in tide, or jettisoning ballast or payload. In waters of unknown depth, it is best to proceed slowly and cautiously! (Roll against Area Knowledge to recall depth, or against Navigation (Sea) to read charts.)

Air Travel

An aircraft's cruising speed is about Top Speed × 1.6 mph. Powered aircraft can reach Top Speed × 2 mph at the cost of burning 50% more fuel, reducing Range. *Supersonic* aircraft (Move 360+) can only use their full Top Speed at high altitudes where the air is thin (15,000' and above). At low altitudes, Top Speed rarely exceeds 350-400 (700-800 mph).

The GM should require control rolls for landings during bad weather or visibility, and when traveling at high speeds at very low altitudes or through mountains. Winds and storms affect balloons and airships much as they do sailing vessels.

Ground Speed: A powered air vehicle can usually taxi at up to 2/3 its stall speed.

Space Travel

It takes about (0.10 × velocity in yards/second)/(Acceleration in G) *seconds* to reach a given cruising velocity. A spacecraft moving at that velocity takes roughly (0.5 × distance in miles)/velocity *hours* to travel a given distance. For comparison, the moon is around 0.25 million miles from Earth, and Mars is 34 million miles away at its closest approach.

Example: To accelerate to a velocity of 90,000 yards/second in a spacecraft with an acceleration of 1.5G would take (0.1 × 90,000)/1.5 = 6,000 seconds, or about 1.7 hours. At a velocity of 90,000 yards/second, you would reach Mars in (0.5 × 34,000,000)/90,000 = 189 hours.

It is common to give interplanetary distances in "astronomical units" (AU). One AU is 93 million miles, the average distance from the Earth to the Sun. Interstellar distances are often given in light-years (5.865 trillion miles) or parsecs (3.26 light-years). Earth's nearest stellar neighbor, Alpha Centauri, is 4.3 light-years away.

For a spacecraft that uses a Newtonian reaction drive (e.g., any real-life rocket), Top Speed is really "delta-v": the maximum change of velocity it can perform before running out of reaction mass (rocket fuel, etc.). Each acceleration or deceleration "costs" a fraction of this delta-v.

To lift into low Earth orbit requires Move 8,700. To achieve planetary escape velocity and *leave* orbit requires an extra Move 3,600. For other planets, multiply these velocities by the square root of (M/R), where M is planetary mass in Earth masses and R is planetary radius in Earth radii. In addition to having sufficient delta-v, the spacecraft's acceleration must exceed the planet's gravity (1G, for Earth).

Travel through interplanetary space requires using up the required delta-v to achieve the desired velocity, coasting as described above, then using delta-v to slow to the velocity needed to enter orbit at the destination.

Example: A spacecraft in Earth orbit has a delta-v of 200,000. It uses 3,600 to break orbit and 90,000 to accelerate to a cruising velocity (Move 90,000). It drifts at that speed for 1.5 hours to reach the moon, and then use another 88,500 to decelerate to the moon's orbital velocity. Its remaining delta-v is 200,000 - 3,600 - 90,000 - 88,500 = 17,900.

Some superscience space drives don't have to worry about delta-v – the spacecraft can accelerate constantly! The only requirement for such a spacecraft to leave a planet is that its acceleration exceeds the planet's gravity. When it travels long distances, it requires time in hours equal to the square root of (50.8 × distance in *millions* of miles/Acceleration in G) to complete the trip.

If a spacecraft is capable of faster-than-light travel, its performance depends on what kind of superscience exists. The GM should design a drive to suit his campaign. See the Hyperjump enhancement on the Warp advantage (p. 97) for one possibility.

Vehicle Weapon Mounts

Any weapon built into a vehicle is considered "mounted." The *type* of mount determines the weapon's stability and arc of fire. For the effects of these mounts on ranged attacks from moving vehicles, see *Ranged Attack Modifiers* (p. 548).

Arm Mount (TL8): If a vehicle has arms or strikers, these may contain weapons or have hands to carry them. They attack using the rules for handheld weapons.

Carriage (TL3): Some ships have weapons on wheeled carriages or sleds, either on deck or firing through ports. Treat these as fixed mounts, but skill is not limited to control skill, as the gun crew can use ropes to aim the weapon.

External Open Mount (TL1): Also called a pintle mount, deck gun, etc. Such a weapon can elevate to fire upward or swivel to fire in other directions. However, it isn't actually *in* the vehicle; the weapon and its crew have no protection.

External Stabilized Open Mount (TL7): As above, but with gyro-stabilization to reduce penalties for firing on the move.

Fixed Mount (TL1): You aim the gun by aiming the vehicle; e.g., a cannon in the nose of a jet fighter. The weapon can only shoot in one direction. The mount specifies which: [F] to the front, [R] to the right, and so on. The operator rolls against the *lower* of his Gunner skill or his control skill to hit.

Hardpoint (TL6): Aircraft often mount weapon pods, bombs, or missiles on pylons under their body or wings. Treat these as fixed mounts, but apply a -1 to Accuracy. External weapon loads like this count as encumbrance.

Stabilized Turret (TL7): As below, but with gyro-stabilization to keep the weapon aimed at the target regardless of the vehicle's motion.

Turret (TL5): This is a turret (or head) with weapons built into it. It can swivel to change facing independently of the vehicle. *Large* turrets are usually powered.

Basic Vehicle Combat

"Vehicle combat" is any combat that involves handheld weapons fired from within a vehicle (e.g., bank robbers shooting from a getaway car), weapons mounted on a vehicle (such as a fighter jet, tank, mecha, or spy car), or attacks that use the vehicle itself as a weapon (ramming, punching and kicking with the arms and legs of a mecha, etc.).

In the rules below, a vehicle's "operator" is the person at the controls. A "control skill" is the skill the operator uses to direct his vehicle; e.g., Driving or Piloting. An "occupant" is *anyone* in or on the vehicle – operator, crew, or passenger.

Tactical Combat with Vehicles: When using the rules in Chapter 13 with vehicles, you can represent vehicles with models or multi-hex counters drawn at three feet to the inch.

Maneuvers

Treat a vehicle as an extension of its operator. It moves on the operator's turn, at his place in the turn sequence (as determined by his Basic Speed). To control his vehicle, the operator must take a Move or Move and Attack maneuver on his turn – but it's the *vehicle* that moves or attacks, while the operator remains at the controls. If the operator takes any other maneuver, or is stunned or otherwise incapacitated, his vehicle plows ahead with the same speed and course it had on the previous turn.

The vehicle's other occupants take their turns at *their* place in the turn sequence. They may use vehicle systems, provided they are stationed next to the appropriate controls *and* take a suitable maneuver: Concentrate to use instruments or electronics, Attack or All-Out Attack to fire vehicular weapons, etc.

Occupants leaning out windows, standing on a deck, etc. may find Attack or even All-Out Defense preferable to All-Out Attack, as they will have a defense if someone attacks them instead of the vehicle. This matters most for vehicles with an exposed rider (E), glass windows (G or g), or open cabin (O), and for crew manning exposed weapon mounts (X).

Bailing Out of a Moving Vehicle: Anyone who jumps or falls from a moving vehicle and hits the ground suffers a collision with an immovable object, at the vehicle's speed. If the vehicle was flying, add falling damage as well. For details, see *Collisions and Falls* (p. 430). To jump *between* two moving vehicles, make a DX or Jumping roll. Apply the penalty for relative speed given on the *Size and Speed/Range Table* (p. 550).

Movement During Combat

As explained under *Vehicle Statistics* (p. 462), a vehicle's Move score is split into two numbers: Acceleration and Top Speed. Acceleration functions just like Basic Move for a character; at this speed or less, the vehicle has no special restrictions on movement. At higher speeds – anything up to Top Speed – use the *High-Speed Movement* rules (p. 394), but substitute control rolls (see *Control Rolls*, p. 466) for DX rolls.

Acceleration: A vehicle can accelerate up to its Acceleration each turn. A diving flyer may add 10 × local gravity in Gs (1G on Earth) to this.

Deceleration: A powered, wheeled ground vehicle can decelerate by 5 yards/second per turn. An animal-drawn or tracked, walking, or slithering ground vehicle can decelerate by 10 yards/second per turn. Most air and water vehicles can decelerate by (5 + Handling) yards/second per turn (minimum 1 yard/second). These rates assume *safe* deceleration. It is possible

to decelerate further with a successful control roll, as explained under *Pushing the Envelope* (p. 395); failure means a loss of control.

Control Rolls

The operator must make a control roll whenever he attempts a risky maneuver or encounters an obstacle, and whenever his vehicle suffers knockback or major damage. On a failure, he loses control of the vehicle. If you are using a rulebook that supplies a "crash table" for that type of vehicle, roll on the table; otherwise, see the applicable paragraph below. In addition to these results, a failed control roll always erases any accumulated bonuses for Aim maneuvers, and gives a penalty equal to the margin of failure to any attack from the vehicle until the operator's next turn.

Air Vehicle: Failure by the vehicle's Stability Rating (SR) or less means the vehicle loses 5 yards of altitude and decelerates by 10 yards/second. If it was flying dangerously low or slow, it could hit the ground or stall; otherwise, it just blunders ahead. Failure by more than SR, or critical failure, means an uncontrollable dive, tailspin, etc. If the vehicle was climbing, it stalls, then starts to fall; otherwise, it dives at Top Speed each turn. Either way, on subsequent turns, the operator must make a Piloting-5 roll to pull out!

Ground Vehicle: Failure by SR or less means the vehicle skids and fails to go in the intended direction if you were trying to turn – or veers randomly left or right otherwise. The GM determines if it hits something. Failure by more than SR, or critical failure, means it rolls or spins out and crashes. It skids or rolls for a distance equal to 1/3 its current velocity before coming to a stop, and suffers falling damage based on the velocity it had when it lost control.

Space or Underwater Vehicle: Failure by SR or less means the vehicle charges ahead or veers randomly instead of performing the intended maneuver; if it was trying to avoid an obstacle, it fails to do so. A submarine also loses 5 yards of depth, which might lead to a crash. Failure by more than SR, or critical failure, results in severe stress. Make a HT roll for the vehicle; on a failure, it suffers stress-related damage: a leak, engine failure, etc.

Water Vehicle: Failure by SR or less means exactly what it does for a ground vehicle. In addition, anyone standing on an open deck must make a ST or ST-based Seamanship roll to hold on or be washed overboard. Failure by more than SR, or critical failure, means the vehicle capsizes! Those on deck are tossed overboard automatically. An "unsinkable" vehicle like a surfaced sub, rubber raft, or canoe can be righted. Other vehicles simply sink.

Shooting through a window is unwise if the vehicle is sealed, pressurized, or has vacuum support.

Attack

Mounted Weapons: Vehicle occupants can attack with the vehicle's built-in weapons, provided they are manning weapon stations. At TL6+, many armed vehicles have targeting systems (optical sights, radar, computers, etc.) that add a bonus to the gunner's effective skill, just like a telescopic sight. Most of these systems only work if the gunner takes an Aim maneuver. A good TL6 optical sight might add +2 to skill. A typical TL7-8 system, with computerized laser- or radar-directed fire control, would give +3.

Ramming: The vehicle operator can use the vehicle itself as a weapon; see *Collisions and Falls* (p. 430).

Melee Attacks: If the vehicle has arms or legs, the operator can use it to punch, kick, grab, etc. as if it were an extension of his body.

Handheld Weapons: The viability of handheld weapons depends on the vehicle and the situation. Shooters in or on open vehicles, like jeeps and motorcycles, can fire in almost any direction. Occupants of enclosed vehicles must shoot through or lean out of an open window, door, hatch, port, or firing slit. Shots fired through a glass windscreen "star" it, rendering it opaque; it takes a Ready maneuver to clear away the broken glass. Shooting through a window is unwise if the vehicle is sealed, pressurized, or has vacuum support – it may result in a leak or explosive decompression!

Weapon Fire from a Moving Vehicle

When using a weapon from a moving platform – be it a Tommy gun from a getaway car, or a javelin from atop one of Hannibal's elephants – it's usually harder to hit your target than when you're standing still or moving yourself. The penalty depends on how rough the ride is and whether you're using a weapon mount or a handheld weapon – see *Ranged Attack Modifiers* (p. 548).

It's even harder to shoot straight if you don't know when the vehicle will weave or dodge! If the vehicle dodged and *you* aren't the operator, you have an extra -2 to hit, or -4 if flying.

***Aiming* on the move is particularly difficult. The combined bonuses from aiming (Accuracy, extra turns of Aim, targeting systems, and bracing) cannot exceed the SR of a moving vehicle unless the sights or mount are stabilized. Also apply this limit when firing from a stationary vehicle that is bobbing in the water or floating in turbulent air. In space, only apply this limit when *maneuvering*, not when moving in a straight line.**

It is also important to consider *apparent* relative speed. If two cars are rushing toward each other on a collision course, the speed of one, relative to the other, may be over 120 mph . . . but the *apparent* relative speed is zero. Only apply speed penalties for crossing targets. Ignore the speed of targets moving more or less directly toward or away from you.

If the operator fires a handheld weapon, he must take a Move and Attack maneuver. This gives him -2 to hit or a penalty equal to his weapon's Bulk, whichever is *worse* – his attention is divided between driving and shooting. Do *not* apply this penalty to mounted weapon attacks, ramming attempts, or vehicular melee attacks.

Defense

A vehicle's operator may maneuver evasively to avoid attacks on his vehicle. Treat this as a dodge; see *Dodging* (p. 374). A vehicle's Dodge score is (operator's control skill/2) + vehicle's Handling, rounded down. For example, a biker with Driving (Motorcycle)-14 on a motorcycle with Handling +1 has a Dodge of 14/2 + 1 = 8.

The GM may require Dodge rolls to avoid other hazards, such as baby carriages and potholes, or to maneuver through tight spots. These could be *instead* of control rolls, or to avoid disaster *after* failed control rolls!

Occupants who are free to move (not strapped in, etc.) may dodge attacks specifically targeted on them, but they get no defense against stray shots or attacks that penetrate the vehicle and go on to strike them.

Combat Results and Hit Location

A vehicle suffers damage like any other artifact. Certain hit locations have special damage effects – see the *Vehicle Hit Location Table* (p. 554) for details.

Scaling Damage

Large vehicles such as tanks, warships, and starships can have huge DR and HP scores, and their weapons can inflict massive amounts of damage. To avoid excessive die rolling, it is best to adjust the damage scale.

Decade Scale (D-Scale): Use this for battles involving tanks or ships – or even supers. Divide DR, HP, and damage dice by 10 before combat starts. Round fractions of 0.5 or more *up*. (*Exception:* If the converted damage is under 1d, treat fractions up to 0.25 as 1d-3, fractions up to 0.5 as 1d-2, and larger fractions as 1d-1.) Convert damage multipliers to dice first; e.g., 6d×25 becomes 150d, which scales to 15d. Do *not* divide armor divisors.

Century Scale (C-Scale): Use this for combats involving *huge* vehicles, such as giant space battleships. Follow the rules above, but divide by 100 instead of by 10.

Example: A tank has DR 700 and 300 HP; its main gun does 6d×30(2) and its machine gun does 7d. In D-scale, it would have dDR 70 and dHP 30; its main gun would do 6d×3(2) and its machine gun would do 1d-1.

After the battle, multiply remaining HP by 10 or 100, as appropriate, to convert back.

An attacker can sometimes target a vehicle's occupants directly. This is only possible if the vehicle has an exposed rider (E), glass windows (G or g), or an open cabin (O), or if the occupants are on a ship's deck, cargo bed, etc. A rider has no cover; someone in an open or glass-windowed vehicle has partial cover (legs, groin, and half the torso). There is an extra -1 to shoot into or out of a window unless the occupant is actually leaning out.

There are usually dire consequences when a vehicle's operator is taken out of action.

Hit locations for a given vehicle appear in the Locations column on the relevant vehicle table, or in the vehicle's text description. Assume that attacks are aimed at the vehicle's body (equivalent to the torso on a living being) unless the attacker specifically stated that he was targeting another location. Alternatively, roll randomly for hit location. In all cases, only exposed locations can be hit; e.g., if a tank is behind a hill and only its turret is visible, the turret is the only valid target.

Collisions

For the purpose of attack and defense rolls, any attempt to use a vehicle as a weapon is a slam (see *Slam*, p. 368), with the operator rolling against control skill to hit. If the intent is to ram, calculate collision damage normally. If the intent is to force another vehicle off the road, assess damage for a "side-on" collision, but damage is knockback only. For details, see *Collisions and Falls* (p. 430).

Who's at the Wheel?

There are usually dire consequences when a vehicle's operator is taken out of action (killed, fell off, abandoned the controls, etc.). A one- or two-wheeled vehicle, or a mecha walking on two or three legs, rolls over as if it had lost control. Other types of vehicle just charge ahead until they hit something – but roll 1d each turn. On a 6, or *any* roll greater than the vehicle's SR, the vehicle goes out of control. Someone else can regain control, but may need a few seconds to reach the controls, depending on where he was. If the former operator is incapacitated, skill rolls will be at -2 or worse while his body remains in the way!

Leaking

A leak occurs when a floating vehicle suffers penetrating damage to the body below its waterline, a balloon or airship takes *any* penetrating damage to the body, or a submerged vehicle takes penetrating damage to *any* location but an external mount. Use the *Bleeding* rule (p. 420), but replace the First Aid roll to stop bleeding with a Crewman roll to patch the hole.

Electronics

There is a wide variety of electronic gadgets in most TL6+ game worlds. Among the most important of these – for adventurers, at least – are communicators, sensors, and computers.

Communicators

Standard communicators are *radios*. They transmit signals by modulating the intensity, frequency, or phase of long-wavelength electromagnetic radiation. This limits them to the speed of light (186,000 miles per second); as a result, they are effectively instantaneous for planetary communications but have a noticeable delay over interplanetary distances. Note also that ordinary radio frequencies cannot penetrate more than a few yards of water.

Depending on the TL and equipment, communicators can send code, voice, text, video, or data. Many TL8+ communicators incorporate satellite links or computer systems as well. See *Communications and Information Gear* (p. 288) for the range, cost, and weight of some sample communicators.

Communicators use the rules under the Telecommunication advantage (p. 91), except that Electronics Operation (Communications) skill rolls replace IQ rolls. To extend range, make an Electronics Operation (Communications) roll at -1 per 10% added to range, to a maximum extension of 100%.

The Telecommunication rules also give several alternatives to radio, including laser and infrared communications. More exotic options are available in some settings.

Sensors

Sensors grant the operator one or more sensory advantages (Infravision, Telescopic Vision, etc.) while used. Statistics for a number of sensors appear in Chapter 8; see *Law Enforcement, Thief, and Spy Gear; Optics and Sensors;* and *Weapon and Combat Accessories* (all p. 289).

Sensors fall into four broad categories:

Hands-Free Sensors: Sensors worn as goggles, glasses, helmet visors, etc. They require a Ready maneuver to switch on or off, and function constantly once activated. Visual sensors replace unaided vision while active, but typically restrict peripheral vision. To get around this, take a Ready maneuver to switch off or remove the sensor.

Manual Sensors: Binoculars, hand telescopes, metal detectors, radar guns, and similar handheld devices are generally more powerful and longer-ranged than hands-free units, but require one or two hands to operate. To use the sensor, the operator must take continuous Aim maneuvers, which prevents him from moving quickly or attacking.

Sights: Sensors attached to a weapon, camera, etc. – usually to help aim it. To use the sights, the device to which they are attached must be ready (occupying one or two hands). If the sensor is attached to a weapon, the user benefits from it only while making an aimed attack. To observe through the sights without firing requires Aim maneuvers, just as for a manual sensor.

Vehicular or Mounted Sensors: Long-range sensors mounted in a vehicle or on a tripod. Most display information on a screen or similar readout. The user must sit, kneel, or stand next to the sensor to operate it. Some such sensors are "manual" (e.g., TL6-7 "analog" radar and sonar sets); the user must operate the controls by hand. Others are "hands-free" (e.g., digital sensors that display data on a head-up display); the user can take other actions while using them.

Using Sensors

If a sensor provides the user with a completely new sense (e.g., radar, for a human), he must roll against Electronics Operation (Sensors). If it just augments a sense he already possesses, he need only make an ordinary Sense roll – although an unusually complex sensor might call for a roll against Electronics Operation or another skill. For example, a human would make a Vision roll to use an ordinary telescope, but a large astronomical telescope might require an Astronomy roll.

Passive Visual Sensors

These systems work like normal vision, but extend the limits of human sight. They are available in all four categories described above.

Telescopic Optics: Telescopes, binoculars, electro-optical scopes, etc. give Telescopic Vision (p. 92):

Magnification	*Level*
2-3×	1
4-7×	2
8-15×	3
16-31×	4

Further levels follow the same progression.

Image Intensifiers (TL7): Most often called "night vision" devices, these electronically amplify ambient light to generate a monochrome (usually green) picture. They do *not* work in total darkness, fog, etc. They grant Night Vision (p. 71); the level varies from 7 at early TL7 to 9 at TL8+. Better systems include electro-optical magnification, giving Telescopic Vision 1-4 on portable systems, more on vehicular systems.

Thermal Imaging Sensors (TL8): These detect the infrared spectra emitted by objects at different temperatures, and use this information to build up a false-color television image of the environment. They *do* work in total darkness, smoke, etc. The user sees as if he had Infravision (p. 60), often with Telescopic Vision 1-3. Most are two to three times as heavy and four to six times as costly as image intensifiers.

Hyperspectral Imaging Sensors (TL9): These sensors process infrared, visible, and ultraviolet light to create a single image. This makes them extremely effective at picking out camouflaged objects. They give Hyperspectral Vision (p. 60) and Telescopic Vision. These devices are rare and *expensive* at TL8, but become standard vehicular sensors at TL9+, replacing thermal imaging sensors.

Active Sensors

"Active" sensors detect objects by bouncing energy off them and analyzing the returned signal. Radar (TL6), imaging radar (TL7), and ladar (TL8) emit electromagnetic radiation, while sonar (TL6) uses sound.

Active sensors never suffer darkness penalties. They can sense objects out to their rated maximum range at no range penalty; each doubling of range beyond that gives -2 to skill. The major limitation of all such sensors is that specialized but inexpensive detectors can detect the scanning pulse at up to twice their range. Each technology also has a number of *specific* capabilities and drawbacks; for details, see the Scanning Sense advantage (p. 81).

Before TL9, only vehicular or mounted units are likely to provide an actual picture of the surroundings. At TL6-8, a portable active sensor (e.g., a police radar gun) usually only gives the range and speed of objects it detects.

Computers

The programmable digital computer first appears at TL7 and rapidly becomes smaller, cheaper, and faster at higher TLs. In some settings, computers might even attain sufficient computing power to achieve sentience!

Complexity

Every computer has a "Complexity" rating. This is an abstract measure of processing power. Each Complexity level represents roughly a tenfold increase in overall capability over the previous level. A computer's Complexity determines what programs it can run. Each piece of software has a Complexity rating, too, and can only run on a computer of that Complexity level or higher; e.g., a Complexity 2 program requires a Complexity 2 computer or better.

Complexity also determines how many programs a computer can run simultaneously. It can run two programs of its own Complexity, 20 programs of one Complexity level less, 200 programs of two Complexity levels less, and so on. For instance, a Complexity 2 computer could run two Complexity 2 programs or 20 Complexity 1 programs – or one Complexity 2 program and 10 Complexity 1 programs.

The best mid-TL8 (2004-era) desktop systems are Complexity 4; more typical systems are Complexity 2-3.

Data Storage

Every computer has a data-storage capacity, rated in megabytes (MB), gigabytes (GB), or terabytes (TB). One GB is about 1,000 MB; one TB is roughly 1,000 GB or 1 million MB. Some computers have removable media (e.g., disks) as well; their capabilities depend on the setting.

Data Storage Table

Data	*Size*
Lengthy novel	10 MB
Complete national road atlas	100 MB
Navigation charts of entire ocean or country	1,000 MB (1 GB)
Plans of 100 small or 10 complex vehicles	1 GB
Detailed global navigation charts	100 GB
Public or school library	100 GB
City or college library	1,000 GB (1 TB)
Big city or university library	10 TB
Large university or copyright library	100 TB
Human mind	100 TB

Other Capabilities

A computer requires at least one "terminal" if humans are to use it. The computer may be integrated into this terminal or located remotely. At TL7-8, a terminal is, at minimum, a keyboard and monitor. At late TL8 and beyond, voice recognition, virtual-reality glasses and gloves, neural interfaces, etc. might replace such clumsy hardware.

It is possible to connect a single terminal to multiple computers, giving the user access to them all. Without special hardware, however, the user can only work with one computer at a time, and must take one second to switch between computers.

If two computers are compatible (GM's decision), it is possible to link them via cable or communicator. The person trying to establish contact must know the "address" of the other computer (telephone number, numbered location on a network, etc.) and any relevant passwords. Once in contact, two computers with suitable software can share data, and the less-powerful computer can act as a terminal for the more capable one.

Finally, any TL8+ computer equipped with a microphone or camera can act as a digital recorder, to the limit of its data-storage capacity.

Software

The programs available depend on the setting. Some general notes:

- *Complexity:* Every program has a Complexity rating, as defined above.
- *Capabilities:* Some programs simply provide entertainment (e.g., a video game) or a practical function (e.g., e-mail).

Others give the user a bonus to perform a specific task. For instance, financial software might give +1 to Accounting when preparing taxes. Treat such bonuses identically to those for good equipment (see *Equipment Modifiers*, p. 345).

Still others are *mandatory* for some tasks – notably technical tasks at TL8+. Without them, the user's skill will operate at a lower TL. For example, an engineer might require a Complexity 3 CAD/CAM program to design a jet; without it, his Engineer/TL8 (Aircraft) skill might function as Engineer/TL7. These programs are generally Complexity 2 at TL7, Complexity 4 at TL8, Complexity 6 at TL9, and so on. A program of higher than minimum Complexity provides a bonus or reduces the time required.

Programs intended for robots may grant advantages, disadvantages, skills, or even pre-programmed personalities! These can be hardwired or modular (see *Modular Abilities*, p. 71).

- *Cost:* Most programs have a cost in $. This is the price of a single, legal copy, with documentation. Each computer requires its own copy. It is possible to copy software for free, but this is often illegal. But a computer can run as many *instances* of a program as its Complexity allows; it does not require a separate copy per instance.

New Inventions

They laughed at me at the university, the fools! But I'll show them! I'll show them all!

The GM may wish to let PCs invent new technology in the course of the campaign. The rules below cover *realistic* innovation at the inventor's tech level or one TL in advance of that, at most. For rules governing larger-than-life inventors who can build more fantastic gadgets, see *Gadgeteering* (p. 475).

Before starting, the player must describe to the GM what he wants to invent and how he thinks it will work. This will help the GM determine the skills and equipment required, the cost and time involved, and the difficulty of the task. If the player's description is especially clear or clever, the GM should give +1 or +2 to all invention-related skill rolls.

Required Skills

First, the GM decides on the "invention skill" needed for the task, based on the player's description of the invention. The inventor must know this skill to have *any* chance of success. Armor, vehicles, weapons, etc. require the relevant Engineer specialty. Other inventions might call for different skills: Alchemy for magic potions, Bioengineering for biotechnology, Computer Programming for software, Thaumatology for magic spells, and so on.

At the GM's discretion, a particular invention might *also* require skill in one or more related subjects. For instance, inventing a new telescope might require Astronomy skill. If so, the inventor rolls against the *lower* of this skill or his invention skill in the rules below.

Complexity

Next, determine the "complexity" of the invention. This is entirely up to the GM, who can assign complexity arbitrarily, base it on the minimum skill level required to come up with the invention, or relate it to the retail price of the item (especially for gadgets listed in worldbooks or real-world catalogs). Use the following table for inspiration:

Complexity	*Required Skill Level*	*Retail Price*
Simple	14 or less	Up to $100
Average	15-17	Up to $10,000
Complex	18-20	Up to $1,000,000
Amazing	21 or more	Over $1,000,000

For computer programs, use the numerical Complexity rating instead. If a cost or time calculation *requires* one of the four ratings above, treat Complexity 1-3 as Simple, 4-5 as Average, 6-7 as Complex, and 8+ as Amazing.

Concept

After determining complexity and required skills, the GM makes a secret "Concept roll" against the inventor's invention skill to see whether he comes up with a testable theory. This requires no special equipment – except perhaps a tablecloth to draw on and several gallons of coffee!

Modifiers: -6 if the invention is Simple, -10 if Average, -14 if Complex, or -22 if Amazing (for a computer program, apply a penalty equal to *twice* the Complexity rating instead). +5 if you have a working model you're trying to copy, or +2 if the device already exists but you don't have a model; +1 to +5 if the item is a variant on a existing one; -5 if the basic technology is totally new to the campaign (*regardless* of TL); -5 if the device is one TL above the inventor's TL.

Each inventor may roll once per day. Complexity doesn't affect the time required – the basic concept for an Amazing device is often a simple insight . . . it's the *implementation* that can get tricky.

On a success, proceed to the next step. On a failure, the inventor makes no breakthrough but may try again the next day at no additional penalty. On a critical failure, the inventor comes up with a "flawed theory" that *looks* good but that will never work in practice – go on to the next step, but note that it is doomed to failure.

Of course, if the inventor has somehow obtained actual blueprints for the device, he can skip this stage altogether!

Prototype

A success – or critical failure – on the Concept roll gives the inventor a theory he can test in the laboratory. The next step is to construct a prototype (working model). This requires a second roll against invention skill. The GM makes this "Prototype roll" in secret.

Reinventing the Wheel

Adventurers may wish to "invent" devices of a *lower* TL than their own. Reduce complexity by one step per TL by which the inventor's TL exceeds that of the invention, to a minimum of Simple. If suitable historical reference materials are available, use the *higher* of the inventor's Research skill or his invention skill for the Concept roll.

Modifiers: All modifiers listed for Concept rolls; +1 per assistant with skill 20+ in one of the skills required for the invention, to a maximum of +4; -1 to -10 (GM's discretion) if the inventor must make do with anything less than the most advanced tools and facilities for his TL.

On a success, the inventor proves his theory and creates a prototype. On a failure, he may try again, provided he has the time and money (see below). On a critical failure, an explosion or accident occurs. This inflicts *at least* 2d damage to the inventor and each assistant – and destroys the facilities, which must be rebuilt at full cost before making another attempt.

If the inventor was working with a flawed theory, he will never create a working prototype (this is why the GM rolls in secret!), but a *critical success* on the Prototype roll lets him realize that his theory was bad.

Time Required

Each Prototype roll requires 1d-2 days if the invention is Simple, 2d days if Average, 1d months if Complex, or 3d months if Amazing. Physically *huge* items (e.g., spaceships and military vehicles) may take longer, at the GM's discretion. Divide time required by the number of skilled people working on the project. Minimum time is always one day.

Cost

The facilities required to build a prototype cost $50,000 if the invention is Simple, $100,000 if Average, $250,000 if Complex, or $500,000 if Amazing. *Triple* these costs if the invention is one TL above the inventor's TL. Divide costs by 10 if the inventor has appropriate facilities left over from a related project of equal or higher complexity. Each inventor who wishes to attempt a Prototype roll must pay the facilities cost "up front" *before* making his first attempt.

In addition, each attempt to produce a prototype has a cost equal to the retail price of the item being built, as given in the appropriate game supplement or real-world source, or as set by the GM. *Triple* this cost if the invention is one TL in advance of the inventor's TL.

Testing and Bugs

The majority of prototypes have shortcomings, or "bugs." Critical success on the Prototype roll means there are no bugs; success by three or more gives 1d/2 minor bugs; and any other success gives 1d/2 major bugs and 1d minor bugs. Minor bugs are annoying, but not critical. Major bugs are catastrophic to the function of the device – and sometimes to the user as well!

To find bugs requires testing. Once per week of testing, roll vs. operation skill (e.g., Driving for a car, Electronics Operation for a radio) at -3. Each success finds one bug; a critical success finds *all* bugs. A failure triggers a major bug, if present, or finds nothing. A critical failure causes a problem similar to a major bug without encountering any *real* bugs; alternatively, the tester is convinced, erroneously, that no bugs remain.

Bugs that remain after testing surface on any operation skill roll that fails by 5 or more. A major bug always surfaces on a critical failure.

Production

Building a copy of the invention costs 20% of the retail price if you only need to buy parts, or full retail price if you must pay for parts and labor. Time required to produce each copy is *half* that required for a Prototype roll. For instance, each copy of a Complex item takes 1d/2 months.

A production line is more efficient. To set up a production line costs 20 times the retail price of the item. The production line makes one copy of the item in 1/7 the time it took to build a prototype or in (retail price/100) hours, whichever is *less*. Each copy costs 20% retail price for parts, or 50% for parts and labor.

Funding

As explained under *Tech Level and Starting Wealth* (p. 27), the higher the tech level, the greater the starting wealth. However, the cash outlay required for inventing and gadgeteering *doesn't* scale with TL – it's fixed. Thus, the lower the TL, the higher the relative cost of innovation.

This might model reality well, but it takes a lot of the fun out of being a low-tech gadgeteer. The GM may use these optional (but realistic) rules to remedy this:

Patrons: Historically, many inventors had wealthy patrons to pay their way. If you have a Patron with the +100% "Equipment" enhancement, you may attempt a *single* roll against your Patron's frequency of appearance when you start a new invention. On a success, the Patron foots the bill. Most Patrons will demand access to the invention; if you deny this, you are likely to lose your Patron!

Professional Inventors: You can pay the costs gradually by building the tools, facilities, etc. yourself. You *must* pay at least 10% "up front." Divide the remainder by your monthly income and add that many months to the time required. You earn *no* money during this time, but you must still pay your monthly cost of living. Independent Income (p. 26) can be helpful here – it might represent royalties from your *last* invention.

Investors: If your invention promises to be profitable, others might be willing to cover your costs. Make a Finance roll with the same modifiers as your Concept roll (this represents perceived risk). On a success, you receive funding. Note that your investors own shares of your invention and any profits!

GADGETEERING

Fiction is full of inventors who can design devices that are far ahead of their time. Below is advice on how to relax the requirements and restrictions of the *New Inventions* rules for such "gadgeteers." These benefits apply *only* to inventors with the Gadgeteer advantage (p. 56).

INVENTING GADGETS

Before beginning, the player must describe the proposed gadget to the GM in a logical manner, and offer an explanation of how it is supposed to work. The item should not actually violate physical laws (which eliminates FTL travel, antigravity, teleportation, etc.) *unless* the GM rules that such "superscience" is possible in the game world.

The GM is free to accept or reject the design, depending on its feasibility. If he accepts the item, he assigns it a tech level (see *Tech Levels*, p. 511). The stronger, smaller, or more effective the gadget is, relative to an item that performs a similar function at the campaign's TL, the higher its TL should be.

Required Skills

This is unchanged from *New Inventions*. A gadgeteer must have a good understanding of the field in which he is working. The Gadgeteer advantage represents a broad, intuitive capacity for inventing – it does not grant specific scientific or technical knowledge. Most gadgeteers focus on one or two skills to start out with.

Complexity

Use the usual complexity levels, but do not confuse complexity with tech level. A ray gun that sells for $1,000 at TL10 is most likely an Average item, however amazing it might be in a TL8 setting.

Concept

Gadgeteers have far milder penalties on their Concept rolls. There is *no penalty at all* for a Simple invention, and only -2 for an Average one, -4 for a Complex one, or -8 for an Amazing one. For software, use Complexity (not twice Complexity). Ignore the -5 for a technology that is totally new to the campaign.

Complexity	*Base Cost*	*TL Increment*
Simple	$50,000	$100,000
Average	$100,000	$250,000
Complex	$250,000	$500,000
Amazing	$500,000	$1,000,000

A gadgeteer is not limited to inventions only one TL advanced. He may attempt to create a device of *any* TL, at a flat -5 per TL above his own.

Prototype

All the benefits listed for Concept rolls apply equally to Prototype rolls. Furthermore, the GM may choose to waive the penalty for questionable equipment. Many fictional gadgeteers work out of a basement or a garage!

Time Required: This is unchanged. However, the times under *New Inventions* assume an eight-hour day, which might not be enough for a cinematic gadgeteer! If the inventor pulls long shifts, he must make daily HT rolls as described under *Long Tasks* (p. 346). On a failure, he has no skill penalty – he just loses FP. If he reaches 0 FP, he collapses and must rest for 1d days to recover. Add this to the time required.

Cost: Calculate the cost of the necessary facilities using the table above. Use *Base Cost* for an item at the campaign TL, and add the amount under *TL Increment* for each TL beyond that. A gadgeteer may divide these costs by 10 if he has already paid for facilities for a similar project of equal or higher complexity *and* tech level.

Example: A gadgeteer working on a Complex item must pay a Base Cost of $250,000 for the necessary facilities. If his invention is a device three TLs above the campaign TL, he must add three times the TL Increment for a Complex gadget, or $1,500,000, bringing the total to $1,750,000.

As with regular inventions, there is also a cost for each attempt to build a prototype. For an invention at the campaign TL, this is just the retail price of the item. For a device from above that TL, start with the item's retail price at its native TL, double this for each TL of difference, and *accumulate* the cost!

Example: A gadgeteer working on an invention with a $4,000 retail cost would pay $4,000 per attempt to create a prototype if the device were at the campaign TL. If it were three TLs more advanced, he would double the cost three times and add: $4,000 + $8,000 + $16,000 + $32,000 = $60,000!

Gadget Bugs Table

When a gadgeteer invents a gadget of a *higher TL than his own*, the GM should roll 3d on the following table for each bug (or simply pick something appropriate).

3 – Roll 3d per use or hour of constant use. On a 6 or less, the gadget attracts the unwelcome attention of aliens, time travelers, Men in Black, Things Man Was Not Meant To Know, etc. (GM's choice.)

4 – The gadget is *huge!* If it would normally be handheld, it is so large that it needs a vehicle to move it around; if it would normally be vehicle-borne, it must be mounted in a *really big* vehicle (like a battleship) or a building; and so on.

5 – Each use or hour of constant use consumes $250 worth of resources – exotic chemicals, radioactives, etc.

6 – The device has 1d+1 side effects; see the *Random Side Effects Table* (p. 479).

7 – Anyone carrying the gadget is so inconvenienced by its awkward shape and balance that he has -2 to DX. Vehicles or vehicular gadgets give -2 to vehicle control rolls.

8 – The gadget has 1d-2 (minimum one) side effects.

9 – A powered device requires a *big* power supply – for instance, a vehicle power plant. If it would normally require this much power, it needs to be tied into a continental power grid, and causes brownouts whenever used. If the device is unpowered, treat this result as **10.**

10 – The gadget is twice as large, twice as heavy, and uses twice as much power as it should. If it's a weapon, halve its damage, range, and Accuracy instead.

11 – The gadget gets too hot to handle after being used, and must cool down for 10 minutes before it can be used again. (If used before it cools off, it burns out in a shower of sparks and inflicts 1d burning damage on the user.)

12 – Each use or hour of constant use consumes $25 worth of resources.

13 – The gadget is unreliable, and fails on any operation skill roll of 14 or more.

14 – The gadget requires minor repairs after every use, and does not work until repaired.

15 – The device recoils like a heavy projectile weapon (even if it isn't a gun). The user must make a DX roll for every use or be knocked down.

16 – The gadget is *very* unreliable, and fails on any operation skill roll of 10 or more.

17 – The device is overly complicated. If it is a weapon, it takes *five* seconds to ready (this represents pushing buttons, setting dials, etc.). Other gadgets require two hours of painstaking preparation before each use.

18 – On any critical failure using the device, it self-destructs . . . spectacularly. The user must make a DX roll at -2 or suffer 2d injury as a result. The gadget is *gone* – it cannot be repaired or cannibalized for parts.

Testing and Bugs

For a gadgeteer, success by 3 or more results in no bugs, while a lesser success gives 1d/2 minor bugs. There is no chance at all of a major bug. If the device is *above* the gadgeteer's TL, roll once on the *Gadget Bugs Table* (box) for each "minor" bug.

Production

The standard rules apply, but use the tech level-adjusted retail price in all calculations. In the example above, retail price would be $60,000 (not $4,000) for production purposes.

Quick Gadgeteering

Inventors with the Quick Gadgeteer advantage require *very* little time or money to do their work. They can throw together a useful gadget in minutes, using only the contents of a random glove compartment. This talent is *completely* unrealistic; most GMs will want to restrict it to highly cinematic campaigns!

Quick gadgeteers use the *Inventing Gadgets* rules (p. 475) like regular gadgeteers, with the following modifications.

This talent is ***completely*** *unrealistic.*

Concept

Apply the favorable modifiers given for regular gadgeteering, but each Concept roll requires only *1d minutes!*

Prototype

Apply the modifiers given for regular gadgeteering to the Prototype roll.

Time Required: A Simple gadget takes only 2d minutes to assemble, an Average one calls for 1d-2 hours (a roll of 1 or 2 indicates a 30-minute assembly time), a Complex one requires 1d hours, and an Amazing one takes 4d hours.

Cost: The quick gadgeteer is a master at cannibalizing parts and scrounging for equipment. If there are *many* sources of parts, the GM should allow a Scrounging roll to locate usable components. If the available resources are more limited, the GM may require a roll against a specialized skill; e.g., if the only thing available is a wrecked '65 Mustang, the GM might call for an Engineer (Automobiles) or Mechanic (Automobiles) roll to find the necessary hardware. These rolls are at no

modifier for a Simple gadget, -2 for an Average one, -6 for a Complex one, and -10 for an Amazing one. On a success, the total cost for the project is only (1d-1) × $100, with a roll of 1 indicating *no* cost.

If the gadgeteer *must* buy the needed items, calculate facilities and prototype costs as for a regular gadgeteer, and then divide by 100.

A critical failure on the Prototype roll ruins the parts – the gadgeteer must find new ones before construction can resume.

Gadgeteering During Adventures

Gadgeteers can also analyze and modify gadgets encountered during adventures.

Analysis

To figure out a mysterious piece of equipment, the gadgeteer rolls as if he were making a Concept roll to invent the item from scratch, using the same skills and modifiers. This takes 1d×10 minutes for a regular gadgeteer, or 1d minutes for a quick gadgeteer.

Modification

After successfully analyzing a gadget, the gadgeteer may attempt to modify it. He rolls as if he were making a Prototype roll, using the same skills and modifiers. This takes 1d hours for a regular gadgeteer, or 1d×10 minutes for a quick gadgeteer. All modifications in function are subject to GM approval!

Gadgets for Non-Gadgeteers

Anyone can own and use gadgets. Only those who can alter their capabilities or invent new ones must buy the Gadgeteer advantage. But it would be unfair to let non-gadgeteers have gadgets for free – Gadgeteer costs points as much for the gadgets themselves as for the ability to build them. The GM should adopt one of the following rules to maintain game balance.

Gadgets Cost Money

The GM may permit the PCs to hire a gadgeteer to design and built gadgets for them. Finding such a hireling should be an adventure in itself! In addition to the hireling's pay, the PCs must pay the standard facilities cost for development *and* 150% of the prototype cost per item. Work out these costs as described for regular (not quick) gadgeteering.

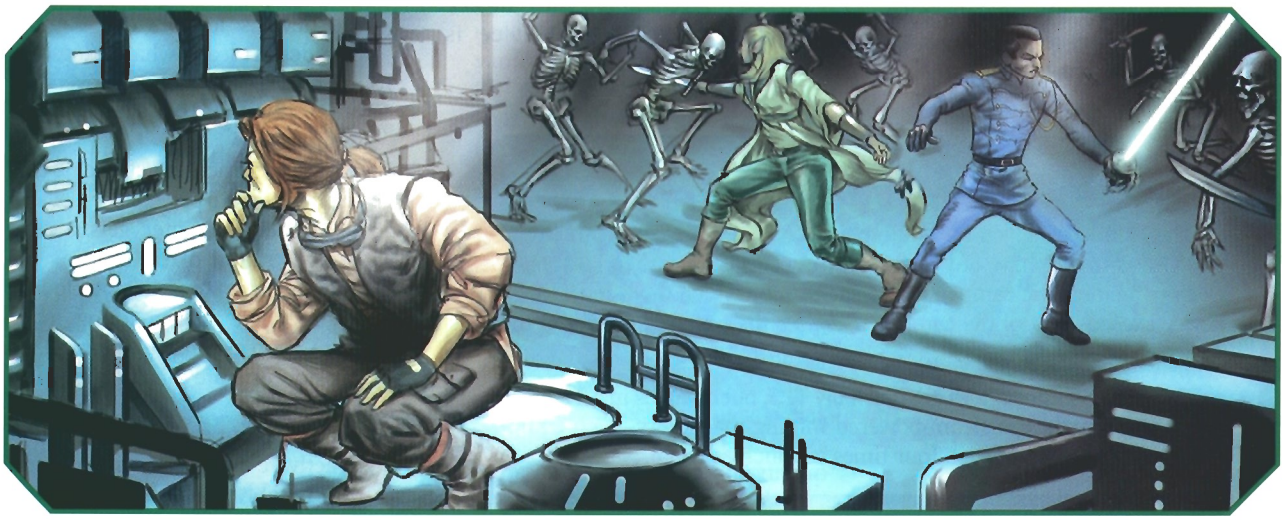
This option has a "hidden" point cost: to cover these expenses, the heroes almost certainly need to take high Wealth (p. 25) or trade points for money (see *Trading Points for Money*, p. 26).

Gadgets Require an Unusual Background

The GM might require gadget users to have one of these Unusual Backgrounds:

Unusual Background (Gadgeteer Friend): If an adventurer has a gadgeteer friend who equips him with useful inventions, he has an Unusual Background. This is an unabashed game-balance measure – it is *unbalancing* to let a single gadgeteer outfit an entire party at no point cost, however *realistic* that might be. *15 points.*

Unusual Background (Invention): The character possesses one specific gadget without being a gadgeteer. This must be a unique invention; if it weren't, it would just be Signature Gear (p. 85). The player must explain how his character came to have the item: he invented it through a lucky accident, his inventor grandfather left it to him, aliens planted the blueprints in his head telepathically, etc. The points in this trait buy a single, bug-free item. The owner can copy it, but he must pay the usual production costs. *5 points if the gadget is Simple, 15 points if Average, 30 points if Complex, or 50 points if Amazing.*



Futuristic and Alien Artifacts

Adventurers sometimes encounter advanced or alien devices. These rarely come with instruction manuals, and often rely on scientific principles unknown at the heroes' tech level. Gadgeteers may use the *Gadgeteering During Adventures* rules (p. 477) to deduce the function of mysterious artifacts. Everybody else must use the rules below.

First, the experimenter chooses an operation skill. This choice is often a guess – although the GM might provide clues that make it an *educated* guess. Those with the Intuition advantage can use it to narrow down their choice of skills.

Next, the GM decides whether the chosen skill is appropriate. An "appropriate" skill is one used to operate a device known to the experimenter that serves a purpose similar to that of the artifact. It need not be the artifact's *actual* operation skill. For instance, Guns is appropriate for a ray gun fired using Beam Weapons skill, while First Aid is wholly inappropriate.

Then the experimenter rolls against the chosen skill. If this is an appropriate skill, the GM rolls 3d, adds the investigator's margin of success or subtracts his margin of failure, and consults the *Enigmatic Device Table*, below. If the skill is inappropriate, treat the roll as a failure by 10; in other words, roll 3d-10 on the table.

Exception: If the experimenter rolls a critical success on an inappropriate skill, he realizes that the chosen skill doesn't apply and may try another skill.

Each attempt takes one minute. Repeated attempts are possible, but the roll on the table is at a cumulative -1 per attempt after the first. Someone else can start from scratch, though – other people often bring fresh insights to a problem.

Enigmatic Device Table

Roll 3d, apply the modifiers below, and consult the table. For repeated attempts by the same experimenter, reroll duplicate results.

Modifiers: A bonus equal to the margin of success, or a penalty equal to the margin of failure; +2 for Danger Sense; +4 for Intuition; +2 if the device has labels in a language the experimenter can read – or +4 for actual manuals (at the GM's option, a Research roll at -5 might turn these up); +1 to +5 for a simple device, or -1 to -5 for a complex one; -1 for manipulating the device at a "safe" distance using psi or magic, -2 for probing it using tools or robotic manipulators, or -4 for poking it with a stick, hitting it with a hammer, etc.; -1 per attempt after the first.

0 or less – The experimenter takes 3d damage and the device is destroyed. (If the device is indestructible, it vaporizes everything within 10 yards . . .)

1 – The device's primary effect is applied to the experimenter, if possible; if not, he takes 3d damage from the device.

2 – The device's primary effect is applied to someone nearby, if possible; if not, someone nearby takes 3d damage.

3 – The experimenter takes 2d damage.

4 – Someone nearby takes 2d damage.

5 – The experimenter takes 1d damage.

6 – Someone nearby takes 1d damage.

7 – The experimenter suffers superficial damage (e.g., his eyebrows are burned off).

8 – Someone nearby suffers superficial damage.

9 – The experimenter suffers an embarrassing mishap: he gets a body part stuck to (or *in*) the device, or suffers an unpleasant minor side effect.

10 – The experimenter forms an erroneous theory concerning the device's purpose, possibly being misled by a secondary function or side effect.

11 – Nothing happens. The experimenter gains no useful insight into the device's nature or operation, but at least it didn't do anything nasty . . .

12 – The experimenter locates one of the device's less-obvious controls (but doesn't learn what it does).

13 – The experimenter discovers the on/off switch (or safety, for a weapon).

14 – The experimenter gets a clue concerning the purpose of the device.

15 – The experimenter gets a clear demonstration of the device's primary function (possibly by blowing a large hole in something inanimate – and expensive – nearby). He can now operate this function, at -4 to skill.

16 – The experimenter discovers how to activate a single secondary function reliably (that is, with no skill penalty).

Anachronistic Devices

The tech levels given for equipment assume a "realistic" campaign. The GM is free to have any technology appear at an earlier TL – especially in a cinematic campaign. For each TL by which the listed TL of a device exceeds that of the campaign, *double* the cost and weight of the device.

Example: Steam engines are normally TL5, but dwarves in a TL3 fantasy setting might use steam-powered mining machinery. Such equipment would cost and weigh four times as much as usual.

17 – The experimenter deduces the location and general nature of *all* controls pertaining to the device's secondary functions, and can use these functions at -4 to skill.

18 – The experimenter figures out how to activate the primary function of the device at no skill penalty.

19 – The experimenter discovers *all* of the device's functions, and can use them at no skill penalty.

20 or more – As **19,** plus the experimenter finds a totally serendipitous – and useful – application of the device that the creators never thought of!

Weird Technology

"Alien" does not begin to describe some technology: gadgets that defy natural laws (including a few we haven't discovered); devices from bizarre dimensions; artifacts that mix magic with science, or that contain (or *are*) demons . . . Such things are best described as "weird."

Weird technology need not be advanced – it might have been around since the Bronze Age! In fact, weirdness rarely has *anything* to do with tech level. Part of what makes a technology weird is that it defies the standard notions of scientific progress. It's *different,* and even geniuses are at a loss to explain it.

Weird Science

An inventor may choose to roll against Weird Science skill (p. 228) to get a bonus to his Concept and Prototype rolls. This bonus is +5 if he is using the *New Inventions* rules (p. 473). It is only +1 if he is using *Gadgeteering* (p. 475), as those rules already give large bonuses for the borderline-weird concepts used by gadgeteers. The drawback is that the invention *will* have weird side effects. Roll 1d-3 for the number of side effects (minimum one), and then roll that many times on the *Random Side Effects Table,* below.

Gadgets

As mentioned above, even gadgeteers who do not use Weird Science are venturing into the realm of the weird. A buggy gadget can occasionally have weird side effects – see the *Gadget Bugs Table* (p. 476).

Experimental Devices

The GM can roll on the *Random Side Effects Table* whenever adventurers use an experimental device given to them by or stolen from a mad scientist.

Magic Items

There is no reason to limit strange side effects to technological devices! At the GM's option, when a wizard fails his roll to create a magic item by only 1, the enchantment works but the magic item acquires 1d-3 side effects (minimum one), determined by rolls on the *Random Side Effects Table.*

Random Side Effects Table

Roll 3d, or choose something appropriate.

3 – Each use causes a small, cumulative change in the user's body (mind). Roll against HT+4 (IQ+4) once per use. On a failure, the user acquires -1 point toward a physical (mental) disadvantage of the GM's choice.

4 – Each use inflicts 1d injury on the user (ignore DR).

5 – Each use causes 1 point of injury to the operator (ignore DR).

6 – The gadget transforms someone within 10 yards into *something else* (alien, animal, plant, etc. – GM's choice) for 10 seconds.

7 – The device makes an incredibly annoying, high-pitched noise when used. This gives everyone within 20 yards a headache for 10 minutes (-2 to DX, IQ, and self-control rolls), and the user gets a migraine (-4 to these rolls) for 20 minutes. Earplugs don't help, although Deafness does.

8 – Use of the gadget disrupts electronics: TVs and radios within one mile get nothing but static, other electronics within 100 yards fail on a roll of 7 or less on 3d. Within 10 yards, even simple electrical devices are affected. This is a classic side effect for UFOs! Magic items produce local mana disruptions instead, giving -3 to all spell rolls within 10 yards for the next 10 seconds.

9 – The device produces noxious fumes in a four-yard radius. Anyone in the area must make a HT+3 roll every second. On a failure, they are nauseated (see *Irritating Conditions,* p. 428) for five minutes.

10 – The gadget produces a loud hum in operation (+3 to Hearing rolls to notice it).

11 – Impressive but harmless special effects – beams of light, showers of sparks, etc. – accompany the use of the device. The source of the effects is obvious to any observer. Anyone in the area gets a Vision roll at +5 to notice something is going on.

12 – The gadget emits dense clouds of steam or smoke over a four-yard radius while in operation. Treat as a Fog spell (p. 253).

13 – Each use of the gadget attracts a swarm of vermin of the GM's choice. The swarm disperses 10 minutes after the device is shut off.

14 – Using the gadget renders the operator unconscious for 1d minutes.

15 – Each use of the device attracts the attention of demons or ghosts, or punches holes into random dimensions through which strange creatures appear.

16 – The device inflicts 1 point of injury (ignore DR) per use on everyone within 10 yards, including the user.

17 – Each use of the gadget opens a gate into a random dimension for one second. The user must make a DX roll to avoid falling into the hole before it closes.

18 – Roll for a *different* random side effect each time the device is used. (If this result comes up again, roll for *two* side effects, and so on!)

Magic Items

Objects of magical power are a staple of fantasy. The following rules are intended for game worlds that use the magic system in Chapter 5, and make a few basic assumptions:

- Anyone can use any magic item that doesn't explicitly require Magery.
- Wizards manufacture magic items using magic spells that produce fairly predictable results. However, magic is *not* technology, and magic items can have unpredictable side effects.
- Magic items retain their power indefinitely -- their magic does not "wear out." But if the *item* breaks or wears out, it loses *all* of its magical properties and ordinary repairs cannot restore the magic.

The GM is free to change some or all of these assumption to suit his campaign!

Enchantment Spells

These spells allow mages to create magic items. They appear here instead of in Chapter 5 because enchantment creates magical artifacts, and uses many special rules that do not apply to ordinary spellcasting.

Enchant (VH)

Enchantment

This spell is a *prerequisite* for all other Enchantment spells. To enchant an item, the caster must *also* know this spell. The caster rolls against the *lower* of his skill with this spell and the specific spell he wishes to place on the item. If he has assistants, they must have skill 15+ with both spells, but the roll is based on the *caster's* skill.

Duration: Magic items are permanent until destroyed.

Cost and Time: See *Enchanting* (p. 481).

Prerequisites: Magery 2, and at least one spell from each of 10 other colleges.

Accuracy

Enchantment

Makes a weapon more likely to hit by adding to the user's effective skill.

Cost: See table below. *Divide cost by 10 if the subject is a missile* (e.g., an arrow or a bullet).

Bonus	*Cost*
+1	250
+2	1,000
+3	5,000

Prerequisites: Enchant, and at least five Air spells.

Deflect

Enchantment

Adds a Defense Bonus to armor, clothing, a shield, or a weapon. This adds to all active defense rolls made by the user.

Cost: See table below.

DB	*Cost*
+1	100
+2	500
+3	2,000
+4	8,000
+5	20,000

Prerequisites: Enchant.

Fortify

Enchantment

Increases the DR of clothing or a suit of armor.

Cost: See table below.

DR Bonus	*Cost*
+1	50
+2	200
+3	800
+4	3,000
+5	8,000

Prerequisites: Enchant.

Power

Enchantment

Makes a magic item partially or completely "self-powered." Each point of Power reduces the energy cost to *cast* or to *maintain* any spell on the item by 1. Halve this bonus in a low-mana area (round down); double it in a high- or very high-mana area. Power has no effect on the energy cost of the *user's* spells!

If Power reduces the cost to *maintain* a spell to 0, treat the item as "always on" after the cost to cast is paid – but the wearer must stay awake to maintain the spell. If Power reduces the cost to *cast* to 0, the item is "always on" for *all* purposes, although the owner may turn it off if he wishes.

Cost: See table below.

Power	*Cost*
1 point	500
2 points	1,000
3 points	2,000
4 points	4,000

Double the cost for each additional point.

Prerequisites: Enchant and Recover Energy.

Puissance

Enchantment

Adds to the basic damage a weapon does when it hits.

Cost: See table below. *Divide cost by 10* if the subject is a missile (e.g., an arrow or a bullet). *Double* cost if the subject is a missile weapon (e.g., a bow or a gun).

Damage Bonus	*Cost*
+1	250
+2	1,000
+3	5,000

Prerequisites: Enchant, and at least five Earth spells.

Staff

Enchantment

Enchants a magic staff – see *Magic Staffs* (p. 240) for details. Though many magic items must be in the form of a wand or staff, they do *not* have to have this spell on them.

Cost: 30.
Prerequisites: Enchant.

ENCHANTING

"Enchanting" is the process of creating a magic item. It is a special kind of spell casting; see *Casting Spells* (p. 235). The caster *must* use ceremonial magic (see *Ceremonial Magic*, p. 238), and he and any assistants must know both the Enchant spell (see p. 480) *and* the specific spell being put on the item at level 15+ – or at level 20+, in a low-mana area. Unskilled spectators cannot contribute energy.

Enchanting always requires time and energy. A particular enchantment might also require a specific item or material (e.g., a gem), or the expenditure of cash for "generic" magic supplies.

A given magic item may carry any number of spells. Each one requires a separate enchantment. The presence of an enchantment has no effect on later enchantments.

Power of a Magic Item

Each magic item has a "Power," set when it is created. An item's Power equals the caster's skill with the Enchant spell or the spell contained in the item, whichever is *lower*. Since enchanting is ceremonial magic, the caster *can* spend extra energy to raise his effective skill, and hence the Power of the item.

Record Power for each magic item created or found (to learn the Power of a found item, the PCs must use Analyze Magic). If an item has several spells on it, each spell has its own Power. Whenever it would be important to know the skill level of a spell cast by a magic item, use the item's Power.

An item's Power must be 15 or more for the item to work. Apply a temporary -5 to Power in a low-mana area; thus, an item with less than Power 20 *does not work at all* in a low-mana zone. *No* magic item works in a no-mana region!

Interruptions

If a mage is interrupted while enchanting using the "slow and sure" method, note the following:

- **He will be fatigued. Assume he is missing 1d FP.**
- **He must keep concentrating on his enchantment; therefore, any other spell use is at -3.** (If he stops concentrating, he loses the day's work.)

A wizard who is bothered while *not* actively working on his enchantment is at *no* disadvantage!

Success Rolls for Enchanting

The GM makes all rolls to enchant magic items. As with other ceremonial magic, a roll of 16 fails automatically and a roll of 17-18 is a critical failure.

On a success, the item is enchanted. On a critical success, increase the Power of the item by 2d – and if the success roll was a natural 3, the item might have some further enhancement (GM's discretion). The caster knows that his spell went well, but he must use Analyze Magic to know *how* well.

On a failure, the results depend on the method used to enchant the item – see below. A critical failure always destroys the item and all materials used.

Quick and Dirty Enchantment

Use this method to create a magic item *quickly*. It requires one hour per 100 points of energy required (round up). Make the success roll at the end of that time. Succeed or fail, *all* the energy is spent when the GM rolls the dice.

A lone caster is limited to the energy provided by his FP and HP, but he may have assistants, who can contribute their own FP and HP as described for ceremonial magic. The caster is at -1 to skill for each assistant; therefore, the number of assistants allowed is the number that would reduce the caster's effective skill to 15. With more assistants, the enchantment won't work.

If anyone but the caster and his assistants is within 10 yards, the spell is at a further -1.

On a failure, the enchantment is perverted in some way. It might acquire unpleasant side effects (see *Random Side Effects Table*, p. 479), become an entirely different spell, or anything else the GM likes. The caster won't know his spell went wrong unless he uses Analyze Magic or tries the item!

Slow and Sure Enchantment

Use this method when the enchanter wants to be sure it's done *right*. It takes one "mage-day" per point of energy required. A mage-day represents a full eight-hour workday for one mage. For instance, an item that requires 100 energy points would take one mage 100 days, two mages 50 days, and so on. A mage may work on only one enchantment at a time; he may not "work two shifts," either on the same or different items.

All of the caster's assistants must be present every day. If a day's work is skipped or interrupted, it takes *two* days to make it up. Loss of a mage ends the project!

Make the success roll at the end of the last day. There is no FP or HP cost to the enchanters – they invested the energy gradually as the spell progressed.

On a failure, the enchantment didn't work. The time was wasted, and any materials used in the spell are lost. (*Exception:* If the enchanters were adding a spell to an already-enchanted item, it is unharmed, though *extra* materials are lost.)

Spells for Enchantment

The *Magic Items Table* provides information on several common enchantments.

Spell: The name of the spell.

Energy: The energy cost required to enchant an item with the spell. Note that this is *not* the same as the cost to cast that spell normally! See also *Enchantment Spells* (p. 480).

Item: The class of item required:

Code	*Class of Item*
A	armor or clothing
J	jewelry; e.g., an amulet or ring
S	staff – any rod-shaped piece of organic material up to 6 feet long
Sh	shield
W	weapon

Notes: Special rules for creation or use.

Using Magic Items

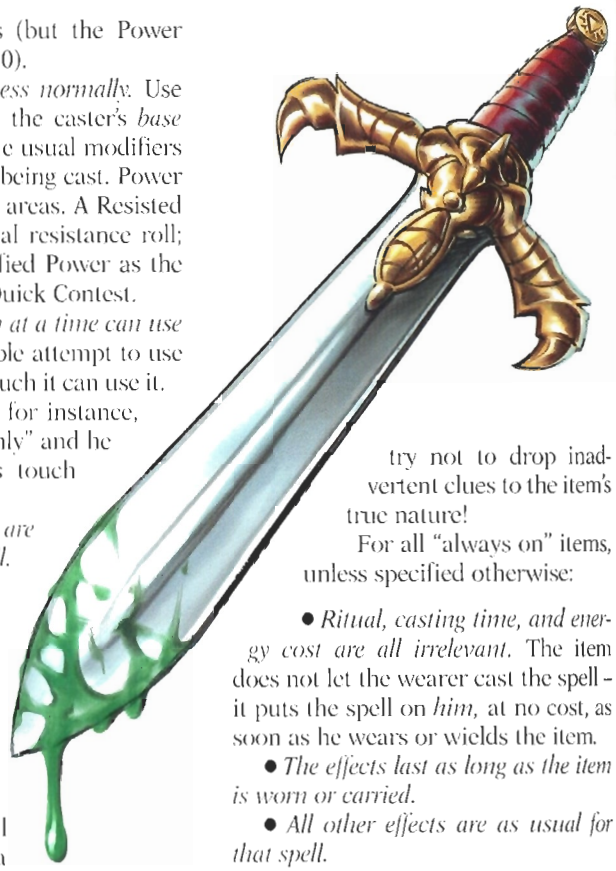
Magic items follow the rules given for the spell(s) they contain. Many give the user the power to cast the spell – perhaps only on himself, possibly on any subject. Some are "mage only"; that is, they only work for users who possess Magery. Unless specified otherwise:

- *There is no ritual.* The user just wills the item to work.
- *Casting time is as described for the spell.* High Power doesn't affect this.
- *Energy cost is the same as for a normal casting of the spell.* High Power does not affect this (but the Power spell *does* – see p. 480).
- *Determine success normally.* Use the item's Power as the caster's *base* skill and apply all the usual modifiers for the kind of spell being cast. Power is at -5 in low-mana areas. A Resisted spell allows a normal resistance roll; use the item's modified Power as the caster's skill in the Quick Contest.
- *Only one person at a time can use the item.* If two people attempt to use it, only the first to touch it can use it. If one *can't* use it – for instance, the item is "mage only" and he lacks Magery – his touch doesn't count.
- *All other effects are as usual for that spell.*

"Always On" Items

Certain magic items are "always on." For the item to work, the user must wear or carry it in the usual manner (a ring on a finger, a sword in a hand, and so on). These items don't let the wearer cast the spell – they automatically cast the spell *on the wearer* at no energy cost.

The powers of such items are not always obvious to a new owner. In the case of found items, the GM should try not to drop inadvertent clues to the item's true nature!



For all "always on" items, unless specified otherwise:

- *Ritual, casting time, and energy cost are all irrelevant.* The item does not let the wearer cast the spell – it puts the spell on *him*, at no cost, as soon as he wears or wields the item.
- *The effects last as long as the item is worn or carried.*
- *All other effects are as usual for that spell.*

Buying Magic Items

The cash price of magic items is up to the GM. In fantasy settings where "enchanter" is just another profession

Magic Items Table

Spell	*Energy*	*Item*	*Notes*
Accuracy	See p. 480.	W	[1]
Blur	100 per -1	J, S	[2]
Deflect	See p. 480.	A, Sh, W	[1]
Deflect Energy	200	J, Sh, W	[2]
Deflect Missile	200	J, Sh, W	[2]
Explosive Fireball	1,200	S	[3, 4, 5 ($500)]
Fireball	800	S	[3, 4, 5 ($400)]
Fortify	See p. 480.	A	[1]
Haste	250 per +1	A, J	[2]
Icy Weapon	750	W	[1, 5 ($2,000)]
Lightning	800	S	[3, 4, 5 ($1,200)]
Puissance	See p. 481.	W	[1]
Staff	See p. 481.	S	[1, 4]

[1] Always on. Works at all times without the addition of a Power spell.
[2] Allows the user to cast the spell, but only on himself.
[3] Allows the user to cast the spell exactly as if he knew it himself.
[4] Mage only. If the item has *any* spells with this restriction, it extends to *all* spells on the item.
[5] Cost of magical materials required.

and magic items are for sale in shops, a suggested price is $25 per energy point. For instance, a sword with Accuracy +2 would cost an extra $25,000.

In game worlds like this, enchanters might mass-produce low-energy cost items using the "quick and dirty" method. The GM is the final arbiter of what is possible, but note that a talented enchanter with skill 20 and five partners could spend 50 FP without breaking a sweat, much less spending HP. Realistically, this should *drastically* reduce the price of minor magic items.

At the GM's option, any magic item that a "typical" collaboration of wizards in the setting could enchant with an hour's work costs only $1 per energy point. In the example above, the cutoff might be 50 energy points – one arrow with Accuracy +1 or Puissance +1 would be $25, a magic staff would be $30, and a shirt with Fortify +1 would be $50 . . . but that sword with Accuracy +2 would still cost $25,000.

In game worlds where magic is basically unknown, magic items will not have a fixed, fair price.

In game worlds with few enchanters, magic items will be rare and prized, and even the most minor items will sell for $50 or more per energy point. This is likely to be the case in settings with secret magic – especially if the reason for the secret is an enchanters' monopoly.

In game worlds where magic is basically unknown, magic items will not have a fixed, fair price. If the buyer knows the item is authentic, the seller can often name his price!

In all cases, add the cost of magical materials (if any) and the cost of the item being enchanted to the cost for the enchantment itself.

Damage to Objects

For the purpose of these rules, *any* nonliving, fabricated object – including a character with the Machine meta-trait (p. 263) – is an "artifact." Handle attacks on artifacts just like attacks on living beings (see *Damage and Injury*, p. 377), with the following exceptions:

Rolling to Hit: Roll to hit normally, applying the object's Size Modifier. If an object's SM is not given, find it from the *Size and Speed/Range Table* (p. 550). *Inanimate* objects are often motionless and don't hit back; this makes them good targets for an All-Out Attack. No artifact gets a defense roll unless it is under sentient control (e.g., a robot, a weapon in hand, or a vehicle with a driver).

Damage Resistance (DR): An artifact has a DR that represents its innate "toughness." Wooden or plastic tools, gadgets, furniture, etc. usually have DR 2. Small metal, metal-wood, or composite objects, like guns and axes, typically have DR 4. Solid-metal melee weapons have DR 6. Some artifacts may be *armored;* for instance, a quarter-inch of mild steel is DR 14.

Injury Tolerance: Most artifacts have some level of Injury Tolerance (p. 60). Complex machines are Unliving. Solid objects, like furniture or weapons, are Homogenous. Things like nets and mattresses are Diffuse. See *Injury to Unliving, Homogenous, and Diffuse Targets* (p. 380) for the effects on damage.

Health (HT): This rates the likelihood the object will break under stress or abuse. Most machines and similar artifacts in good repair are HT 10. Swords, tables, shields, and other solid, Homogenous objects are HT 12. Cheap, temperamental, or poorly maintained items get -1 to -3 to HT; well-made or rugged ones get +1 or +2. Characters with the Machine meta-trait use their HT score.

Hit Points (HP): The amount of damage the object can take before it is likely to break or cease to function. For weapons and equipment without a listed HP score, consult the *Object Hit Points Table* (p. 557) to find HP based on weight and construction.

Effects of Injury

Injury to artifacts works much like injury to living beings (see *Injuries*, p. 418), with the addition of a few special rules.

Less than 1/3 HP left – An artifact damaged this badly may suffer halved (or otherwise reduced) effectiveness, at the GM's discretion.

0 HP or less – Roll vs. the artifact's HT each second while it is under stress (but *not* if it isn't being used): a chair rolls each second someone sits on it, a car rolls each second its engine is running, and so on. On a failure, the object suffers a severe malfunction and is disabled. Most disabled artifacts don't function *at all* until repaired. Sentient machines fall "unconscious." Homogenous objects, such as swords, bend or break, but *might* remain partially usable (see *Broken Weapons*, p. 485). Ropes, cables, etc. are cleanly severed – not chopped to bits.

Detailed HP Calculation

Those who have a calculator or spreadsheet program handy may wish to calculate HP instead of using the *Object Hit Points Table*. HP are equal to 4 × (cube root of weight in lbs.) for complex, Unliving objects, and 8 × (cube root of weight in lbs.) for solid, Homogenous ones (round *up*). The GM may alter these values for unusually frail or tough objects.

-1×HP – Artifacts don't "die," as they were never truly alive, but must still make HT rolls to avoid "death" as described under *General Injury* (p. 419). On a failure, the object is *destroyed*. For instance, a sword might shatter instead of merely bending or snapping. A destroyed computer loses all data stored in it – including memories, if it is sapient.

-5×HP – The artifact is automatically destroyed, as described above.

Shock: Most artifacts don't feel pain, but damage can temporarily disrupt their functionality unless they have appropriate backup systems (represented by High Pain Threshold). Apply the usual shock penalty to any *use* of that object. For example, if a vehicle suffers sufficient injury to impose a -3 shock penalty, the driver has -3 to his vehicle operation skill next turn.

Major Wounds: An artifact *can* suffer a major wound, referred to as "major damage." When a machine with many subsystems – like a vehicle – suffers a major wound, the GM may call for a HT roll. On a failure, one or more systems fail. For example, major damage to a tank might knock out its gun or cause a fuel leak. If using a rulebook that supplies a "major damage table" for a specific type of machine, roll randomly and apply the result.

Knockdown and Stunning: A nonsentient artifact ignores these effects. A *sentient* machine (IQ 1+) can suffer these results as a damage-induced malfunction. For instance, stun means the machine doesn't function that turn, but can function again after it recovers.

Crippling and Hit Location: A human- or animal-shaped artifact uses the normal rules; see *Crippling Injury* (p. 420). Other objects with distinct parts (e.g., a vehicle with a body, turret, and wheels) can suffer crippling injuries to specific hit locations; for vehicles, see the *Vehicle Hit Location Table* (p. 554). In all cases, a crippled location is "disabled."

Fragile Objects: Artifacts are often Fragile (p. 136). Those made of paper, dry wood, etc. are Combustible; those that contain *highly* flammable material, such gasoline or hydrogen, are Flammable. Artifacts containing unprotected explosives, sizeable stocks of ammunition, or volatile compressed gas are Explosive. Objects such as glassware, pottery, and televisions are Brittle.

Damage to Shields

Most medieval shields were wood, or wood with a thin layer of metal. After one good battle, a shield was worthless. Do *not* use this rule unless you are willing to tolerate some bookkeeping in the name of more realistic combat!

See *Shields* (p. 287) for the Defense Bonus (DB), DR, and HP of shields. If your shield's DB makes the difference between success and failure on *any* active defense (not just a block), the blow struck the shield squarely, and may damage it.

Apply the attack's damage to the shield. Subtract the *shield's* DR. If no damage penetrates the shield, there is no effect . . . but you experience full knockback!

If damage penetrates the shield's DR, mark it off against the shield's HP. Use the standard *Damage to Objects* rules; ordinary shields are Homogenous, with HT 12. If the shield is disabled or destroyed, it no longer provides its DB, but it still encumbers you until dropped. If it is *completely* destroyed (-10×HP), it falls off.

A powerful blow may punch through your shield! The shield acts as cover, with "cover DR" equal to its DR + (HP/4). Damage in excess of cover DR penetrates the shield and possibly injures you; see *Overpenetration* (p. 408). When using hit locations, roll 1d: on 1-2, apply damage to your shield arm; on 3-6, apply it to the location targeted by the attacker.

Damage to Buildings and Structures

The *Structural Damage Table* (p. 558) gives typical DR and HP for buildings, doors, walls, and similar inanimate structures. Most such structures are Homogenous. Assume that a structurally sound building in good repair has HT 12. Shoddy construction might reduce this to HT 9-11, while a quake-resistant building might have HT 13-14.

Any building "disabled" by going to 0 HP or less and failing a HT roll has one or more large breaches and loses electrical power, if any. At -1×HP or less, it must make HT rolls to avoid collapse – just as a character would roll to avoid death. It collapses automatically at -5×HP.

Anyone in a collapsing building takes 3d crushing damage, plus 1d per story overhead. A victim can attempt to dive for cover behind a structural member – see *Dodge and Drop* (p. 377). On a success, he receives DR equal to the building's exterior wall DR against this damage, but is still trapped in the rubble. On a critical success, he is totally unharmed!

Repairs

Most artifacts cannot heal naturally (although there are exceptions; e.g., exotic "living metal" machines). If they become disabled, they cannot recover until repaired. If they are crippled, the relevant parts require repair or replacement – they can't recover on their own.

To fix a damaged, disabled, or malfunctioning device requires a suitable skill: Armoury, Electrician, Electronics Repair, Machinist, Mechanic, etc. See individual skill descriptions for what each skill covers. The GM is the final judge of the necessary skill.

Minor Repairs: Each attempt to repair damaged equipment that still has positive HP requires half an hour and a successful skill roll. See *Equipment Modifiers* (p. 345) and *Time Spent* (p. 346) for common modifiers. As well, if the device costs $1,000 or less, roll at +1. Roll at -1 if it costs $10,001-$100,000, at -2 if it costs $100,001-$1,000,000, or at -3 if it costs over $1,000,000. Success restores 1 HP times the margin of success (minimum 1).

Major Repairs: An artifact reduced to zero or negative HP requires spare

parts that cost 1d × 10% of its original price. After obtaining these parts, use the rules above, except that all rolls are at an extra -2.

Replacement: If a device is *destroyed* (failed a HT roll to avoid destruction, or went to -5×HP or less), it is beyond repair. Replace it at 100% of its original cost.

Hiring Help: Those incapable of doing their own repairs can hire technicians. A typical rate is $20/hour – or higher, if unusual skills are required. Typical skill level is 9 + 1d.

Breakdowns

Most real-life equipment failure is due to mistreatment or routine wear – not combat damage. The GM may apply these rules to any complex artifact (anything Unliving).

Maintenance

Artifacts that have moving parts, that are unusually complex, or that are routinely under stress require regular maintenance to work properly. This *definitely* includes all weapons and vehicles, precision optics (cameras, night-vision gear, etc.), and any other equipment more elaborate than a screwdriver or a knife.

Machinery like this requires periodic "maintenance checks" against a suitable technical skill, as explained for the Maintenance disadvantage (see p. 143). The frequency of such maintenance varies. Most commercial ground vehicles require one or two man-hours of maintenance a week. Weapons, especially guns, need cleaning every day or so of use. Large, complex items, such as factories and fighter jets, require numerous man-hours of maintenance per day – if not *constant* care.

Missed or failed maintenance checks result in HT loss. This HT loss is cumulative, and affects all HT rolls described under *Effects of Injury* (p. 483) and *Slime, Sand, and Equipment Failure* (below). To restore lost HT, use the *Repairs* rules, above. Treat each point of HT restored as a separate major repair.

This rule does *not* apply to items without moving parts, equipment in storage (not just sitting out in the open!), or any artifact just sitting there, unused, if it has a sealed case.

Slime, Sand, and Equipment Failure

Harsh conditions may result in more frequent breakdowns, regardless of maintenance. Whenever an artifact that requires maintenance is carelessly exposed to the elements (e.g., dropped in a swamp, left out in a sandstorm, or buried in volcanic ash), make a HT+4 roll for it. Use its *current* HT – including any reductions for missed maintenance. If the item lacks a HT score, assume HT 10. In extreme environments (desert, swamp, jungle, etc.), make one extra roll per item per day, in addition to any rolls for specific mistreatment.

On a failure, the equipment breaks down, jams, or otherwise fails; it cannot function *at all* without minor repairs. On a critical failure, it requires major repairs. The GM may wish to keep the results secret and let the operator discover the malfunction during normal use!

Modifiers: +1 if the PCs take significant time out each day to clean and maintain their gear (GM's judgment); -1 or -2 if the abuse or the environment is unusually brutal.

Broken Weapons

If a weapon is *destroyed* – that is, it failed a HT roll at -1×HP or below, or went to -5×HP – it is completely useless. But if it is just disabled, it *might* still be usable.

An *extremely light* weapon (anything weighing 1 lb. or less, such as a dagger) or a *missile* weapon (sling, bow, firearm, etc.) is useless even when merely disabled.

Other weapons sometimes remain *partially* usable when disabled. Roll 1d and consult the appropriate paragraph below. Where the weapon effectively becomes a different kind of weapon, figure skill and damage according to the new weapon type!

Axe/Mace Weapons: On 1-3, the head breaks off, leaving you holding a light club. On 4-6, the weapon is smashed beyond use.

Polearms: On 1-2, you're left holding an 8-foot pole; treat as a long spear that does thrust+2 *crushing* damage. On 3-4, you're left with a quarterstaff, and there's a very clumsy (-4 to hit) axe with reach 1 lying in front of you. On 5-6, you're left with a light club and there's a clumsy (-2 to hit) "great axe" with reach 2 lying on the ground.

Rapiers and Smallswords: On 1-3, treat a broken smallsword as a dagger and a broken rapier as a smallsword; damage is still impaling! On 4-6, the blade snaps off at the hilt; the weapon is useless.

Spears: On 1-3, the head breaks off where it joins the shaft, leaving you with a quarterstaff. On 4-6, the spear breaks further down; you have a baton, and there's a spear with reach 1, doing normal damage, lying in front of you.

Swords (broadswords, greatswords, katanas, shortswords, etc.) and Sabers: On 1-3, the blade breaks off at the halfway mark, losing its tip. It can still make a cutting attack at -2 to damage, but it is useless as an impaling weapon: a thrust does thrust *crushing* damage. If the sword was reach 2, it is now reach 1. On 4-6, the blade snaps off at the hilt; the sword is useless.

Two-Handed Axe/Mace Weapons: On 1-3, the head breaks off where it joins the shaft, leaving you with a quarterstaff. On 4-6, the weapon breaks further down; you have a light club, and there's a very clumsy (-4 to hit) axe with reach 1 lying in front of you.

Other Weapons: Use the closest weapon listed above. The GM has the final say, and may choose to roll if there is more than one way for the weapon to break.

Chapter Eighteen

Game Mastering

The Game Master (GM) is the referee of a roleplaying game. But that's putting it too simply. He is like a mystery writer . . . a storyteller . . . an umpire . . . a cosmic bookkeeper . . . the "house" at a gambling casino . . . and (to the characters) a minor deity.

The GM is the final authority. Rules are guidelines . . . the designers' opinion about how things *ought* to go. But as long as the GM is fair and consistent, he can change *any* number, *any* cost, *any* rule. His word is law!

Many things are left up to the GM to decide. A game world gets realism from its completeness. The GM adds all the details that make it come alive. With a good GM, even a *bad* set of rules can be a lot of fun. With a *good* set, the sky's the limit. We semi-modestly believe that ***GURPS*** is a very good set of rules indeed – but without the GM, the rules are nothing.

Read on . . .

Customizing the Rules

Throughout ***Basic Set,*** we have included assistance for GMs who wish to tailor the rules to their liking. For quick reference:

- *New Advantages* (p. 117), *New Disadvantages* (p. 165), *Creating Techniques* (p. 229), *Alternative Magic Systems* (p. 242), *Other Powers* (p. 257), and *Creating Templates* (Chapter 15) provide guidelines for creating and customizing character abilities.
- *Character Development* (Chapter 9) presents options for handling character advancement.
- *Tactical Combat* (Chapter 12) and *Special Combat Situations* (Chapter 13) add optional extra detail to *Combat* (Chapter 11) for action-oriented campaigns.
- Sections titled "Optional Rule" offer tested, *optional* add-ons. Examples include *Limited Enhancements* (p. 111), *Wildcard Skills* (p. 175), *Malfunction* (p. 407), *Maintaining Skills* (p. 294), *Influencing Success Rolls* (p. 347), and *Extra Effort in Combat* (p. 357). Even a novice GM can quickly customize the rules by specifying which options are "turned on" in his campaign.

Choosing a Campaign Type

Before you make any other decisions, you should discuss the *style* of your campaign with your players. There are many alternatives:

- "By-the-book" vs. "tweaked" (with many GM rules interpretations).
- "Realistic" vs. "cinematic" (see *The Cinematic Campaign,* p. 488).
- "Humorous" vs. "serious."
- "Puzzles and mysteries" vs. "combat and adventure."
- "Death is common and permanent" vs. "death is rare or easily remedied" (by magic or high technology).

All of these are legitimate approaches to roleplaying, but if the players and GM have different expectations, *everyone* will end up disappointed. The game should be a story that develops in play – not a battle between the players and the GM*. To achieve this, a little mutual understanding is necessary. A few minutes of pre-game discussion can increase everyone's enjoyment.

"I want a story about great battles and wars and bravery and heroes and villains."

"I see . . . And what does your sister want?"

". . . She says she wants to hear a true story."

"Very well, then. I will give you both what you want. A story about great deeds. About armies of light and soldiers of darkness. About the places where they lived and fought and loved and died. About great empires and terrible mistakes. A true story."

– Luc Deradi and Emperor Londo Mollari, ***Babylon 5: In the Beginning***

Power Level

A crucial step in choosing a campaign type is determining the number of character points the PCs start out with. This has a direct impact on the campaign style: powerful heroes stampede through realistic challenges with cinematic ease, while a lighthearted romp for supers might be a deadly nightmare for normal humans.

As the GM, the surest way to choose a suitable power level is by "feel." During the course of your first few campaigns, you'll learn how your players spend their points – and how their PCs cope with the adventures you cook up. You can use this experience to choose a good power level for your next campaign. But that won't help you *this* time, so you might wish to choose the most appropriate power level off the list below.

Some example power levels, with suggested starting points for the heroes:

Feeble (under 25 points): Small children, mindless thralls, zombies, etc. Unsuitable for PCs in any but the darkest or most humorous of campaigns.

Average (25-50 points): Ordinary folks, such as accountants and cab drivers.

Competent (50-75 points): Athletes, cops, wealthy gentry . . . anyone who would have a clear edge over "average" people on an adventure.

Exceptional (75-100 points): Star athletes, *seasoned* cops, etc. With a little experience, these individuals could become full-time adventurers.

Heroic (100-200 points): People at the realistic pinnacle of physical, mental, or social achievement; e.g., Navy SEALs, world-class scientists, and millionaires. Most full-time adventurers *start* their careers at around 150 points.

Larger-than-Life (200-300 points): Leading roles in kung fu movies, fantasy novels, etc. Typical of the professional adventurer who has already made a name for himself.

Legendary (300-500 points): Protagonists of epic poems and folklore. This is the best power level for "gritty" supers and for mortals who rub shoulders with gods.

Superhuman (500-1,000 points): Those who have transcended humanity (e.g., supers who can take on tanks barehanded) and powerful creatures of fantasy (e.g., dragons who can best entire armies).

Godlike (over 1,000 points): True demigods who can do as they please most of the time.

High-Powered Campaigns

Player characters built on a high point total can tax the GM's ability to provide meaningful challenges, weaken the integrity of the game world, and push the limits of game balance. As a result, high-powered gaming merits special discussion.

"High-powered" is a subjective term – these guidelines assume PCs with well over 200 points. Even so, most of this advice stands at *any* power level!

Character-Design Problems

Some players spend *lots* of points in one area, resulting in PCs with abusive levels of ability. Others use their ample points to prepare for almost every conceivable situation, thereby poaching on the territory of more focused PCs. And still others try to do both, investing many points in a single trait and then coming up with "creative" ways to use that ability in place of almost everything else. A few countermeasures:

Offer a broad selection of abilities. In a high-powered game, there should be all manner of expensive options available to soak up points: great wealth, exotic advantages, magic, psionics, powerful racial templates . . . preferably *several* of these. Let your players know what is available, and use the expanded rules for special abilities whenever possible.

Divide starting points between "base points" and "experience points." Consider giving the players only a fraction of their starting points to begin with. Ask them to create focused, balanced characters for your approval. Once you approve a PC, give the player the rest of his points to spend *as if they were earned in play* – which means he cannot acquire large numbers of new advantages, or new skills that don't fit his character story.

* For those who *want* a battle between the players and the GM, we recommend our ***Munchkin RPG*** series: **www.sjgames.com/munchkin/rpg/.** Really.

Require certain abilities. Heroes can be worth a lot of points without giving the players control over every last point. A modest discretionary budget in combination with a fixed set of abilities works well. For instance, every super might have a package of "mutant abilities" (effectively a racial template) *and* get 200 points to spend however he wants; every commando might start with a 100-point "basic training" template *and* get 50 points to customize with.

Require certain categories of abilities. If required abilities seem too rigid, consider requiring PCs to have a certain number of points in a few *classes* of abilities. For instance, secret agents might have to spend at least 10% of their points on each of "social traits," "combat abilities," and "technical skills"; supers might have to spend at least 20% of their points on each of an attack, a defense, and a movement power.

Limit attribute levels. Attributes affect so many things in the game that a PC with lots of points in attributes can sometimes cause problems. To combat this, set an upper limit on individual attribute scores or on total *points* allowed in attributes.

Emphasize the value of relative skill level. When a character concept calls for many skills, there is a temptation to buy high attributes and put relatively few points into skills. This might be a cheap way to get good skill levels, but it leads to "attribute inflation." To encourage more balanced designs, tell your players that you intend to make heavy use of the *Relative Skill Level* rules on p. 171.

GM Limitations

Even *balanced* high-powered PCs can wreak havoc on your adventure or game world if you aren't ready for them! Here are a few ways to prepare for a high-powered game:

Know the heroes' abilities. There is a lot of information on the character sheet of a powerful PC. If you are not familiar with all of it, the game can grind to a halt when the player invokes a rarely used ability. Even worse, a forgotten ability can lay waste to your careful plans!

Know the rules. The more abilities the heroes have, the greater the number of special rules that will see use during the game. Do your reading *before* the game begins. This keeps things moving and prevents players who like to abuse high-powered abilities from ruining the game for everyone.

Fit the challenges to the heroes. Read through your campaign notes with the PCs' character sheets in hand. This simple procedure will often alert you to foes, mysteries, and dangers that will not challenge the heroes' abilities, and gives you an opportunity to patch these holes before the players drive trucks through them.

Present a variety of challenges. Make sure the heroes cannot meet every challenge with Guns-20 or Fast-Talk-25. Run the game in such a way that single-focus characters have to rely on their friends for help. At the same time, be sure that a few success rolls involve sufficiently large penalties that jack-of-all-trades characters have to defer to the true experts in the group.

Know the stakes. Campaign power level doesn't just determine the heroes' abilities and the scale of the threats they face – it sets an upper limit on any imbalance between the two. Challenges that are merely amusingly weak or annoyingly tough in a low-powered game might become boring or *lethal* when scaled up to a higher-powered one. Be ready to think on your feet! If the heroes are chewing up the opposition so easily that the players are yawning, have tougher reinforcements show up; if they are getting mauled, give them a lucky break.

Be flexible. Powerful PCs can do *more*, which makes it tricky to second-guess them. Again, you must think on your feet. Don't penalize your players when they finesse your plot with their abilities . . . but when they use their powers as blunt instruments to knock holes in the plot, be ready to come up with creative countermeasures that look like you planned them all along.

System Limitations

GURPS is designed to work at any power level, but it is impossible to offer a special rule for *every* combination of "problem abilities" possible in a high-powered game. When the rules do not handle a situation well, try one of these fixes:

Use optional rules. In many cases, optional rules exist specifically to deal with high-powered characters – for instance, *Maintaining Skills* (p. 294). Such rules can often make the difference between a playable and unplayable game.

> *"Psychic, though? That sounds like something out of science fiction."*
> *"We live on a spaceship, dear."*
> – *Wash and Zoe,* ***Firefly***

Exercise judgment. If a rule implicitly assumes a certain power level, and the PCs are beyond this, feel free to extrapolate. For instance, *Task Difficulty* (p. 345) lists penalties down to -10, but if your campaign includes heroes with skills of 25 or 30, there is nothing wrong with assigning a penalty of -15 or -20!

The Cinematic Campaign

For the most part, ***GURPS*** stresses realism. Heroes can get disappointed, injured, sick, or even dead. So it goes. The GM is expected to stretch realism in an emergency (defined as "whenever realism would ruin the game"), but the rest of the time, realism rules.

The "cinematic" campaign is one where realism *doesn't* rule – because if it did, it would constantly get in the way of the story. In a cinematic campaign, swashbuckling heroes can defeat dozens of foes because the story calls for it. Spacecraft whoosh or roar in the silence of space because fast things whoosh and powerful engines roar. *Rightness* always overrules mere *correctness.*

The cinematic style of play requires both players and GM to understand

and agree with this principle, and to cooperate in telling the story. ***GURPS*** includes some rules that can help – but everyone must realize that an epic story is apt to transcend the rules.

Cinematic Power Level

It is possible to run a cinematic game at *any* power level. Cinematic games are frequently high-powered games – and vice versa – but "cinematic" is a *style*, not a point level. Crack commandos in a grimly realistic campaign might have huge point totals, while many of Robin Hood's Merry Men would come in under 100 points yet be quite at home in a cinematic campaign.

Still, cinematic heroes should be markedly more capable than ordinary people . . . and perhaps even more talented than most heroes. Players find it easier to believe in cinematic stories if their characters are capable enough to accomplish what the story calls for them to achieve without *too* much "fudging" on the part of the GM.

How the players spend their points is somewhat more important. ***GURPS*** provides many abilities suitable for cinematic gaming. Epic heroes often have a Destiny. Most possess "luck" – although Daredevil and Serendipity are often more appropriate than plain Luck. The GM should permit Gadgeteer, Gizmos, Gunslinger, Rapier Wit, Trained By A Master, Weapon Master, and Wild Talent. He should also allow any skills associated with these traits, and might even want to use "wildcard skills" (see p. 175).

Cinematic Characters

Advantages and skills do not, by themselves, create cinematic heroes. The player must have a character concept that turns the *statistics* on the character sheet into a *person*. In particular, epic heroes need two things:

A motivation. Love and honor are classic, but not all cinematic characters are honorable, good, or even *nice*. Evil dreams and goals – such as blind, unreasoning vengeance – are perfectly acceptable as long as they are *appropriate*. However, obsession can lead to a simplistic character. The player must make a conscious effort to round out his character's personality.

A place in the world. Cinematic heroes have loved ones, mentors, lovers, ex-lovers, enemies, birthrights, family curses, and so on. They do not simply appear, play their role, and vanish – they need to be part of the game world, since their story is part of what *defines* the game world.

Cinematic Play

Cinematic campaigns have certain conventions:

A cinematic world is ordered. Events have reasons – reasons that relate to the story. These might not be obvious, but few things happen arbitrarily and nothing *significant* happens at random. This doesn't mean that the plot has to be linear or predestined. Reversals of fortune are common setbacks, and even if the final goal is set in stone, the way to get there is not.

The only details of importance are those that directly advance the story. Unnecessary detail is the bane of cinematic gaming. The GM must know the difference between important details and irrelevant ones. For instance, if the heroes must cross the Burning Wastes to reach the Dark Tower, they *will* find enough water along the way; the story would be very short if they didn't, and it would not advance the story much to play out their searches.

The GM must be prepared to overrule any die roll. If the dice determine every outcome, the players learn to put probability ahead of dash and style. Furthermore, the dice can be as tyrannical as a heavy-handed GM; the players are likely to revolt if a brave adventurer dies suddenly from a random disaster! On the other hand, the GM must not overrule the dice so often that the players feel as though nothing they attempt can change the outcome of the story.

The GM must allow dramatic actions to succeed. If the hero tries to swing from the chandelier, the player must have confidence that the GM will not sneer at him and announce that he has broken his back – and must now play a quadriplegic – because his hands slipped off the wax caked onto it. The GM *certainly* shouldn't bog down play by requiring endless skill rolls modified by the dimness of the tavern!

The players must not take inappropriate advantage of conventions. Yes, the heroes will make it across the Burning Wastes – but they must still make proper preparations. A player who remarks, "Don't worry about water. We're heroes; we're sure to find some," is playing in the wrong campaign. The players must provide dialog and attitudes in keeping with the style of the campaign.

The GM must handle heroic deaths satisfyingly. An epic death cannot be purposeless. If a PC dies, he dies *gloriously* – bravely saving his comrades' lives, or taking an impressive number of foes with him. Fate (in the person of the GM) will be generous. There is no need for stinginess, as the PC won't be around to be a problem later on! The players must not abuse this convention. A dying hero might be almost invincible . . . but only if he's selling his life to take action that directly advances the plot.

Damn the Rules, Full Speed Ahead!

Many gamers prefer a "rules-light" game, in which the action moves along quickly rather than being bogged down in die roll after die roll. This is similar to cinematic gaming, but it is possible to have a quick, *realistic* game just by choosing which rules you use. For instance, combat slows down a lot when the GM uses hit locations or critical hit and miss tables – so leave them out. Rather than fuss with the detail of selecting a dozen skills to round out a character, use a wildcard skill – and maybe a Talent or two (p. 89) to boost that skill even more. If the GM and players want a free-wheeling, fast-paced game, it's easy to do – just pare ***GURPS*** down to its essential elements and be willing to make a lot of judgment calls on the fly.

Starting a Game Session

There are a few things the GM should do before play actually starts, to make things easier for himself *and* the players:

Introduce the characters. If you are in the middle of a continuing campaign, you can skip this step! But if you are just starting out, each player should have the opportunity to describe "himself" or "herself." If there is an artist in the group, he may help by drawing the characters as they are described.

Check for skills, etc. improved since the last play session. In a continuing campaign, the PCs earn character points that they can spend to improve their abilities. Sometimes the PCs can study, work at jobs, etc. *between* play sessions. Therefore, some characters may have better skills or abilities than they did last game session. This is the time for the players to work out such matters with the GM. (If everyone in the group has net access, it might be better to work on this via e-mail between games, to avoid slowing things down.)

Fill out the GM Control Sheet. While the players are getting to know each other (or each other's characters), the GM should check over the character sheets, make sure everything balances, and copy necessary information onto a *GM Control Sheet.* This reference lists attributes, secondary characteristics, special advantages and skills, etc. for each PC. When the GM rolls in secret to determine who sees something, who *understands* something that everyone sees, who resists a spell, or who that bad-tempered dwarf takes a dislike to, this sheet is valuable.

Brief the players. Tell them what's going on, give them some idea what the adventure will be about, and (in a continuing campaign) refresh their memory about the last game session. There are many ways to do this. You can always just *tell* them. But it's much more fun to start play and *then* "set the scene." Let the characters immediately find a map or old book . . . meet someone who tells them an interesting rumor . . . befriend someone in need of help . . . witness a wrong that needs righting . . . or whatever.

Let the game begin!

Advance Preparation

There are several things for the GM to do well in advance, before the players arrive on the scene:

Prepare the adventure. **If you are playing a prepared adventure, all you need to do is read through it, and possibly make up some character sheets. But if you are designing your own adventure, you may spend weeks of work – a labor of love – before it is ready for the players. In any event, be sure you're fully familiar with the adventure *before* the players show up!**

Brief the players about the adventure. **If your players are already familiar with the system, you should tell them in advance (*before* they arrive to start the game) what sort of characters are "legal" and how much money, equipment, etc. they are allowed – and perhaps give a hint about useful skills. If everyone has his character made up in advance, you'll be able to get right to the action when the players arrive.**

Set up the play area. **You need pencils, paper, and dice; maps and miniatures if you are** using them (and a table to play them on); and a supply of snacks (for yourself, if not for the whole group)!

Who's Got the Sheets?

Much of the advice in this chapter assumes that you, as GM, have access to the character sheets during the planning process, or at least are maintaining a detailed GM Control Sheet. Some GMs ask the players to leave their character sheets with them, both because it helps them plan and because then the players can't lose them. However, there are situations (for instance, a campaign in which GM duties rotate through the group) where that's impractical – and some players really don't like to give up that much control. You should *at least* have a control sheet with each PC's primary abilities, updated as major changes happen. It's not as good as having the actual character sheets, but it's much better than trying to plan and run the game blind. Of course, a photocopy or digital copy is even better!

To Screen or Not to Screen?

Many GMs prefer to use folders, books, or other opaque items to screen their notes and die rolls from the players. Others find that it distances them from the game, and like being right out with everyone else. This is largely a matter of taste; we point out only that there are situations in which a GM should roll secretly, and you should have some easy way to do that.

Maps

The GM may wish to prepare maps in advance, to help him plan and to keep track of events. He may also give maps to the players as clues. And the players themselves might want to map their progress – whether it be through jungles, dungeons, or downtown New York City – to make sure they can find their way back . . .

Maps in ***GURPS*** use hexagons, or "hexes," to regulate movement and combat. Each hex is adjacent to six other hexes. See *Hexes* (p. 384).

Player-Made Maps

Whenever the PCs enter an area for which they have no map – be it a dungeon, a laboratory complex, or a network of jungle trails – the players will want to map it themselves. (That is, they will if they are smart!)

However, mapping is not trivial. Unless the party carries a tape measure and spends a lot of time using it, you should *not* tell them, "You go 12 yards down the stairs and turn north. The tunnel is seven feet wide and nine feet high. It goes north for 120 yards and then turns northeast. In another 20 yards, it opens out into a room 10 yards by 6 yards." That sort of information would require several minutes per measurement and a skill roll against Mathematics (Surveying) – not just a stroll through the tunnel!

Instead, give them information like this:

"You walk down the stairs – they go down a little farther than an ordinary flight of stairs. At the bottom, there's a tunnel going right. It's wide enough for two to walk side by side, and so high you can barely touch the ceiling with your swords. It goes on for a ways in a fairly straight line . . ."

"How far?" asks a player.

"Is somebody pacing it off? Okay. Around 128 paces. It then turns to the right a bit . . ."

"How much?"

"Did you bring surveying tools? Anybody got Absolute Direction? No? All right. Standing at the intersection, with the old tunnel behind you at six o'clock, the new tunnel looks like it turns away at between one o'clock and two o'clock. Got that? Now, it goes along for another 19 or 20 paces, and then opens out into a big room. The door is in the middle of the long wall. The room is roughly rectangular. From where you stand, it might be 10 yards long, 6 or 7 yards wide."

Very different, yes? But also much more realistic. The players receive only the information the PCs actually get with their senses. In the example above, the GM fudged all the distances a little bit, assuming that whoever was pacing would have a standard pace a bit less than a yard.

If you do this, the players might come up with ingenious ways to measure time and distance. Let them!

Note that if mapping is difficult in ordinary circumstances, it becomes next to impossible if the party is in a hurry! Suppose the group is being chased through the area described above. The GM would say:

"Okay. You're running? Stop mapping. Here's where you go. Down the stairs! Turn right! Run for several seconds! The tunnel bends to the right! Run a little farther! You're in a room!"

And so on. When the party stops running, they can sit down and try to remember where they went. (Eidetic Memory is a big help here!)

Mapping Overland Journeys

If the PCs are traveling through unexplored territory, the players may wish to keep a large-scale map. The GM may make it automatic if they are following rivers, canyons, and the like. If they are trekking through featureless wastes, or trying to map a specific tiny inlet of a great river, making a map good enough for others to follow requires a Cartography roll. This defaults to IQ-5, Geography-2, Mathematics (Surveying)-2, or Navigation-4. Absolute Direction is good for +3 to the roll.

This can be an adventure in itself: the party is sent to explore and map the trackless waste, virgin planet, mysterious dungeon, steaming jungle, dead city, or whatever.

Travel Maps

Draw these maps to any convenient scale. Examples include maps of continents, highways, and cities. These are purely for information; they are not "playing boards." In a modern adventure, the players have access to travel maps. In a far-past or far-future campaign, the travel map might be the GM's secret. (*Finding* a map can be a great adventure objective.)

Area Maps

The standard scale for these maps is 1" = 18' (6 hexes). Each hex is still one yard across – it is just drawn to a smaller scale. Use this scale to map an entire building, dungeon, arena, etc., and use a different sheet for each floor or level, indicating shafts and stairways. Mark each room (or other point of interest) with a letter or number for use with a map key.

For each room, the map key should give:

- Its size (although this might be clear from the area map).
- A general description.
- A description of the people or creatures in the room, if any. This may be as simple as "Two ordinary wolves," or as complex as "This room is empty except between midnight and 9 a.m., when two guards are there. There is a 50% chance that each one is asleep. They are ordinary guards from the Character List, but one of them also has a gold ring worth $200. They will surrender if outnumbered more than 2 to 1, but will not cooperate, even if threatened with death."
- If necessary, any special notes about the room, and descriptions of anything that might be found if the room were examined *carefully*.
- If necessary, a room map (see below) to show the precise location of furniture, characters, etc.

The GM should keep this sort of map secret from the players – although they can try to make their own map. He may wish to place a marker on the area map to show where the party is at any given moment.

Room Maps

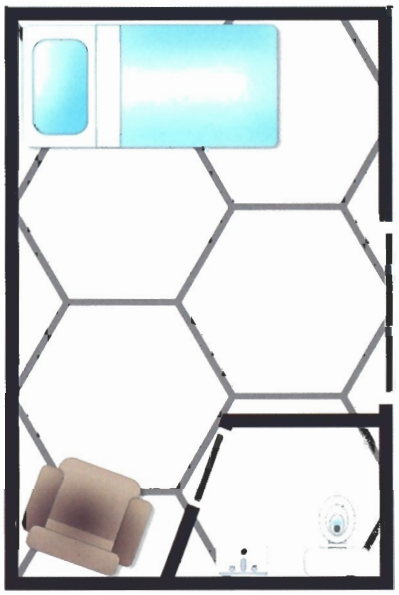
Draw these maps to any convenient scale. A useful scale is 1" = 6' (2 hexes) – half the size of a combat map. Use these maps when you need to sketch a room in some detail but do not want to draw up a combat map.

Combat Maps

Combat does not require combat maps – although they can be handy to help the players visualize the action. *Tactical Combat* (Chapter 12) *does* require combat maps.

Combat maps are drawn to a scale of 1" = 3'; each hex is three feet, or 1 yard, across. When the characters enter an area where combat might occur, lay out a map and have them place their figures on it to show exactly where they are. If combat occurs, play out the fight on the combat map.

Treat any partial hex as equal to a full hex. This allows a realistic representation of either a hex-walled room or an irregular cavern.



Combat Map: 1 hex/inch

Room Map: 2 hexes/inch

Area Map: 6 hexes/inch

Running the Game

The GM's task during the game is simple. All he has to do is listen to the players describe what *they're* doing, then use the rules of the game to tell them what happens, so they can describe what they want to do next . . . and so on. Well, perhaps it's not *quite* that simple!

The sections below will help you, as GM, determine "what happens next" in a variety of situations. But the most important things are not "rules" at all, but guidelines for good GMing.

Use common sense. When *any* rule gives a silly result, follow common sense instead. No matter how much we playtest, *no* rules are perfect – including these. Don't let the players turn into "rules lawyers." *Your* decision is final.

Be fair. Give all the players an even chance, and try to keep all of them involved in the action. And when you change a rule or make a special exception, apply it equally to everybody.

Keep the action moving. A roleplaying game is like a story. As the GM, you're the author. Your main characters have free will, and often the story goes where *they* want it to go! But when things lag, it's your job to liven them up. Improvise an encounter . . . introduce a clue . . . do *something* to get things back on track, or to help the players get some ideas.

Don't lean on formulas. This *definitely* includes the various formulas in the rules! Use them when you need them – but don't let them become crutches. And don't let adherence to a formula spoil the game. For instance, if the hero really *needs* to lift that rock to keep the action going, let him lift it.

Thou shalt not kill. Not much, anyway. In some RPGs, life is cheap. A GM doesn't think he's doing a good job unless he slaughters half the party within the first hour of play. But most players don't find this fun. ***GURPS*** allows complete, detailed character creation. It's a shame to turn such carefully crafted characters into cannon fodder. Remember: good adventure stories don't kill off their heroes without a reason. This is discussed in greater detail below; see *Keeping The Characters Alive* (p. 496). Of course, if you and your players *really* like hack-and-slash games, go right ahead . . .

Settling Rules Questions

In any question of rules, the GM's word is *law.* The GM decides which optional rules to use, and settles any specific questions that come up. A

good GM discusses important questions with the players before deciding – and a good player accepts the GM's decisions.

The GM should know the rules thoroughly. When the rules do not cover a situation – or when a decision about the "real world" is needed – the GM can use several techniques:

Success rolls. A "success roll" is a roll that tests one of a character's attributes, skills, etc. – see Chapter 10. Use a success roll when a question arises about someone's ability to do some particular thing.

Random rolls. A random roll is often best for a question like "Are the keys in the car?" or "Does one of the soldiers have a horse the same color as mine?" The GM decides what the chances are, then rolls the dice. Some things have a 50-50 chance; others are highly unlikely. The GM decides what the odds should be, and leaves the rest to fate.

Arbitrary fiat. You don't have to use the dice at all. If there is only one "right" answer to fit the plot of the adventure – then that's the answer. "Luckily for you, the grenade bounced down the stairwell. Nobody was hurt. But now the guards are alerted!"

Dealing with the Players

Players are *individuals*, with opinions and biases, and there will be times when the GM needs to keep the peace. Here is some advice for doing just that.

Arguments

As the GM, you should *always* listen to reasonable suggestions from the players – and if you make a mistake, you should be willing to reverse your decision. But *you* are the final authority, and the court of last resort. If you make a decision that you think is fair, and someone insists on arguing . . . invite him to leave the game, temporarily or permanently. Games are fun. Arguments aren't. (The other players may step in and shut this down before you get a chance. Let them!)

"I changed my mind!"

Certain players try to "take back" actions when they suffer bad consequences. Don't let them do it unless they could *realistically* have changed their minds in time to avoid trouble.

If George says, "I'm dropping the nitroglycerine," and you roll the dice and tell him, "It just blew up. Take 3d damage," George can't take it back. But if George says, "I'm setting fire to the building," and then changes his mind – let him. "All right. You lit the match and found some newspaper, but then you changed your mind. Stomp out the newspaper." Buildings don't burn that quickly, so George had time to reconsider. (If George had used a flamethrower, of course, it would be different!)

In general, if a player announces that he is performing an *irrevocable* act . . . he really did it, and that's that.

Follow the Leader

If the players select a leader, the leader should speak for the party, telling the GM what they are doing – except in emergencies. Then, it's every man for himself. The leader can give orders, but he *cannot* enforce them unless his *character* can enforce them in the game world. If the leader appeals to you for help, tell him, "You're the leader. *You* keep discipline."

Table Talk

If your players are too noisy, tell them, "If you say it, your character says it." This means that the *characters* cannot be stealthy unless the *players* are quiet, and the *characters* cannot make a speedy decision unless the *players* decide quickly. Enforcing this rule can save the GM's sanity, especially if he has a large group.

Playing the NPCs

A "nonplayer character" (NPC) is anyone played by the GM. The GM gets to play dozens of characters throughout an adventure – from chance-met travelers to powerful patrons and villains.

As the GM, you may create your NPCs in any way you like. You should design *important* NPCs just like player characters, but you can give "cannon fodder" and "bit players" logical abilities by using templates (see *Character Templates*, p. 445) or by assigning appropriate traits on the spur of the moment without regard to point value.

Once you create an NPC – major or minor – *play the role!* Your NPCs will try to earn money, look important and admirable, protect their skins, and achieve their goals – just like anybody else! The more skilled you become at roleplaying, the better a GM you will be and the more fun you (and your players) will have.

Some of your NPCs will automatically be friendly to the PCs; others will be "natural enemies." These reactions will be preset when you work out the scenario. But many NPCs have no "automatic" response to the PCs. Instead, you will use the *Reaction Table* (p. 560) to see how they respond.

Playing the Adversary

When the GM plays an NPC who is an enemy of the PCs, he should try to limit his knowledge to those things that the NPC would really be aware of. The GM knows all about the party's strengths and weaknesses – but their enemies don't. One good way to solve this problem is to have another person play the adversary characters.

The GM should tell the Adversary as much as possible about the characters he is to play. But the Adversary should know no more than is "realistic" about the overall situation. In particular, he should know very little about the PCs and their abilities – especially at the beginning of an adventure! For total realism, you might even want *two* Adversary players – one for knowledgeable enemies who are familiar with the party, and one for stupid cannon fodder.

The Adversary is like an "assistant GM." His job is to roleplay the foes as well as possible. He should *not* play them as mindless killing machines (unless they really are). If the "appropriate" thing for those particular enemies to do is to attack, they should attack. But they might also throw rocks from ambush, shout insults, or even run away immediately!

In any disagreement between the Adversary and the GM, the GM's word is law. But a good GM gives the Adversary as much leeway as possible, and takes any disagreement into another room to avoid distracting the players.

Playing the Adversary is a good way to build up experience if you would like to be a GM someday.

Gaming Online

If you don't have a gaming group in your area, or you still want to game with college buddies who are scattered all over the country (or the world!), you may want to try roleplaying online. There are a number of ways to go about it:

Play by e-mail (PBEM). In this style of play, the GM describes the scene for everyone. Each player then sends his next "move" to the GM, who compiles everyone's moves, figures out what the NPCs are doing during that time, resolves all the actions, and sends out the next installment.

Advantages: no one is forced into hasty action; just about everyone with *any* sort of net access has e-mail, and it works just as well on a 10-year-old computer as it does on the newest model; the GM can attach files to the messages if he wants to show the players something their characters would see; games aren't held up waiting on the perpetually late player to arrive; and no one can steal your munchies.

Disadvantages: it is a *lot* more work for the GM, especially if he is a poor typist; a single encounter can take weeks to complete if the players are slow about replying; and it's just about impossible to run any detailed combats – in fact, many PBEMs actively *avoid* combat.

Play by real-time chat (IRC, M, instant message, etc.).* A compromise between e-mail and face-to-face gaming is using an online chat room or instant messaging service. This has many of the good and bad features of *both* approaches – games have to be scheduled, but the players don't have to be in the same physical location; it's possible to have real-time interaction among the players, but if someone is a slow typist, he bogs the game down (or gets left behind); no one steals someone else's munchies, but no one buys the GM pizza, either. Some chat sites do have dice rollers, however, which makes gaming easier.

Massively multiplayer online RPGs. These are computer games that allow the players and GMs to interact online. Some let you use any game system you like; others come with built-in rules.

We are just breaking into this field ourselves, with ***GURPS Online,*** so perhaps there's some bias here – but it does seem as though MMPORGs are the future of online gaming for many people. These are getting better all the time, and rather than discuss the state of the art as of this printing (which will be outdated in six months and laughably crude in two years), we'll just mention them and suggest that you ask around for help getting started.

Other Online Resources

Even if you aren't gaming online, there are lots – no, *lots* – make that ***LOTS*** – of great places to find support for your tabletop ***GURPS*** game. Here are a few:

Pyramid. Our online magazine is not a "house organ" – it covers games from across the industry – but it does have a lot of ***GURPS*** content, with more added just about every week. The archives of the print issues of *Pyramid* (and its ***GURPS***-only predecessor, *Roleplayer*) have many articles which have never been adapted in later ***GURPS*** publications. With an online chat zone (including gaming areas), message boards, and new content every week, *Pyramid* is a steal.

e23. Our new e-publishing venture has both out-of-print and brand new adventures and source material. It is also growing all the time, so check back frequently to see what new items we've added!

Our website. The SJ Games web page is loaded with extra content (and, eek, errata fixes) for almost every ***GURPS*** book ever published. It also includes downloadable software to help you run games in person or online. Our webforums cover everything we do, including, of course, ***GURPS***, and are a great place to ask questions.

URLs

And here are the URLs:

SJ Games main page: **www.sjgames.com**
GURPS main page: **www.sjgames.com/gurps/**
Forums: **forums.sjgames.com**
GURPS Online: **www.sjgames.com/gurps/online/**
Pyramid: **www.sjgames.com/pyramid/**
e23: **e23.sjgames.com**
GURPS errata: **www.sjgames.com/errata/gurps/**

Reaction Rolls

When the PCs meet an NPC whose reaction to them is not predetermined (see below), the GM makes a "reaction roll" on 3d. The higher the roll, the better the reaction. The GM then plays the NPC according to the guidelines on the *Reaction Table.*

The GM should keep this roll secret from the players. They don't know, for instance, whether that friendly-looking old farmer is giving them straight advice or sending them into a trap.

A reaction roll is *not* a success roll. There are three important differences:

1. There is no "target number" to roll against.
2. A high roll is *good,* not bad.
3. Reaction modifiers apply directly to the die roll. A reaction *bonus* is any factor that will make NPCs *friendlier,* while a reaction *penalty* is something that will bias NPCs *against* the PCs.

Some common reaction modifiers:

Personal appearance and behavior. This is especially true for the PC who does the talking! Above-average

appearance gives a bonus, as do such traits as Charisma, Fashion Sense, Pitiable, and Voice. In most situations, so does a high apparent Status. Below-average appearance and many disadvantages give a penalty.

Skills. A successful roll against a skill appropriate to the situation can give +2 to reactions. Examples include Administration when dealing with bureaucrats, Carousing when partying, and Politics when interacting with politicians. In a few cases, skill 20+ gives an *automatic* +2 to reactions. Diplomacy and Fast-Talk work this way if you are allowed to talk – as does Merchant skill, during commercial transactions. The GM may give similar bonuses for other skills.

Racial or national biases. Elves don't like dwarves, Frenchmen don't care for Germans, and so on. These are usually penalties, and take the form of a Social Stigma disadvantage for the PC or an Intolerance disadvantage on the part of the NPC.

Appropriate behavior by the players! Here's a chance to reward good roleplaying. A good approach should be worth +1 or more! A wholly inappropriate approach that antagonizes the NPCs should give the party -1 or -2 on the reaction roll. Don't tell the players, "You blew it!" – just roleplay the offended character, and let them figure it out.

Random reaction rolls are great when they add a note of unpredictability to the game – this is more fun for the GM, too! However, *never substitute random die rolls for reason and logic.*

Predetermined Reactions

Certain NPCs might have reaction modifiers (mostly bad) worked out in advance. For instance, a street gang might have a -5 reaction to *anybody.*

Predetermined reaction penalties sometimes come with a "best-case" reaction. Treat any reaction better than the best-case reaction as the best-case scenario; do not roll again. For instance, a mountain man might be a loner, with a -2 reaction to any outsider – and no matter what, his reaction will never be better than "Neutral." In this case, the GM would lower any reaction better than Neutral to Neutral.

> ***"I open the door, duck under the poisoned blade trap, step on every third brick, and make sure not to trip the hidden laser sensors."***
>
> If you're using a pre-packaged adventure, it is possible that some of the players have already seen it, or even played through it. (If you're *really* unlucky, one of them GMed it!) As soon as you get a hint that the players are acting from knowledge that they, themselves, should not have, it's time to throw them a curve ball, such as an unplanned encounter, a room that "shouldn't" be there, or a trap they weren't expecting – and, perhaps, to re-evaluate whether you want to be gaming with people who are willing to cheat at the expense of everyone else's fun. Or at least *yours.*

Predetermined *bonuses* and *worst-case* reactions (e.g., "never any worse than Neutral") are possible for unusually friendly NPCs.

Second Reaction Rolls

If the players get a reaction roll they don't like, they may change their approach and try again (unless the first roll started a fight!). Changes in approach include offering a bribe, offering a better deal, having someone else ask, presenting new information, and using a particular skill (see below). If the NPC, as played by the GM, feels that the PCs are becoming a nuisance, apply a cumulative -2 to each reaction roll after the first! The PCs can avoid this penalty by waiting a reasonable time between requests. "Reasonable" is entirely up to the GM!

Influence Skills

The PCs can substitute a roll against Diplomacy, Fast-Talk, Intimidation, Savoir-Faire, Sex Appeal, or Streetwise for a regular reaction roll in certain situations – see *Influence Rolls* (p. 359). The GM still applies any modifiers that would apply to the reaction roll, but treats them as modifiers to the skill roll.

Knowledge

One challenge of roleplaying is to limit a character's knowledge to the things he "should" know.

PC Knowledge

Part of the GM's job is to keep *players* from making use of information that their *characters* could not know.

Anachronistic technology. Players can't use high-tech knowledge that their *characters* could not have. If a medieval character wants to invent gunpowder, or build a compound bow, or use moldy bread for penicillin, you don't have to let him. Of course, *time travelers* can take knowledge into the past.

Similarly, modern characters should not be allowed free use of ancient techniques. Gunpowder is an example *here,* too . . . how many 21st-century people know *exactly* what to combine to make gunpowder – or how to mix, grind, sieve, and use it without blowing themselves up? Modern characters can always *try* to "remember" ancient techniques, by making appropriate (and difficult) rolls against History skill or the particular specialty involved.

Knowledge of history. If your game is set in the "real" past of Earth, the players – if they paid attention in school! – have advance knowledge of how things "really" came out. Don't let them use it – unless, of course, they are time travelers from the future. And remember that, in a game, history *can* be changed – so some of the things the players know *might not be true.*

Literacy. This is important – and lots of fun. If a PC is illiterate, *don't let him read anything!* It is amazing how many players claim -3 points for a written comprehension level of None in their native language . . . but assume they can still read maps, street signs, and shop windows!

NPC Knowledge

Likewise, the GM and the Adversary should not use knowledge that *their* characters could not logically possess. This is the main reason for having an Adversary in the first place . . . so the GM can't use his total knowledge of the PCs against them. The warnings under *PC Knowledge* apply equally to NPCs, but there are some additional things to watch out for:

Objectives of the party. The GM knows the players' true objectives; the Adversary *may* know. But when he plays "ignorant" characters, he must roleplay his ignorance. This might mean that an NPC acts hostile when he "should" be friendly, or vice versa. It also means that when the party sneaks into the castle, the guards can't *all* rush to protect the treasure room. They don't know for sure where the PCs are going!

Abilities of the party. All NPCs – *especially* adversary characters – should react according to the *apparent* strength of the party. A simple example: if the PCs are exploring a dungeon populated by roving bands of orcs, each new band should find out *the hard way* that the party's wizard uses the Explosive Fireball spell – until some orc escapes to spread the word.

Special weaknesses of the party. If (for instance) two members of the party are deathly afraid of snakes, the adversary characters shouldn't know this unless there is a way they could have found out. In fact, the GM shouldn't tell the Adversary things like this in the first place. Let him find out for himself! But even after he finds out, he can't use this sort of fact unless he is playing a foe who *should* know.

Keeping the Characters Alive

There is a basic contradiction in RPGs. On one hand, the players are looking for adventure, and adventures are dangerous. On the other hand, nobody wants to get killed! The GM must walk a fine line between a "giveaway" adventure – where nobody is in real danger – and a wholesale massacre.

The ***GURPS*** rules are designed for two main things: *good roleplaying* and *realism,* in that order. "Realism" means that, in any serious combat, someone is likely to get killed or badly hurt. And, since in real life nobody *wants* to get killed, "good roleplaying" means that most people try not to fight until they *have* to! That goes for your NPCs as well as the PCs.

Good roleplaying (and having a good adventure) is the *most* important thing, though. When good roleplaying conflicts with realism, roleplaying should win out. As the GM, you should try not to let such a conflict occur. But if it does happen, tip the scales toward *fun.*

> *If they really ask for trouble,* ***let them have it.***

In particular, try not to kill too many of the PCs! In a hack-and-slash game, where the PCs are no more than sets of numbers, a death is no loss. In a true roleplaying game, with fully realized heroes who took a long time to develop, losing a character can *hurt.* That is not to say that PCs can't die. They can. But in the best games, they don't die too often.

Keep in mind that RPGs are meant to be *fun.* They simulate the "reality" of heroic fantasy, not the reality of day-to-day life. An RPG is a story that the GM and the players write together. And in the best stories, the heroes (most of them, anyway) survive and triumph. This is more important than "logic." Logically, Luke Skywalker would have been shot down . . . Frodo and Sam would have starved in Mordor . . . Tarzan would have been lion-bait before he was six years old. A classic story defies logic, and *still* you believe it – because you want to. A good game is like that, too.

There are several techniques you can use to keep from killing off your "main characters." Some of these are totally contradictory. As GM, you're the boss. Use whichever methods you like.

Intelligent scenario design. Don't fill your adventures with traps and foes designed to slaughter the PCs. Design a scenario to make the players *think* and *roleplay,* and to give them a fair chance – or perhaps a better-than-fair chance, since they *are* the heroes.

Realistic NPC behavior. Most realistic NPCs won't risk their own lives unnecessarily. Not every encounter turns hostile; not every hostile encounter turns violent; not every violent encounter involves weapons. Of course, some game worlds are more violent than others, but "life is cheap" usually makes for a very poor game.

Even in a violent game world, enemy NPCs will often have a reason to take the PCs prisoner rather than kill them outright: interrogation, ransom, imprisonment, slavery, sacrifice, or what-have-you. Capture and escape are staples of adventure fiction, which is what the game is all about!

And if the PCs are *winning* a fight, your NPCs should try to save their skins. In real life, most guards, beasts, or bandits flee – regardless of duty, hunger, or greed – if a fight goes against them. Play them that way.

Realistic NPC abilities. In most game worlds, the PCs start off with more points than the *average* person. This means that most NPCs are no match for them, physically or intellectually. There are exceptions . . . interesting, dangerous exceptions. But the "man on the street" should have poorer attributes and fewer abilities than the PCs. For the most part, the PCs should be facing inferior foes. This not only keeps the game in balance – it preserves the "reality" of adventure fiction.

This is not to say that an "average" person cannot be dangerous. A 25-point thug can be a nasty fighter, if he takes a couple of disadvantages that don't affect combat and specializes in ST, DX, and combat training. He is more than a match for a 100-point intellectual in a fight. But a 100-point fighter can chop him to bits.

Safety-net rules. Make use of rules that serve to keep the PCs alive. Let them expend FP for bonuses to defense rolls (see *Extra Effort in Combat,* p. 357), or even spend bonus character points to buy successes (see *Influencing Success Rolls,* p. 347). In action-oriented campaigns, consider making Luck a *required* advantage to give the PCs "rules protection" from bad die rolls.

When in Doubt, Roll and Shout

Often, in spite of your most careful preparation, something surprising happens. It could be *anything*. No matter how much you plan ahead, your players *will* come up with something you didn't expect.

That's all right. If they *didn't* come up with anything surprising, your duties as GM would be much less fun. But you still have to cope with the problem.

Let's say, for instance, that the heroes have just discovered the Shrine of the Mother Goddess. Suddenly, they realize that they have been followed! A dozen huge, ape-like creatures stalk through the door and approach menacingly. There are no other exits.

There are several things the players might do, and you're prepared. If they want to fight, you know the combat stats for the ape-things. If they try to make friends, you've already decided that they'll be dragged away to the ape-cave and fattened up for dinner. If they try to flee, or use magic to make a barricade, y re is a secret door behind the altar – if they can find it in t o call on the Mother Goddess, you've decid the spells or

Traps

Fantasy adventures traditionally feature a variety of traps. The novice designer can overdo this, with a crossbow behind every door and a pit in every corridor. If this doesn't *kill* the whole party, it slows the game to a crawl as they check everything in sight for traps – and then check again, to make sure. But a few strategically located traps can make an adventure more interesting.

All of the above remains true in other genres! A criminal stronghold or millionaire's mansion might hold some unpleasant surprises in store for the unwary intruder. Primitive natives encountered by explorers might have some upsettingly sophisticated defenses.

Some common types of traps include poison needles, hidden crossbows (or guns, or lasers), hidden *giant* crossbows (or cannon, or homing missiles), pits (with spikes, snakes, or both), falling weights, rolling boulders, sliding walls (or descending roofs), slippery slides, poison gas, acid sprays, land mines, and many more. Think of the last hundred adventure stories you read!

Not all traps are deadly. The intent might be to cripple, capture, annoy, embarrass, or just frighten the victims. A burglar alarm is nothing more than a trap that only produces sound!

Traps, like rooms, should appear on the map key – or a trap in a room can be part of the room's description. For each trap, specify the following:

- How hard the trap is to notice, and what skills can detect it; e.g., "To spot the concealed pit, roll against Architecture-5, Vision-5, or Traps."
- How hard the trap is to disable or set off harmlessly; e.g., "To disable the trap door, roll against Carpentry or Traps+4."
- What sets off the trap; e.g., "The trap door swings open if anyone who weighs more than 50 lbs. walks on it."
- What happens if the trap is set off; e.g., "Unless the victim can make an Acrobatics or DX-6 roll to catch himself, he falls into the pit and takes 3d crushing damage."

Some GMs delight in the invention of fiendish traps to test their players' wits. Such "puzzle traps" require more than a simple skill roll to disable or escape – the *players* have to think their way out! A *very* simple example might be a sliding-wall trap that will crush the strongest adventurer to death . . . *unless* he opens the manhole in the floor. It's too small for him to fit into – but the lid is of such solid metal that, if held in place, it blocks the closing walls!

Much more complex traps are possible. Have fun. "Puzzle" traps can add flavor to an adventure when simple deathtraps become boring.

mainly of such tables, allowing play to proceed for hours with no planning at all! This is great for a quick game, but not in the same league with a "real" adventure.

Another method is to invent a character on the spot, rolling dice for any important statistics.

If you don't let random encounters become a crutch, they can provide variety and free you from planning every single encounter. Don't let the players know that you are rolling a totally random encounter, however. If they realize an encounter is not "part of the plot," they *will* act differently.

Finale

This is the climax of the adventure. Most adventures have only one finale (unless the party gets killed along the way). As the GM, you should guide the party, as subtly as you can, toward the "big ending" and resolution of the adventure.

The players' earlier actions affect the details of the finale, but its basic nature remains the same. If the players make "wrong" decisions along the way, it takes them longer to finish, and they should have a harder time dealing with the situation – but they *should* make it to the finale eventually. The exception might be a case where they have blundered *so* badly that the finale would certainly kill them all, in which case the merciful GM will drop a hint that they are in over their heads, and let them give up and run for home.

A more sophisticated adventure could have several possible finales, depending on decisions made by the players during the adventure. This sort of "branching-path" adventure is harder to design, but sometimes easier for the GM to run, as it calls for less improvisation.

Sample Encounter Table

A table of trivial roadside encounters for low-tech settings. Roll 1d per hour of travel.

1 – A group of farmers (roll 2d for number).
2 – One holy hermit.
3 – One not-so-holy beggar.
4 – One merchant with horse, wagon, and 1d/2 guards.
5 – A single horseman.
6 – Nothing.

Features of a Good Adventure

A good adventure (by the standards we use for our own publications) includes:

- Many opportunities for the PCs to use *noncombat* skills – including some difficult rolls, and some involving unusual skills (forcing the PCs to roll against defaults).
- Contests between PCs and NPCs – and possibly between PCs as well.
- Situations where the players have to think about the right thing to do . . . puzzles, moral choices, or both.
- Situations where proper use of social skills, like Fast-Talk or Diplomacy, will avoid combat.
- Situations where no possible use of social skills will avoid combat!
- Interesting descriptions of people, places, and things, to give the *players* the feeling that they are really there with their characters.
- A clear introduction, a plotline that builds tension or mystery, and a clear conclusion.
- Opportunity for roleplaying and character development. This should be present in even the most lighthearted hack-and-slash adventure! Fighters are interesting people, too – at least, they should be.
- A reward for characters who complete the adventure successfully, and a consequence for characters who fail!

Organizing a Continuing Campaign

Even more complex (and more interesting) than a full-scale adventure is a *series* of adventures involving the same characters. This is called a *campaign*. If a single adventure is the equivalent of a novel, a campaign is an epic trilogy – the kind that is still going after seven books!

A campaign consists of one adventure after another – or possibly several *overlapping* adventures at once. Each adventure may take many sessions to resolve. The GM decides what goes on in the game world in between game sessions – and especially between adventures. Important NPCs go about their own affairs. Wars, weather, politics, and trade can go on in the "background" of the campaign, giving rise to new adventures. Your players can be a good source of suggestions . . . and they will be tremendously pleased if their adventures affect the "whole world" in some way, whether they turn aside a catastrophic war or simply find a cure for the Queen's wart.

A large campaign can have dozens of players (not all playing at once!), several cooperating GMs, *planets* worth of mapped territory, and *hundreds* of significant NPCs, from kings and popes down to thieves and beggars.

DON'T PANIC. You don't have to do all this at once. Most campaigns just "grow," a bit at a time. One adventure leads to the next, and before you know it, you've been playing for a year and you've got a campaign going. Much of the flavor of a good campaign comes from the players themselves. The PCs' Dependents, Allies, Patrons, and Enemies become continuing NPCs . . . old foes reappear when they are least wanted . . . maps become more detailed each time you play. Players come and go, but the campaign goes on. And nobody learns to run a campaign by reading the rulebook. Experience is the best teacher.

To help, we've included a Campaign Planning Form on p. 567. Filling this out will put you well on your way to adventure!

Shared Campaigns and Travel Between Campaigns

Two or more GMs may agree to let PCs travel between their campaigns. In general, this simply means that one GM will replace another at a preordained time or place. The old GM may remove himself entirely, or introduce a character of his own and remain as a player.

The more similar the GMs' campaigns, the more closely they can be connected. If they operate in the same game world, and if the GMs interpret the rules in the same way and have the same "play style," then the border between their jurisdictions might be as trivial as a river-line or even a city boundary. This is sometimes known as a "shared" campaign.

One good system for GM cooperation involves (for instance) cities. A single "chief GM" is in charge of overall maintenance and development of the game world. A number of the campaign's players also have GM responsibilities of their own. Each such player designs and controls one city. The player controlling that city referees all adventures within its confines. Needless to say, that player's characters should take little part in the action there, even as NPCs. Even the best GM might become somewhat emotionally involved with the PCs he has developed over a period of months! The chief GM runs adventures outside the players' cities. Thus, several players can have the fun of GMing an occasional adventure, while doing no more support work and world-building than they care to.

The same system works in a space campaign, except that each player controls a whole solar system. In a setting with parallel worlds – like the Infinite Worlds campaign in Chapter 20 – each player might control an entire *universe!*

For this kind of campaign to work, the GMs must consult regularly. Minor "cultural" differences between cities or planets are acceptable – in fact, they're fun. But the GMs should agree among themselves about the overall nature and goals of the campaign, if PCs are allowed to move freely back and forth. If two or more GMs wish to "share" players and characters while maintaining significant differences between their worlds, they need a different procedure.

Chapter Nineteen

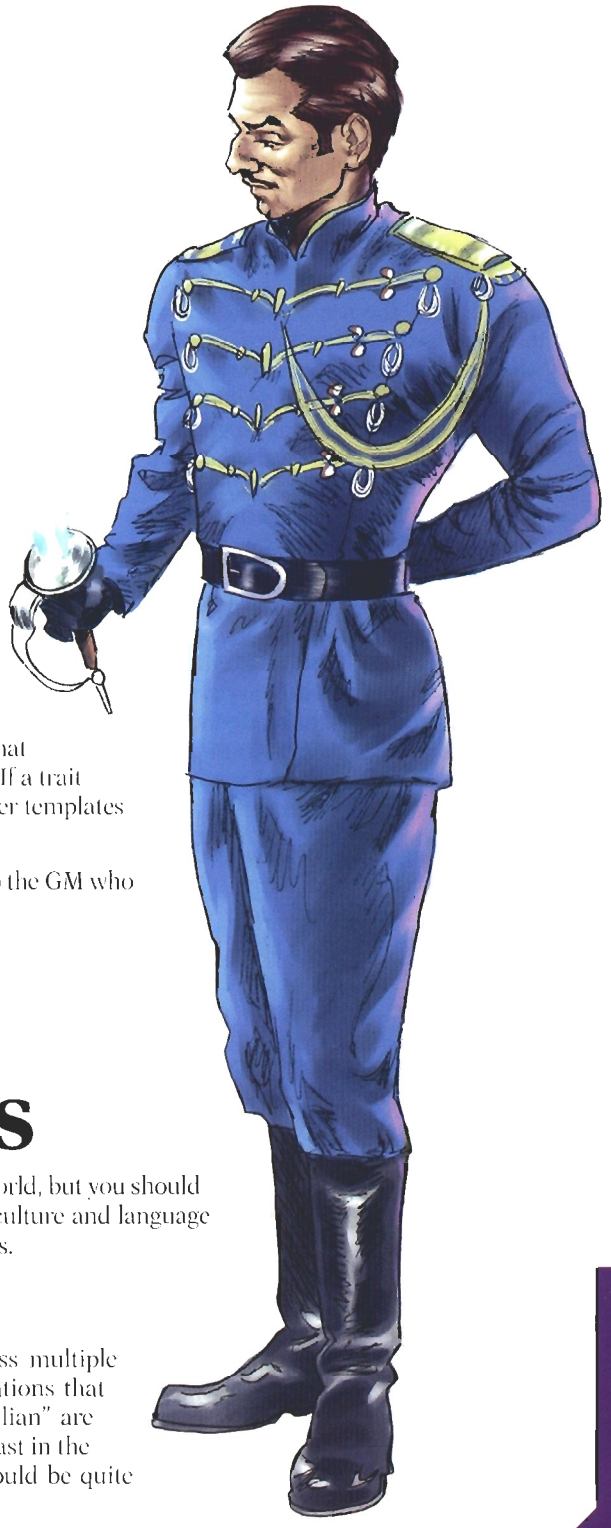
Game Worlds

A "game world" is a complete background setting for a game. It might be an original creation, or it might be based on history, current affairs, or a work of fiction (novel, movie, comic, TV series, etc.).

It takes many hours of research to "design" an accurate historical game world. Worlds based on fiction require research, too – to ensure that every detail conforms to the source, and to extrapolate logically where the original story gave no information. Creating an *original* world, and making it believable and interesting, is the biggest challenge of all.

Some things to consider when designing a game world:

- *Geography.* Map the world, indicating such features as oceans, major rivers, and mountain ranges. For an alien world, you also have to determine gravity, atmosphere, water coverage, climate, etc.
- *Inhabitants.* Create racial templates for the major sapient races (see *Racial Templates,* p. 450), and generate game statistics for common or *interesting* animals and monsters (see Chapter 16).
- *Civilizations.* Describe the major cultures, specifying customs, languages, laws, religions, etc. Mark major political boundaries on the world map. Make notes on economic considerations that will matter to the PCs: jobs, systems of currency, prices, etc.
- *Technology.* Decide what is possible in the realms of communications, medicine, transportation, weapons, and so forth. Don't forget to create price lists for PCs who want to go shopping for equipment!
- *Character abilities.* List any advantages, disadvantages, or skills that are unusually common, that work differently, or that do not exist at all. If a trait works differently, or is unique to the setting, describe it. Create character templates for common professions (see *Character Templates,* p. 445).



This chapter touches on some of these points, and provides advice to the GM who wishes to design his own world.

Cultures and Languages

You do not need to specify every culture and language in the game world, but you should list all the *important* ones. Adventurers operating outside their native culture and language have skill penalties – see *Culture* (p. 23) and *Language* (p. 23) for details.

Cultures

Cultures are extremely broad in ***GURPS,*** and usually encompass multiple nationalities (or *planets,* in futuristic settings). Populations and locations that share cultures change with time. For instance, "American" and "Italian" are distinct nationalities, but both are part of the "Western" culture – at least in the modern world. In 200 A.D., the "Anasazi" and "Roman" cultures would be quite distinct.

Languages

Languages can be considerably narrower; a few might even be exclusive to particular cities or social groups. They are rarely isolated, however. If two languages are close, those who know one at a given comprehension level can understand the other at one or two levels below that, and can improve their comprehension from that level. Worldbuilders should note such connections ahead of time.

Laws and Customs

Each game world has its own laws and customs. Furthermore, laws and customs vary from place to place (and time to time) *within* each world. In some worlds, it is possible to research these things in advance (the Law skill helps here). In other worlds, you must learn them the hard way (Law helps here, too, if you specifically investigate; Streetwise can find out "informally").

As a rule, the *use* of force or the *threat* of force is illegal or improper wherever you go. The stronger the local government (see *Control Rating*, below), the more true this is; government usually considers the use of force to be its own right and monopoly. Self-defense is sometimes an exception – but not always!

Note that public display of noncustomary weapons is a "threat of force," and leads to bad reactions even if it's technically legal. If you walk down a medieval village street in heavy armor, axes and polearms at the ready, the villagers will be *very* suspicious of your motives.

In general:

- Violating a *law* usually leads to some sort of trial (see *Trials*, p. 507) and possible punishment (see *Criminal Punishment*, p. 508).
- Violating someone's *rights* might lead to a "civil" trial and a fine – or just an informal beating.
- Violating a *custom* gives you a reaction penalty – possibly a big one – whenever you try to deal with a local. The offended locals might not even tell you what you are doing wrong!

Control Rating

"Control Rating" (CR) is a *general* measure of the control exercised by a government. The lower the CR, the less restrictive the government and the freer the people. Government type (see *Society and Government Types*, p. 509) does not *absolutely* determine CR – it is possible to have a very free monarchy, or a democracy where the voters have saddled themselves with thousands of strict rules.

Assign CR according to the following guidelines:

CR0 – *Anarchy.* There are no laws, taxes, or controls.

CR1 – *Very free.* Nothing is illegal save use of force or intimidation against other citizens. Taxes are light or voluntary. Only access to LC0 items is controlled (see *Legality*, p. 507).

CR2 – *Free.* Some laws exist; most benefit the individual. Taxes are light. Access to items of LC0 and LC1 is controlled.

CR3 – *Moderate.* There are many laws, but most benefit the individual. Taxes are moderate and fair. Access to items of LC0 through LC2 is controlled.

CR4 – *Controlled.* Many laws exist; most are for the convenience of the state. Broadcast communications are regulated; private broadcasts (like CB) and printing may be restricted. Taxation is often heavy and sometimes unfair. Access to items of LC0 through LC3 is controlled.

CR5 – *Repressive.* There are many laws and regulations, strictly enforced. Taxation is heavy and often unfair. There is strict regulation of information technology: computers, photocopiers, printing presses, transmitters, etc. *All* goods are effectively controlled; you can't buy anything without the appropriate ration coupons or paperwork.

CR6 – *Total control.* Laws are numerous and complex. The individual exists to serve the state. Many offenses carry the death penalty, and trials – if there are any at all – are a mockery. Taxation is crushing, taking most of an ordinary citizen's income. Censorship is common, and private ownership of *any* information technology is forbidden. *All* goods are controlled, and the government might even withhold basic necessities.

If a question of legality arises, or if you need to determine how severely the government checks and harasses newcomers, roll 1d. If the result is *lower* than the CR, then the act is illegal, or the authorities harass, delay, or even arrest the PCs (see *Law Enforcement and Jail*, p. 507). If it is *higher*, either the act is legal or the authorities overlook it. If it *equals* the CR, the situation could go either way: play out an encounter or make a reaction roll.

Travel Etiquette

The wise traveler avoids attracting too much attention. Travelers always stand out if they display technology more advanced than that with which the local citizens are familiar (see *Tech Levels*, p. 511). They also attract unwelcome attention if they violate local laws or customs. In general, any boisterous behavior or breach of peace should have "interesting" consequences.

Travelers should also remember that politeness to local dignitaries is always wise, and strangers met by chance might be more than they appear . . .

The GM should skip this die roll in any situation where there is only one logical outcome. For instance, *regardless* of CR, it is almost always unacceptable for airline and starship passengers to carry weapons.

Split Control Rating

A society does not *have* to have a single, uniform CR. If the GM wishes – and doesn't mind the extra work – he can specify *several* CRs for a society: one for basic human rights, another for taxation, a third for weapons, and so on. In worlds with magic, psionic powers, or super abilities, societies may have separate CRs for these things as well.

Legality

Each item of equipment has a "Legality Class," as defined under *Legality Class* (p. 267). Some modern-day examples include:

LC0 – *Banned.* Weapons of mass destruction; strategic missiles; orbital weapons platforms; intercontinental bombers.

LC1 – *Military.* Heavy weapons; air-defense radar; sensor jammers; armed vehicles; land mines.

LC2 – *Restricted.* Light assault weapons; silencers; surveillance technology (wiretaps, etc.); armored cars; burglar's tools (e.g., lockpicks); explosives; dangerous drugs.

LC3 – *Licensed.* Handguns; hunting guns; radio transmitters; most unarmed vehicles; ordinary drugs and medical equipment.

LC4 – *Open.* Nonlethal weapons (e.g., stunners); home computers; radio and television receivers; cameras; most tools; first-aid kits.

Spell Legality

In a society where magic is common, each spell might have a Legality Class as well. Damage-dealing spells would be on par with light concealable weapons (LC3), while most other spells would be LC4. There are many possible variations: societies that place a high value on privacy would put Knowledge spells in a lower LC; otherwise-tolerant societies might take exception to Necromantic spells; and all "witchcraft" might be LC1 (or 0!) in a puritanical society.

Control Rating and Legality Class

Legality Class interacts with Control Rating as follows:

LC = CR + 1 or more: Any citizen may carry the item.

LC = CR: Anyone but a convicted criminal or the equivalent may carry the item. Registration may be required, but there is no permit fee.

LC = CR - 1: A license is required to own or carry the item. To get a license, one must show a legitimate need or work for the government. Generally, a license costs 1d × 10% of the price of the item itself.

LC = CR - 2: Prohibited except to police SWAT teams, military units, and intelligence services.

LC = CR - 3 or worse: Only permitted to the military or secret police.

Law Enforcement and Jail

If you break the law, it will be the duty of *some* local official to do *something* about it. This can range from a polite request that you clean up your act, through arrest and jail pending a trial, to judgment and execution on the spot.

Arrest

In some places, police are also judge, jury, and executioner, empowered to make an instant decision and act on it. This has to do with local values, not CR! The only lawman in a CR1 frontier town and a secret policeman in a CR6 dystopia are equally likely to execute lawbreakers – but for very different crimes.

In societies that respect human rights – and in some legalistic societies that stand on procedure – the GM will secretly roll against the Law (Police) skill of the arresting officer. On a critical failure, the officer bungled the arrest so badly that the authorities release the prisoner without a trial. On a failure, the officer made a procedural error that the prisoner *might* be able to exploit. He or his lawyer gets a Law (Criminal) or Law (Police) roll to spot it; on a success, he identifies the error and the charges are dropped. This roll *cannot* be against default Law skill!

If you break the law, it will be the duty of some local official to do something about it.

Jail

"Jail" is where the accused is held pending trial. In theory, this is not the same thing as "prison," which is where convicted criminals serve sentences. In reality, the two are often one and the same.

Jails range from "honor systems" to dungeons with chains. Many game worlds have widely varying types of jail, depending on the crime, the accuser, the Status of the prisoner, and any timely bribes.

Jail time between arrest and trial is highly variable. It depends on local laws, whether a judge is available, and – if there is a judge – how busy his court is. In general, the higher the CR, the longer the possible wait.

Bail

The authorities *might* be willing to release a jailed prisoner on "bail": a sum of money that serves as a pledge that he will return for the trial. The amount required depends on the severity of the charges, the prisoner's Reputation and legal record, and the judge's reaction to the prisoner. If the prisoner flees ("jumps bail"), he will face additional charges.

Trials

A trial might be totally fair and honest . . . or entirely for show, with a predetermined outcome. It might be rigorously formal, or noisy and informal.

Trial by Ordeal

This is a trial in which Fate is supposed to decide guilt or innocence.

Example: Anyone accused of witchcraft is thrown into a pond. Anyone who floats is a witch, and is taken out and burned. Those who sink must have been innocent.

For a trial by ordeal, the GM should determine the success rolls needed to survive. (The above example would be hard to survive!) More examples: walk a beam across a canyon (roll DX-4 every 10 feet; those with Perfect Balance don't need to roll); hold a hot piece of iron (roll ST-3 *and* Will-3, at +3 for High Pain Threshold); find your way out of a maze (roll IQ; Absolute Direction gives +3).

Trial by Combat

Trial by combat is like trial by ordeal, in that Fate is supposed to judge guilt or innocence. As a rule, though, trial by combat provides the punishment as well: the guilty party dies. A trial by combat might be fair (evenly matched champions), loaded (uneven champions), or totally unfair (throw the prisoner into a pit with a monster).

Bribery

If the judge presiding over your trial is corrupt, bribery might buy you a reaction bonus – or even an automatic victory. But if the judge is honest, attempted bribery will cast doubt on your innocence, giving a reaction penalty and possibly bringing *further* charges.

Trial by Judge

In some societies, a noble, elder, magistrate, etc. unilaterally decides guilt or innocence. The GM determines the judge's reaction toward the accused by making a reaction roll, and bases the judge's decision entirely the result.

In some trials, an Influence roll against the appropriate Law specialty, by the accused or his lawyer, can replace this reaction roll; see *Influence Rolls* (p. 359). In other trials, the accused might not be allowed to have a lawyer, or even speak!

If two parties ask a judge to settle a dispute, make a reaction roll for both. The judge will find in favor of the party that gets the best reaction.

Modifiers: +1 to +3 for evidence or testimony that favors the accused, or -1 to -3 for evidence or testimony against him, *if* the judge is inclined to listen; reaction modifiers for the Reputation, Social Regard, Social Stigma, and Status of the accused; other reaction modifiers that the GM feels apply with *this* judge.

Adversarial Trials

In still other societies, trials are a Quick Contest of Law (Criminal) skill between the prosecution and defense, in the presence of a judge and possibly a jury. If the accused chooses to defend *himself*, he is at -1 to -3 due to his emotional involvement. (The saying "The lawyer who defends himself has a fool for a client" is often true!)

Record the results of the Quick Contest, and then make a reaction roll for the judge or jury (as appropriate).

Modifiers: A bonus equal to the defense's margin of victory, or a penalty equal to the prosecution's margin of victory, depending on the victor; +2 or more if the *player* roleplayed a compelling defense; +1 to +3 if the evidence supports the defendant, or -1 to -3 if it supports the prosecution; +1 or more for a plausible alibi; -1 or more for bad publicity; -2 if the defendant jumped bail (see *Bail*, p. 507); -3 if an eyewitness placed the defendant at the crime scene; any bonus or penalty for the defendant's Reputation.

The reaction *is* the verdict: a reaction worse than Neutral means "guilty"; a reaction better than Neutral means "not guilty." Neutral reactions go to the side that won the Quick Contest. If that was a tie, the result is an acquittal.

In the case of a conviction, punishment is left to the GM, playing the part of the judge. See *Criminal Punishment* (below) for ideas. If a PC behaves in a way that truly deserves punishment, the GM should not feel obliged to get him out of it, even if the penalty is serious.

Somebody's going to emergency,
Somebody's going to jail.
– Don Henley, "New York Minute"

Criminal Punishment

The severity of the punishment for a crime will depend on the crime, the victim, the accused, and the judge's reaction. Punishments are generally more severe in high-CR societies. Punishments might include:

- Fines or restitution.
- Public humiliation; e.g., the stocks (treat as a bad Reputation with those who witnessed the punishment).
- Prison sentences, sometimes at hard labor.
- Beating, stoning, flogging, etc.
- Branding (treat as a Social Stigma).
- Maiming – temporary or permanent.
- Deprivation of rights; e.g., loss of citizenship, loss of the right to carry weapons, or reduction in formal Status.
- Exile, temporary or permanent.
- Slavery, either to the government or to the victim of the crime.
- Imposition of a specific task or quest, possibly by a magical geas.
- Imposition of a psionic or magical bond or geas to make repeat offenses impossible.
- Combat in the arena (the worse the punishment, the worse the foe).
- Torture.
- Execution (not too useful in game terms, except as a threat to force the party to take immediate action to rescue the prisoner).

Society and Government Types

Mankind has lived under dozens of different societies. Futuristic, fantasy, and alien settings might offer dozens more – some of them very *different*. A few possibilities appear below, in order of increasing Control Rating (see *Control Rating*, p. 506). The GM should choose a society type for each major society in the game world.

Anarchy

There are *no* laws. The social conscience (or strength and weaponry!) of the population maintains order. "Anarchy" could mean a lawless mob . . . or a society of clear-eyed, strong-backed pioneers. CR0, but if your well-armed neighbors unanimously disapprove of what you're doing, it is effectively illegal!

Athenian Democracy

Every citizen (the definition of "citizen" can vary) votes on every action the society takes. Below TL9, this is only practical for groups under 10,000. At TL9+, information networks allow large populations to discuss and vote electronically. CR2 to 4.

Representative Democracy

Elected representatives form a congress or parliament. If the citizens are vigilant and informed, this is a benevolent government. If the citizens are badly educated, government policies are bad but popular (bread and circuses!). If the citizens are apathetic, factions or special-interest groups may dominate government. In all cases, conspiracies may operate to control the society. CR2 to 4.

Clan/Tribal

The society is one large, interlocking family made up of allied clans or tribes and ruled by the clan elders. Customs and tradition are very important. Younger clan members might feel forced to conform, or become rebellious to protest their lack of influence; seniors may channel this energy by encouraging sports, recreational combat, or adventuring. CR3 to 5.

Caste

As for *Clan/Tribal*, but each clan has a set role or profession. Those who don't follow their clan profession become clanless (a Social Stigma), unless there is a system for adoption into a new clan. Clans usually form a social hierarchy; e.g., administrators outrank warriors, who outrank street sweepers, and so on. Individuals are expected to associate only with those of equivalent status. There may also be rivalries among clans of the same type (different warrior families, for instance). CR3 to 6.

Dictatorship

All government is vested in a single ruler – king, dictator, etc. (If the ruler is a king, this is a *monarchy*.) Succession might be by inheritance, election, single combat, or any number of other means. This sort of government can act faster, for good or for evil, than most representative governments. Dictatorships (and other totalitarian states), if they endure long enough, sometimes develop a "balance wheel" in the form of custom. Though the ruler's will is law, there are unwritten laws that even he may not violate with impunity. CR3 to 6.

Technocracy

Engineers and scientists rule in the name of efficiency. Everything is carefully planned; of course, plans can go wrong. The better the technocrats are at running things, the less oppressive they are; if they're incompetent, they are also dictatorial. CR3 to 6.

Theocracy

This is rule by a religious group or leader. Freedom of religion is unlikely, and there is no distinction between religious and civil law. The leaders may or may not believe in their own religion; "miracles" might be faked or *genuine*. Theocracies range from benign utopias to totalitarian religious dictatorships. CR3 to 6.

Corporate State

Corporate officers rule the society. Most citizens are employees of the corporation. Society runs smoothly – it has to, or it can't be profitable! CR4 to 6.

The Big Picture

The GM should also decide how the major societies in the game world interact with one another. Possible political situations include:

World Government: **One government rules the entire world (which might be a continent in a low-tech setting, an entire galaxy in a very high-tech one). Regional differences, if any, are strictly cultural or linguistic.**

Coalition: **A few powerful allies dominate the world. They squabble on occasion, but they usually present a united front. The individual societies are still quite distinct, and might have radically different government types.**

Factionalized: A small number of rival "blocs" or superpowers dominate the world. Each bloc has enough economic and military might to rule the world, but the other blocs would sooner unite in opposition than let that happen. As a result, alliances shift regularly. Ties *within* blocs are more permanent.

Diffuse: There are dozens, if not hundreds, of clans, nations, and groups. No one can make any claim to world domination.

Feudal

Similar to monarchy (see *Dictatorship*, above), but subsidiary lords retain local power; therefore, the ruler must be careful to maintain the lords' support, or be overthrown. Since each lord rules his own territory, laws and personal freedoms will vary from dominion to dominion. CR4 to 6 (at least for the commoners).

VARIATIONS

One or more of these special situations may apply to most of the society types listed above:

Bureaucracy: A self-perpetuating "civil service" runs the society from day to day. Because these bureaucrats are not elected, they are largely insulated from public pressure. Government *seems* to run very smoothly – if there are difficulties, you aren't told about them. But there are high taxes, many laws, and lots of red tape. The government is unresponsive to citizens. There may not be a free press. CR4+.

Colony: A dependent region ruled by the mother society, usually through a governor. The colonists may have an elected council (through which they influence the governor), an elected representative to the mother government (with nonvoting power), or both – but they have no *direct* say in their own government. Colonies have less government than the mother society; reduce CR by 1 or more. Rebels and outcasts may be welcome if they have useful skills.

> *LIBERTY, n.: One of Imagination's most precious possessions.*
> – *Ambrose Bierce,* ***The Devil's Dictionary***

Cybercracy: A statewide computer system controls administration – and perhaps actual legislation! This is *impossible* before TL8, and highly unlikely before TL9. Government might be efficient, inhuman, or both. The system is only as good as its programmers and technicians. Trust the Computer . . . CR3+.

Matriarchy: Positions of authority are open only to females. Any CR is possible.

Meritocracy: No one may enter the government without passing a series of tests. A good meritocracy is likely to have competent leaders . . . but this can lead to a rigid caste system. CR3+.

Military Government: The military runs the state. A society led by a single commander-in-chief is likely to be a dictatorship; one where the commander must answer to a council (or *junta*) of officers is likely to be feudal. Military governments *can* be strong and honest, but most are totalitarian. CR4+.

Oligarchy: Regardless of the nominal form of government, leadership is in the hands of a small, self-perpetuating clique. CR3+.

Patriarchy: Positions of authority are open only to males. Any CR is possible.

Sanctuary: A sanctuary refuses to extradite the "criminals," "refugees," or "terrorists" hunted by other societies. This might be informal, or there might be a tribunal to decide each petitioner's fate. Lawmen or bounty hunters from elsewhere are outlaws here. CR is rarely over 4.

Socialist: The government directly manages the economy. Citizens get free or subsidized education, medical care, housing, etc., and the government tries to give everyone a job. The resulting expenses can stifle an economy at low TLs. Most wealthy, high-tech states have elements of "mild socialism," such as heavily subsidized health care and "safety-net" welfare benefits for the poor. Like any government expenditure, these benefits might raise local taxes. CR3+.

Subjugated: This society is under outside control – whether military (an occupying army), economic (a "puppet government," subservient to foreign masters), or something else (e.g., magical mind control). CR4+.

Utopia: A utopia is a perfect society in which all citizens are satisfied. CR always seems low . . . but is it? Real utopias are rare. Seeming utopias often have some dark secret – for instance, a hidden technocracy ruling by mind control. A sinister utopia is a real GMing challenge. A genuine utopia is an excellent "good guy" society for the heroes to save from conquest or other threats (but real utopias, unless threatened by destruction, are boring).

Restrictions

Powerful or advanced societies might attach "restricted" status to uninhabited regions – or even to weaker or more primitive societies. Examples include:

Embargoed: A stronger society might prohibit *all* trade with a weaker one. They usually enforce this through military means, and search visitors carefully to prevent smuggling.

Hazardous: The region harbors something dangerous: cannibals, vicious wildlife, magical storms, etc. Buoys, signs, flags, etc. warn travelers of the risk. The authorities don't move to prevent entry into the region . . . but they don't rescue travelers who get into trouble, either!

Prohibited: The region is *completely* off limits without special permission. This might be because the region is hazardous or quarantined – or because it contains some kind of secret (often military). The authorities might forcibly remove trespassers, prevent them from leaving, or simply destroy them on sight.

Protected: The authorities limit contact in order to protect native culture, wildlife, etc. Visitors might have to undergo medical quarantine before entering the region, or be prohibited from carrying certain equipment. They might even have to disguise themselves as natives!

Reserved: The region is off limits for colonization or development.

Tech Levels

"Tech level" (TL) is a *general* rating of a society's highest achievement in technology (or a certain type of technology). Tech levels run from zero on up. Each TL describes a set of technologies that become available after a certain point in time. The standard TLs, and associated eras on Earth, are:

TL0 – Stone Age (Prehistory and later). Counting; oral tradition.
TL1 – Bronze Age (3500 B.C.+). Arithmetic; writing.
TL2 – Iron Age (1200 B.C.+). Geometry; scrolls.
TL3 – Medieval (600 A.D.+). Algebra; books.
TL4 – Age of Sail (1450+). Calculus; movable type.
TL5 – Industrial Revolution (1730+). Mechanical calculators; telegraph.
TL6 – Mechanized Age (1880+). Electrical calculators; telephone and radio.
TL7 – Nuclear Age (1940+). Mainframe computers; television.
TL8 – Digital Age (1980+). Personal computers; global networks.
TL9 – Microtech Age (2025+?). Artificial intelligence; real-time virtuality.
TL10 – Robotic Age (2070+?). Nanotechnology or other advances start to blur distinctions between technologies . . .
TL11 – Age of Exotic Matter.
TL12 – Whatever the GM likes!

Note that TLs have start dates but *not* end dates. The innovations of a given TL fade as those of higher TLs displace them, but they rarely vanish completely. A blacksmith in 1850s England uses TL3 techniques to shoe the horses that pull the carriage the gentleman rides to catch his TL5 train to London – and those techniques might still exist in TL8, albeit as a quaint hobby. The GM should decide which "dated" technologies remain in use in his game world, and which items from earlier TLs are still commonly available for purchase.

Differences in tech level become very important when adventurers travel between societies. Technology is likely to seem like magic to anyone more than three or four TLs less advanced. If a WWII soldier (TL6) gets dropped back into the days of King Arthur (TL3) . . . things get interesting. Of course, time travel isn't necessary – even today, you can drop back three or four TLs if you visit the right part of the world.

A party *always* attracts attention if it displays technology from a higher TL than that of the locals. This attention might take the form of worship, awe, curiosity, envy, fear, or hatred – the greater the disparity in TL, the stronger the reaction.

The GM should set a "baseline TL," which describes *most* societies in the game world, most of the time. However, exceptions may exist.

Backward Societies

A society might have a lower TL across the board. This could be because it is impoverished, isolated (either geographically or economically), resistant to change (such as 17th-century China), or regressed (possibly in the wake of war or natural disaster). PCs from such societies will have the Low TL disadvantage (see p. 22).

Advanced Societies

Likewise, the TL of a particular society might be *higher* than that of the rest of the game world. If the GM chooses to introduce such advanced societies, he should ensure that PCs who wish to use their advanced technology pay the points and cash to acquire it honestly. PCs from such societies must have the High TL advantage (see p. 23).

Split Tech Level

Realistic societies rarely have the same TL in every field of endeavor; they tend to be advanced in some fields, backward in others. GMs who desire extra detail can rate each society for its TL in a few key areas. It is most efficient to list only those TLs that differ from the baseline; e.g., "TL8 (Communications TL7, Medical TL9)."

PCs have a personal TL equal to their society's baseline TL, but the TL of their technological skills matches that of their society in the relevant area.

Variations Within a Tech Level

The equipment listed for a TL does not appear all at once as soon as a society enters that TL. Instead, items appear gradually after that date.

Shortly after a TL begins, devices from the *previous* TL will be common – along with experts in skills associated with those items. A player could easily justify a PC with a personal TL one step below that of his society, or with one or two skills that are *several* TLs out of date.

As the TL wears on, devices from the *next* TL start to appear. If PCs wish to obtain such equipment, they must either invent it or buy a prototype – see *New Inventions* (p. 473). Access to prototypes is *not* sufficient to justify a PC with a personal TL above that of his society!

At the GM's option, adventurers may have a skill penalty of -1 or more when dealing with technology *of their own TL* that is more or less advanced than what they are used to. Treat this as an unfamiliarity penalty; see *Familiarity* (p. 169).

Finally, the GM should be aware that not every item of a given TL *must* appear in every society that attains that TL. The GM always has the final say as to which items are currently available – both to the PCs and in the game world in general.

Tech Level by Field

It is often important to know what a given TL implies for a particular area of knowledge – for instance, when using the *Building Up Local Technology* and *Split Tech Level* rules. The tables below outline the effects of TL on four sample fields. Many other such fields exist: architecture, communications, materials, etc.

Transportation

TL0 – Skis; dogsleds; dugout canoes.
TL1 – Bare horseback; the wheel (and chariots); shipbuilding; sails.
TL2 – Saddle; roads; triremes.
TL3 – Stirrups; oceangoing sailing ships (longships, roundships, etc.).
TL4 – Stagecoach; three-masted sailing ships; precise navigation.
TL5 – Steam locomotives; steamboats; early submersibles; balloons and early airships.
TL6 – Automobiles; continental railways; ocean liners; submarines; aircraft.
TL7 – Nuclear submarines; jet aircraft; helicopters; manned space flight.
TL8 – Satellite navigation; SSTO ("single stage to orbit") spacecraft.
TL9 – Robot cars; space elevators; manned interplanetary space flight.
TL10 – Fast interplanetary space flight.
TL11 – Manned interstellar space flight.
TL12 – Fast interstellar space flight.

Superscience! Reactionless thrust; contragravity; faster-than light (FTL) travel; matter transmission; parachronic technology; time machines.

Weapons and Armor

TL0 – Wooden and stone weapons; primitive shields; hides for armor.
TL1 – Bronze weapons and armor.
TL2 – Iron weapons; iron armor (including mail); siege engines.
TL3 – Steel weapons; early firearms; plate armor; castles.
TL4 – Muskets and pikes; horse artillery; naval broadsides.
TL5 – Early repeating small arms; rifled cannon; ironclads.
TL6 – Smokeless powder; automatic weapons; tanks; combat aircraft.
TL7 – Ballistic body armor; guided munitions; combat jets; nuclear weapons.
TL8 – Smartguns; blinding lasers; unmanned combat vehicles.
TL9 – Electrolasers; heavy laser weapons; battlesuits; combat robots; designer viruses.
TL10 – Compact laser and heavy particle-beam weapons; Gauss guns; nanotech armor; nanoviruses; antimatter bombs.
TL11 – Compact particle-beam weapons; disassemblers ("gray goo"); defensive nanites.
TL12 – Gamma-ray lasers; "living metal" armor; blackhole bombs.

Superscience! Monomolecular blades; force-field technology; gravitic weapons; nuclear dampers; disintegrators.

Power

TL0 – Human muscle power; dogs.
TL1 – Donkeys; oxen; ponies.
TL2 – Horses; water wheels.
TL3 – Heavy horses and horse-collars; windmills.
TL4 – Improved windmills; belt drives; clockwork.
TL5 – Steam engines; direct current; batteries.
TL6 – Steam turbines; internal combustion; alternating current; hydroelectricity.
TL7 – Gas turbines; fission; solar power.
TL8 – Fuel cells; advanced batteries.
TL9 – Micro fuel cells; deuterium-hydrogen fusion; high-temperature superconductors.
TL10 – Helium-3 fusion; antimatter.
TL11 – Portable fusion power.
TL12 – Portable antimatter power.

Superscience! Broadcast power; cold fusion; zero-point energy; total conversion; cosmic power.

Biotechnology/Medicine

TL0 – First aid; herbal remedies; primitive agriculture.
TL1 – Surgery; animal husbandry; fermentation.
TL2 – Bleeding the sick; chemical remedies.
TL3 – Crude prosthetics; anatomical science.
TL4 – Optical microscope makes cells visible.
TL5 – Germ theory of disease; safe anesthetics; vaccines.
TL6 – Antibiotics; blood typing and safe transfusions; heredity; biochemistry.
TL7 – Discovery of DNA; organ transplants; pacemaker.
TL8 – Genetically modified organisms; gene therapy; cloning.
TL9 – Human genetic engineering; tissue engineering; artificial wombs; cybernetic implants.
TL10 – Brain transplants; uploading; bioroids; uplifted animals.
TL11 – Living machines; cellular rejuvenation.
TL12 – Full metamorphosis; regeneration.

Superscience! Fast-growth clone tanks; psi drugs; regeneration ray.

Borrowed Technology

A society can be familiar with technology that it does not itself possess. This is frequently the case for low-tech societies with high-tech neighbors, and for colonies. A village with Iron Age technology (TL2) might be quite familiar with the TL3 steel weapons carried by travelers, and richer villagers might have a few, but local smiths could not duplicate or repair them. Express this as "TL2/3." PCs from such societies have a personal TL equal to the *lower* TL, but may learn the skills needed to use (but not repair or design) equipment of the *higher* TL.

Building up Local Technology

There may be times when you need to improve the local TL. A group of castaways might have high-tech knowledge, but little or no equipment to work with. In that case, they need to "build the tools to build the tools" to use their technological knowledge. In extreme cases, your castaways might have to go all the way back to primitive mining to get the ore to refine to metal to build the tools to build the tools . . . ! Or a single traveler might want to impart his high-tech knowledge to the people he is visiting. (We assume that he has the cooperation of his hosts, or he doesn't have a chance.)

Any such situation is largely at the GM's discretion. But it *can* be done. Some of the best adventure stories of all time have revolved around one of these premises: *Swiss Family Robinson, Lord Kalvan of Otherwhen,* the *Riverworld* series, *A Connecticut Yankee in King Arthur's Court,* etc.

General guideline: a "science" is one of the categories of knowledge listed under *Tech Level by Field* (p. 512). It takes *two* years of work to move each science from one TL to the next, assuming that:

(a) you have an ample supply of labor;

(b) you have an ample supply of raw materials;

(c) you are fully familiar with the lower TL (all relevant skills at 12+); and

(d) you know where you're going, and are fully familiar with the higher TL (all relevant skills at 12+).

This rule is specifically for high-TL characters re-inventing or introducing technology to a low-tech society or situation. It does *not* cover inventions – for that, see *New Inventions* (p. 473).

Different Technologies

Some technologies (and some *societies*) do not fit nicely onto the standard tech-level charts. GMs who run into this problem might wish to use one of the *optional* rules below.

Technology Paths

Certain categories of inventions might appear in an order other than that suggested by the default TLs. In particular, there is *no* guarantee that TL9+ technologies will appear in the order ***GURPS*** predicts. Apply the *Split Tech Level* rule (p. 511) as liberally as you wish to simulate your favorite genre! For instance, in a "cyberpunk" society, computing, bionics, and biotechnology might be two to four TLs more advanced. In contrast, a "retro-tech" setting that mimics 1940s sci-fi might have computers frozen at TL6 but many other technologies at anywhere from TL9 to TL12. Any combination is possible!

Divergent Tech Levels

In other cases, a society has a single, *consistent* TL – but it got there along an unusual path. The GM can designate this "divergent TL" with the notation "TL(x+y)," where x is the TL at which the technology diverged, y is the number of TLs since the divergence, and the sum x+y is the *effective* TL for most purposes.

Example: TL(5+1) is effectively TL6 – but a *different* TL6 that split off at TL5. TL(5+1) devices produce similar results to TL6 ones, but look little like those devices and rely on different operating principles. A TL(5+1) "steampunk" world based on Victorian visions of the future might have steam cars, steam dirigibles, and high-speed telegraph lines instead of the automobiles, airplanes, and telephones of TL6.

Divergent TLs are not unique. There could be any number of versions of (for instance) TL(5+1), each different in its own way. The GM should specify what caused the split in each case, be it different thinking, different prevailing physics, or something else.

Characters used to a "normal" or "differently diverging" TL suffer an *additional* -2 penalty for unfamiliarity, over and above any penalties for TL differences, when dealing with divergent technology.

Superscience

"Superscience" technologies violate physical laws – relativity, conservation of energy, etc. – as we currently understand them. Examples of superscience technologies appear under *Tech Level by Field* (p. 512), and several articles of superscience equipment appear in Chapter 8.

By definition, it is impossible to set a firm TL for superscience – we might discover faster-than-light travel tomorrow, a thousand years from now, or never. Equipment TLs are always debatable, but superscience

Improving Skills in Alternate Tech Levels

An adventurer who wishes to learn a technological skill can save points if he already knows that skill at another tech level. Treat the skill at the new TL as a *different skill* that defaults to the known skill at the penalty listed under *Tech-Level Modifiers* (p. 168); e.g., Engineer/TL5 defaults to Engineer/TL7 at -3. Handle improving skills from "cross-TL" defaults identically to improving any skill from default; see *Improving Skills from Default* (p. 173). (If your skill is not high enough to let you start from a favorable default, ignore these rules and learn the skill normally.)

TLs are *arbitrary*. To reflect this, the rules give the TL of superscience developments as "^" instead of a number. The GM is free to assign such innovations to *any* TL. To note a superscience invention that appears at a specific TL in a particular game world, put a "^" after its TL; e.g., "TL3^" for a TL3 superscience item.

Remember: superscience doesn't *have* to change a society's overall TL, create a new technology path, or cause a divergent TL. It just adds totally new developments to all the usual technologies for a given TL in that society.

Tech Level and Genre

When designing a game world with a specific genre in mind, the GM should be sure to choose a TL that will meet his players' expectations for the genre. Some examples:

- *Sword & Sandal:* Gladiators, chariots, and amazons. TL1-2.
- *Medieval Fantasy:* Knights, wizards, and castles. TL3.
- *Warring Provinces Japan:* Samurai and ninja. TL3-4.
- *Swashbucklers:* Pirates and musketeers. TL4.
- *Wild West:* Cowboys and Indians. TL5.
- *Steampunk:* Fiction of Jules Verne and H.G. Wells. TL5, diverging to TL(5+1).
- *Pulp:* Archaeologists and detectives between the World Wars. TL6.
- *WWII:* Axis and Allies. TL6.
- *Cold War:* Capitalism vs. communism. TL7.
- *Modern Day:* You're living in it! TL8.
- *Cyberpunk:* Netrunners and cyborgs. TL9.
- *Space Opera:* Interstellar adventure. TL10+, plus superscience.

Economics

Each game world has its own economic situation. But *money*, in some form or another, is important in almost every setting.

Money is *anything* you can exchange for what you want. It varies from one game world to the next. In a high-tech world, everything might be done by credit card. In a low-tech world, gold and silver may be king.

For the sake of convenience, ***GURPS*** prefixes all prices with a dollar sign – $ – in all settings. The GM is welcome to translate this to credits, copper farthings, Martian foomphra, or whatever he feels is appropriate to the game world; see *Tech Level and Starting Wealth* (p. 27).

In a low-tech world, jewelry is also money. It might not have a set value imprinted on it, but it is small and portable, and easily traded for coins or bartered directly for needed goods. In fact, many societies exist largely by barter – which can be a test of the players' ingenuity.

Bankrolls and Possessions

List the money a character has on his person on his character sheet, just like his other possessions. If a *lot* of transactions are taking place, it might be wise to record money on a separate sheet of paper to avoid erasing a hole in the character sheet!

List the money a character does *not* carry with him separately, along with its location. The GM may arrange floods, bank robberies, tax increases, and other entertainments to deprive the PCs of their savings – or at least make them work to get their money back. The same is true of all other possessions the heroes do not carry with them.

Moving Money Between Worlds

If the PCs move between game worlds (see *Travel Between Game Worlds*, p. 520), they will naturally want to take some cash along. But what is "legal tender" in one world might be worthless in another. There are two principles for the GM to remember here:

1. Money in a new world isn't "legal tender"; it's a commodity. If you bring medieval gold coins to the 21st century, they will sell as curios – or as gold, for perhaps **$400 a troy ounce. If you take American paper** money to the 10th century, it will **be worthless. So, rather than money,** take along a few plastic hard-hats and maybe an **MP3 player. ("What** am I bid for this miraculous orchestra in a box?")

2. A cross-world trading operation can get very rich very quickly. If a GM allows cross-world travel, it is up to *him* to preserve balance by limiting the quantity or type of goods that traders can move between worlds. A suggested limit: only what the travelers can carry on their persons – and trips should *not* be frequent.

Buying and Selling

Players can buy and sell among themselves at whatever prices they can agree on. For outside transactions, the GM (or Adversary) should roleplay a merchant dealing in the needed goods or services. Most transactions do not require a reaction roll. Only make a reaction roll if the situation is in some way unusual. For instance, if the adventurers are new in town and have been swaggering around in armor and acting strangely, roll to see if the merchants will have anything to do with them!

In general, the GM should set prices reasonably, following the laws of supply and demand. Camels are valuable near the desert, worthless in the jungle. After a great battle, used armor might be on sale at scrap-metal prices. And so on.

The Merchant skill (p. 209) will help the PCs get good deals.

Equipment and Supplies

The GM should give the players a list of standard equipment and supplies, and their "normal" costs. The items and prices on the list will vary from game world to game world.

The players *will* want to buy things that aren't on the list. The GM should allow any reasonable purchase – as *he* defines "reasonable" – setting prices by comparison with things on the list. Real-world catalogs can be useful here!

For more information, see Chapter 8, *Equipment*.

Making Your Own Goods

Adventurers with appropriate skills may want to save money by making their own equipment. Use the following guidelines in this situation.

Starting equipment always costs "list price," even if the PC could have made it himself. Assume that buying materials and taking time out to make the item had the same impact on the PC's starting wealth as if he had bought the item.

Building equipment *in play* is legal . . . if the GM is willing to go along with it. Some things to consider:

1. What raw materials are needed, and how much will they cost? "Parts cost" is usually around 20% finished item cost.

2. How long will it take? PCs who build equipment between adventures can't earn income or learn skills during that time. PCs who build equipment *during* adventures are out of the action.

3. What skills are required, and what happens on a failure or critical failure? As a rule, failure just ruins the raw materials. Critical failure produces equipment that fails catastrophically when used!

It would take several books to list all possible items, raw materials, building times, and skills – so this *must* be left up to the GM.

Loot, and Disposing of It

Many adventures are overt quests for treasure. Many aren't. Nevertheless, it is customary to let the heroes find something of value if they successfully complete an adventure. If nothing else, this lets them buy their supplies for the next adventure . . .

The classic fantasy adventure sends successful adventurers home with chests of gold and jewels. Very convenient! If you are writing a more realistic adventure, invent more interesting forms of treasure.

Let's say the party was hired to guard a caravan. They drove off the bandits that attacked the caravan, tracked them to their lair, wiped them out, and took their loot. Now, assuming the heroes have enough pack animals, it will be a simple matter to take the goods into town. Locate a merchant (using Area Knowledge – or Streetwise, if necessary). Make the best sales approach possible. The GM makes a reaction roll for the merchant. If he's interested in the goods, he makes an offer, which the players can accept or reject. Simple.

But it doesn't have to be that simple. Identifying treasure, and turning it into cash, can be a major part of the challenge! Some possibilities:

- The treasure is not portable. How will they get it home?
- The treasure is not recognizable as such without a skill roll – or looks like treasure to the unskilled observer, but is really junk!
- The treasure is valuable only to certain collectors or specialists. Getting it to a buyer might be an adventure in itself.
- The treasure is illegal or immoral, making it *risky* to trade.
- The treasure is perishable or dangerous, and requires special handling.
- Somebody else is hunting the treasure.
- The treasure is not goods, but *information* – a clue to the *real* loot, or a major plot hook toward the overall campaign goal.

In spite of your best planning, the players will occasionally find "loot" you had not anticipated. For instance, the slavers had the PCs trapped in iron cages . . . and when they escape, they

Gold and Silver

A traditional assumption of fantasy games (and many fantasy novels) is that gold and silver are heavy, and inconvenient to carry around for purchases. If you are the GM, this is true only if you want it to be true.

Historically, gold and silver were *very* valuable – and many goods were cheap. For an authentic medieval English (14th-century) economy, treat the $ as a "farthing": a copper coin about an inch across. A silver penny is worth $4 and is less than half an inch across; 250 such coins ($1,000) weigh one pound. If silver and gold trade at 20 to 1 (a reasonable ratio for much of history), a pound of gold is worth $20,000! A man could carry a king's ransom in his backpack.

On the other hand, a GM who wants wealth to be less portable might assume that the $ is a one-ounce silver coin, like a silver dollar. A one-ounce gold piece would then be worth $20. At that rate, 12 coins (troy weight) would weigh a pound; a pound of gold would be worth only $240. In such a world, precious gems are the only way to carry a large amount of wealth in a small package, and caravans loaded with gold might actually exist!

take the cages with them to sell for scrap. This is when you improvise. If you have no clear idea what the goods are worth, just make the story interesting. If you want the party to have money, then there's a demand for scrap iron in the next village. If not, nobody is interested. Simple.

Controlling Inflation

The GM should be careful not to let the PCs get too rich too soon. Rather than drive up prices, make *expensive* things (ships, noble titles, etc.) available, and give the heroes opportunities to invest in interesting long-term, high-risk ventures (e.g., bankrolling an inventor). Alternatively, arrange an occasional catastrophe to keep the PCs broke – or simply an adventure where no amount of money can replace brains.

In a high-tech world, there is no limit to the advantages you can buy with money. In a low-tech environment, once you have one good suit of armor, one fine weapon, and a couple of fine horses, there's not much else you can buy to enhance personal prowess. But you can hire an army . . .

Finally, be realistic about the value of loot. Armor, combat vehicles, and similar military materials are likely to be damaged after a fight – the PCs will be lucky to get 1/3 "retail value" if they drag this kind of hardware into town. (A *very* realistic GM will assess the PCs maintenance costs for repairing their *own* vehicles, weapons, armor, etc., too.)

Wealth and Status

Wealth (p. 25) and Status (p. 28) are separate but related traits. It is up to the GM to determine the details of the relationship.

In many game worlds, those with high social standing must buy up Wealth by one level past Average per Status level above 0, but can have high Wealth without high Status. In others, wealthy characters must buy an additional level of Status per level of Wealth past Average, but can purchase high Status without Wealth. The GM might even enforce *both* requirements and rigidly associate Status levels with Wealth levels – but this excludes many good character concepts. In all game worlds, it is common for those with *negative* Status to have Wealth one level below Average per Status level below 0.

To keep things fun, the GM should forbid high Status to poor characters or high Wealth to low-Status ones only if the setting absolutely *demands* it!

Cost of Living and Status

Each PC must pay the monthly "cost of living" for his Status or accept the consequences, as explained under *Cost of Living* (p. 265). Assume the PCs are Status 0 – or "middle class" – unless they buy their Status up or down.

To calculate how much money a character has for discretionary use each month, subtract his cost of living and that of noncontributing dependents from his monthly pay (see *Jobs*, below). In a campaign that does not use jobs, either subtract cost of living from the PCs' adventuring income or ignore this rule entirely!

Jobs

The GM determines what jobs are available in the game world, either on his own or by encouraging the players to come up with ideas for jobs suited to their characters' talents. In a historical campaign, the GM can reduce his workload by inviting the players to research and submit reliable information about the jobs they want!

Regardless of whether the GM or the players come up with the job's *description*, the GM assigns its *prerequisites*, *job roll*, *monthly pay*, and *wealth level*. The next few sections explain these things.

Description

This includes the job's title, and tells exactly what kind of work the job entails. The GM should give hours, risks, guild or union affiliations, etc., and point to the occupational template (see *Character Templates*, p. 258) for the job, if any.

Prerequisites

A job's *prerequisites* are the skills – if any – needed to do the job. Most jobs specify a minimum required level in each prerequisite skill. This might be absolute ("Administration at 12+") or relative ("Administration at IQ+2 or better"); the former is likely if the employer requires testing, the latter if the employer awards jobs on the basis of experience. In either case, candidates must have at least one point in the skill – default skill will not suffice! Some jobs also require specific advantages, or forbid certain disadvantages.

Job Roll

At the end of every month in which a character works, he must roll against one of the prerequisite skills for his job. This is called a *job roll*.

For jobs with multiple prerequisite skills, the GM should specify whether the worker uses his *best* prerequisite, his *worst* prerequisite, or one specific skill at all times. This roll might be at a bonus for an easy job, at a penalty for a difficult one.

For jobs without prerequisites, the GM should specify either a flat success roll (e.g., "All characters roll vs. 12.") or an attribute roll (e.g., "Roll ST.").

Most jobs offer a fixed wage or salary. On anything but a critical success or critical failure, the worker collects the *monthly pay* for the job (see below). On a critical success, he gets a 10% permanent raise.

Other occupations are more variable; for instance, freelance jobs and work on commission. For these jobs, the worker earns the monthly pay if he makes his job roll *exactly*. For greater success, increase that month's income by 10% times the margin of success; a critical success *triples* the month's income! On a failure, decrease that month's income by 10% times the margin of failure.

For any kind of job, a critical failure is always *bad*. At best, the worker will earn no pay for the month. He might also face demotion (at least a 10% reduction in monthly pay), lost savings (due to damages, fines, etc.), loss of job, on-the-job injury (due to an accident – or possibly a fight, if the job is a violent one), or arrest (especially at a criminal "job"). The GM should be creative!

Monthly Pay

Each month on the job, a worker earns his *monthly pay* – modified for his job roll, as described above. Time spent adventuring is usually not "on

the job," although the GM might wish to make exceptions for vacations, work done while traveling, etc.

The GM may set any pay he likes. The first table at right suggests a fair monthly pay for someone of Average wealth working at a "typical" job for his tech level.

Actual pay at each TL varies within a range bracketed by the typical monthly pay of the previous TL and that of the next TL; e.g., from $2,100 to $3,600 at TL8. Unless the economy is under some sort of stress or outside control, jobs near the high end of this range will be *difficult* (significant penalty to the job roll), *dangerous* (severe consequences on a critically failed job roll), or *highly trained* (many or high-level skill prerequisites).

Campaign Tech Level	*Typical Monthly Pay*	*Campaign Tech Level*	*Typical Monthly Pay*
0	$625	7	$2,100
1	$650	8	$2,600
2	$675	9	$3,600
3	$700	10	$5,600
4	$800	11	$8,100
5	$1,100	12	$10,600
6	$1,600		

Job's Wealth Level	*Monthly Pay Multiplier*	*Typical Status Level*
Poor	1/5	-2
Struggling	1/2	-1
Average	1	0
Comfortable	2	1
Wealthy	5	2
Very Wealthy	20	3
Filthy Rich	100	4
Multimillionaire 1	1,000	5
Multimillionaire 2	10,000	6
Multimillionaire 3	100,000	7
Multimillionaire 4	1,000,000	8

Wealth Level

The monthly pay numbers above are for workers of *Average* wealth. Assume that those of lower Wealth normally have jobs that pay less than this, while those of higher Wealth usually have jobs that pay more. Multiply the average pay and pay range for jobs suitable to a given wealth level by the starting wealth multiplier for that wealth level (see *Wealth*, p. 25).

Example: "Comfortable" wealth doubles starting wealth; therefore, Comfortable jobs pay twice as much. At TL8, this means that monthly income for those of Comfortable wealth is typically $5,200, but can range from $4,200 to $7,200.

The more a job pays, the higher the Status it can support. The second table at right sums this up.

If a PC lands a job associated with a higher wealth level than his own (which isn't easy – see *Finding a Job*, p. 518), the GM should let him earn the usual pay for that job. Most employers cannot get away with paying poorer workers less! However, if the PC's savings reach the starting wealth of the next-highest wealth level, he *must* pay the points to buy up his Wealth (see *Adding and Improving Social Traits*, p. 291). This continues until his personal wealth level equals that of his job.

Likewise, a wealthy PC may work at a job below his wealth level. He gets the usual pay for that job; he does *not* receive extra pay simply because he is wealthy! Such people often have Independent Income (p. 26) as well as a job in order to meet the cost of living for their (usually high) Status.

HIRELINGS

A "hireling" is any NPC in the adventurers' employ. The GM controls hirelings; the players can give any orders they like, but the GM decides how they are followed!

A hireling provides an excellent way to add muscle or special talents to a party without introducing more PCs. A party may have any number of hirelings, but the GM should keep the number of important "personality" hirelings down to two or three at a time. The GM can manage any number of generic swordsmen – but keeping up with an important hireling, whose personality and character sheet are as detailed as any PC's, is challenging.

Creating Hirelings

The GM sets the hireling's abilities. If there is an occupational template (see *Character Templates*, p. 258) for the hireling's profession, the GM can save time by copying statistics from that template. (If the template is for heroic PCs as opposed to average members of a profession, apply a -1 or -2 to all attributes and skills.)

The GM keeps the hireling's record sheet; the players may not see it. Unimportant hirelings need only a card or a note; important hirelings require a full character sheet.

Finding a Hireling

The PCs can't pull a hireling out of thin air. When they need to employ someone, they must search for a suitable person – just as in real life. They might not always get what they want.

The recruiter may attempt an IQ roll once per week to find a hireling of the desired type. The GM may permit him to substitute an appropriate skill for IQ: Administration (for formal, corporate-style hiring), Current Affairs (if seeking prominent "world experts"), Propaganda (for aggressive recruiting), Streetwise (if seeking criminals), etc. The party may attempt only one roll per hireling per week. Modify this roll as follows:

City Size: The bigger the town or city, the better the odds:

Population	*Modifier*
Less than 100	-3
100-999	-2
1,000-4,999	-1
5,000-9,999	0
10,000-49,999	+1
50,000-99,999	+2
100,000 or more	+3

Finding a Job

A PC seeking a job that requires an employer (that is, one at which he is not self-employed) may roll against IQ once per week to see if he finds work. The Laziness disadvantage gives -5 here! Apply the following modifiers:

City Size: The more people in the town or city, the better his chances (see table).

Population	*Modifier*
Less than 100	-3
100-999	-2
1,000-4,999	-1
5,000-9,999	0
10,000-49,999	+1
50,000-99,999	+2
100,000 or more	+3

Overqualification: If his skill exceeds the minimum level required by the job, he is more likely to find work: +1 if his skill is one level higher, +2 if two or more levels higher. The GM may give further bonuses if the job hunter has additional abilities that would logically help him do the job (or impress a potential employer).

Advertising: He can advertise that he is *looking* for work: +1 if his budget is 5% the monthly pay of the job sought, +2 if 50%, +3 if 500%, and so on. This money might be for bribes, "business clothing" for interviews, handbills, placement fees, etc., depending on the job and the setting.

Scarcity: Higher-paying jobs are harder to find. Subtract *twice* the typical Status level of the job sought from the roll; e.g., a "Filthy Rich" job typically accompanies Status 4, so it would give -8. Negative Status gives a bonus! For instance, roll at +2 to find a "Struggling" job (Status -1).

Multiple Jobs: A seeker who is qualified for more than one job can look for more than one job at a time, at a cumulative -1 to *all* rolls per job after the first.

Advertising: +1 if the advertising budget is 50% the monthly pay of the job, +2 if 500%, +3 if 5,000%, and so on. This money covers the expense of business lunches, handbills, newspaper ads, "recruiting parties," etc.

Money Offered: +1 if the pay is 20% higher than normal for the job, +2 if 50% higher, and +3 if 100% higher or more.

Risk: -2 to find a hireling for a job that involves obvious risk of combat, unless seeking a guard, mercenary, or other "combatant" hireling. The GM decides which potential hirelings are "combatant."

Legality: -5 to find a hireling for an illegal job – and any critical failure on the roll results in legal complications. The GM may waive this -5 when the employer uses Streetwise skill for the search, but the critical failure result is the same!

On a success, the PCs find a candidate. The GM describes the potential hireling to the players, and can even take his part for an "interview." The players must then decide whether they actually want to hire that person. If they decide not to, they must start their search over again.

A failure might mean that a hireling simply is not available – especially in a small town. It is up to the GM whether to allow repeated attempts.

Of course, the GM is free to "load" the roll, if he feels the PCs absolutely should have (or should not have) a hireling of a specific type! For instance, if an adventure calls for a particular hireling, the GM can ensure that the hireling *will* appear. He may do this overtly (the NPC approaches the party in a bar and asks for a job) or covertly (the players say that they are looking for hirelings; the GM pretends to roll, but gives them a preplanned NPC).

Loyalty of Hirelings

A hireling might not always act in his employer's best interests. The GM should use the hireling's "loyalty rating" as a guide. Unless this is preset for a reason, generate it by making a reaction roll (see *Reaction Rolls*, p. 494) for "loyalty" when the PCs first encounter the hireling. The GM can even use this during the initial meeting or interview, to see whether the hireling lies about himself. Note that a very loyal potential hireling might exaggerate his abilities out of desire to join the party!

SLAVES

In a game world where slavery is legal, the PCs may buy slaves as either workers or an investment – or they might be enslaved themselves! Anywhere slavery is legal, slaves make up a large part of the job market, and there is a 50% chance that any hireling found is actually a slave.

The price of a slave is generally equal to the amount the slave could earn in five years, if free and working at the typical pay rate for the *best* job he qualifies for. The GM may adjust this price for any number of reasons: extra skills, good or bad attitude toward slavery, physical appearance, health, etc. Slave traders rarely give a real bargain!

Loyalty of Slaves

Determine a slave's loyalty per *Loyalty of Hirelings* (above). However, slaves are less predictable than hirelings. After determining the slave's initial loyalty, roll 2d on the following table to determine a loyalty modifier:

2-7 – No modifier.

8 – He was enslaved for some crime, and resents it: -1 to loyalty.

9 – As above, but -2 to loyalty.

10 – His previous master was very cruel. If he is treated with kindness during the first week, apply +2 to loyalty; otherwise, no change.

11 – He has a fanatic hatred of slavery. If treated well, he may like his masters as people, but will still escape as soon as possible. If treated badly (or even "average" for a slave), his loyalty drops to 6.

12 – He has the Slave Mentality disadvantage (p. 154), and considers

Loyalty Checks

A "loyalty check" is a roll *made by the GM*, usually in secret, to see how a hireling behaves in a given situation. Check loyalty whenever a hireling is in mortal danger, or when violating his trust seems to be the wise, profitable, or easy thing to do.

To make a loyalty check, the GM rolls 3d against the hireling's loyalty rating (see *Loyalty of Hirelings*). On a roll equal to or less than his loyalty, the hireling "passed" the check and behaved loyally. A hireling with loyalty 20+ passes all checks automatically.

If the GM rolls *over* the hireling's loyalty, the hireling "failed" the check and served his own interests. This does *not* always mean total betrayal – it depends on the situation. It just means he let his employers down. He may repent and beg forgiveness; this is up to the whim (and dramatic ability) of the GM. If the PCs forgive a hireling with a loyalty of 16+, with or without punishment, his base loyalty goes up by 1.

The GM is free to modify a loyalty check for special circumstances. A huge bribe from a foe, for instance, would give most hirelings a penalty to their loyalty check.

It is up to the GM to decide when a check is necessary. This depends on the hireling. For a veteran, "mortal danger" does not mean "any combat." He would not fear an orc – or even a whole pack of orcs. But he might have to check loyalty if asked to battle a dragon!

Changes in Loyalty

Several factors can change loyalty, temporarily or permanently:

Higher Pay: +1 to loyalty per 10% by which the hireling's pay exceeds the norm for his job, whether in the form of a "salary" or a share in loot. This bonus persists for a month after the extra pay ceases. (This factor also affects slaves, if they are allowed their own possessions.)

Great Danger: Whenever a noncombatant hireling is exposed to a combat situation, check loyalty. Failure gives -1 to loyalty for a week. Repetitions might have a permanent effect.

Rescue: If the PCs risk their lives (or the mission) to rescue the hireling, make a reaction roll at +3 or more, depending on the nature of the rescue. A "Good" or better reaction means the hireling is grateful. His loyalty becomes the result of the roll or his original loyalty – whichever is *higher*. If one of the PCs was seriously injured or killed in the rescue, the GM should consider adding a permanent loyalty bonus *on top* of this!

Employers' Competence: Loyalty of a "continuing" hireling might change by one point at the end of an adventure, based on the party's performance. A botched mission reduces loyalty; great success increases it. This modifier is permanent.

Length of Service: After each year, make a loyalty check. A success gives a permanent +1 to loyalty. Thus, the best hirelings become better . . . but poor ones are unlikely to improve much.

himself truly the property of his owner. His loyalty is automatically 20. You need never check loyalty; he will not demur; even if given orders that condemn him to death.

Make loyalty checks for slaves as for any other hirelings. Modify loyalty by +1 or +2 if they are in a situation where they have nowhere to run!

Legal Complications

When slave-holding PCs enter an area where slavery is illegal, they must either dispose of their slaves or pass them off as free servants. Possible anti-slavery attitudes include: legal to own slaves, but not to buy or sell them locally; legal for non-citizens to own slaves while passing through, but illegal for permanent residents to own them; or illegal to own slaves at all.

A creative GM may impose other laws and customs regarding slavery. For instance, it might be legal to enslave members of some social groups or races, but not others. There might be ways for a slave to earn his freedom – some societies might even permit slaves to own property and *buy* their freedom.

Other Planes of Existence

A campaign can extend across several game worlds instead of being tied to just one. This makes it possible to explore themes that do not work well in a single-world campaign. For instance, the PCs might visit several radically different settings in the course of a single adventure, and the world – at least one world – could actually *end* without the campaign coming to an abrupt halt.

Multi-world campaigns greatly increase the players' options. They get to experience several settings and genres *while playing the same characters*. And if they grow tired of the current world, the GM can simply move the action to a new one. This can give a flagging campaign a new lease on life.

However, a multi-world campaign increases the GM's workload. Instead of having to design *one* world in detail, he has to create *many*. He must also address the question of travel between worlds, which can be as much work as designing a world!

Travel Between Game Worlds

One of the chief purposes of the ***GURPS*** design is to let players explore multiple game worlds without learning a whole new set of rules each time. A player can participate in several different campaigns, each in a different place or time, and play a different character in each campaign. Each character stays in his own world. But the *characters* can also move from one game world to another. This can happen in three ways:

1. A player can develop a character in one game world and then bring that character into another game world. An example might be a medieval wizard, hurled hundreds of years into the future by a magic spell, participating in a WWII adventure.

2. An entire campaign can move from one game world to another. For example, suppose the party is the crew of an interstellar trading ship. They crash-land on a primitive planet. Until they can make their way to the spaceport, on the other side of the world, they are effectively living in the 12th century!

3. The campaign can include multiple game worlds by design, along with the means to travel between them. See *Other Planes of Existence*.

Differences in Worlds

As a rule, the more different two worlds are, the harder it should be for PCs to move between them deliberately. Significant differences would include:

- Magical world vs. technological world.
- Very low-tech world vs. very high-tech world.
- Largely human or all-human world vs. world with many races.
- War-wracked, plague-ridden world vs. peaceful, decadent world.
- Fantasy world vs. strictly historical, "real" world.

Certainly, any or all of these differences could exist on a single planet! But they would not be found next door to each other.

Likewise, the GM should make travel between incompatible worlds *difficult*. This achieves an effect that is very rare in gaming; it improves both realism and playability. Players will appreciate the fact that "rule changes" come only with warning.

Possible obstacles to interworld travel include all the standard geographical barriers: high mountain ranges, wide oceans, extensive deserts or badlands, swampy jungles, etc. Magical barriers are also a possibility, as are intervening hostile lands. GMs may also have their different worlds located *literally* on different worlds. The problems of interplanetary travel at low TLs are not to be taken lightly, but powerful magic can do almost anything. Of course, such powerful magic is not likely to be within the PCs' control . . .

Alternate Earths

"Alternate Earths" are worlds that are like Earth . . . but different in some way. The differences might be tiny (Kennedy's picture is on the dime), huge (Kennedy is now King of the Western Hemisphere), or unbelievable (the Earth is ruled by intelligent lizards who have the same cultures, languages, and politics as us).

A "reasonable" alternate history is sometimes called a *parallel world*. Inventing parallel worlds is a great intellectual game. One way to approach it is to pick a historical event and ask, "What if this were different?" What if Lincoln had survived Booth's attack? What if Chamberlain had stood up to Hitler? What if Eric the Red had died in a brawl at age 16?

As the GM, you can invent any sort of alternate Earth. You can assume as many basic points of difference as you like. But it is interesting to see what logical consequences you can develop from *one* change. Pick any historical event – great or small – and ask yourself, "What if this had gone *differently*?"

For an entire campaign setting built around alternate Earths, with many examples, see Chapter 20.

Virtual Realities

A *virtual reality* (or "virtuality") is basically a synthetic plane of existence generated by high technology. Much of the advice given here for cross-world campaigns is equally valid in high-tech campaigns that feature an immersive "cyberspace" where the PCs can have adventures and interact with the real world indirectly.

The GM needs to be prepared to deal with another potential problem. Many players see little point in working hard to achieve goals in one world if they believe the fruits of their labors will be lost when the campaign moves to the next. This can lead to a game-disrupting sense of detachment. To prevent this, the GM must strengthen campaign continuity by creating storylines that span worlds . . . which adds even more work.

Any GM should know the limits of his time and ability, and consult with his players ahead of time. This is even truer for GMs who wish to run cross-world campaigns.

Types of Realities

Many different types of game worlds can exist in a cross-world campaign. These are often called "planes of existence" (or "planes"), "dimensions," "realities," "realms," or "universes" to distinguish them from distant lands or planets in the same physical universe, which are sometimes called "game worlds" as well.

Physical Realities

These are planes of existence that travelers can actually visit – either in body or in spirit – much as they would visit another country or planet. The

defining feature of such realms is that visitors possess a physical body during their stay. This might be their normal body . . . or it might be a "spirit body" that is corporeal *only within that realm.*

The most common physical reality is the *alternate world* (also known as an "alternate history" or "alternate timeline"). This is almost the same as the PCs' home world, but in this world, history diverged at some pivotal event, creating a different reality. (See *Alternate Earths*, p. 520.)

Almost as common is the *mirror world.* Mirror worlds look just like the PCs' home world, but the resemblance is cosmetic. No reasonable sequence of historical shifts could explain the differences! A good example is the world of faerie: it looks a lot like our world, but it is actually a magical realm ruled by powerful spirits. Another common example is the "evil parallel." Many things about the world are similar, but personalities and even governments are "opposite": republics become dictatorships, saints become fiends, and so on.

Some physical realities might be even more alien. At best, they might be as different as alien planets within our universe. At worst, the laws of physics might be different, or suspended. Humans might be unable to survive there!

Interpenetrating Planes

Two or more planes of existence might interpenetrate, with each location in one world corresponding to a similar location in all the others. Such realms are generally *distinct* from one another, and invisible to each other's inhabitants – although some gifted people, such as mediums and seers, might be able to perceive more than one reality at a time. Perhaps even *ordinary* people can occasionally see the inhabitants of the other realms, but regard them as ghosts.

This is a common way to look at "dream," "phantom," and "spirit" realms in fiction. Often, travelers to such planes do not *go* anywhere; they just shift their perceptions.

Phases

A *phase* is not a destination in itself, but an invisible sub-dimension of one specific reality. Unlike an interpenetrating plane, it is not distinct from its partner reality; it merely represents a physical or supernatural "wavelength" different from the standard one. The main use of such realms in fiction is to let travelers rapidly bridge the gap between two locations within the same physical reality.

An example of a phase is the ethereal state that those with Insubstantiality (p. 62) assume in order to walk through physical obstacles. Another example, common in science fiction, is *hyperspace:* the "space" into which stardrives shift starships for faster-than-light travel.

Voids

A *void* surrounds physical realities in much the same way that outer space surrounds stars and planets. A void differs from an interpenetrating plane in that it touches realities *without* overlapping them. It differs from a phase in that it is not a sub-dimension of just one reality, but a "super-dimension" that engulfs and connects *all* realities.

Like the ocean and outer space, the void in fiction is a dramatic device that serves one purpose above all others: it mediates travel – in this case, *interplanar* travel. For instance, popular interpretations of the "astral" plane suggest that it is a void that travelers must pass through when using magic or psionics to journey between realities.

Planar Cosmology

The GM must determine what planes of existence are present – in number and in type – and *how they interact.* The possibilities are endless! Here are some popular arrangements.

Worlds Within Worlds

In this model, realities are nested one within the next – like the layers of an onion. Alternate worlds or interpenetrating planes might exist on a more-or-less equal footing at some levels of this hierarchy, but the truly important events in the campaign always involve movement up or down the hierarchy, not across any one level.

This structure lets the GM hide secrets within secrets, and offers a classic explanation for many supernatural powers and beings: "They come from a higher plane." As a result, it is well suited to multiple-reality campaigns with a strong supernatural flavor.

Example: A fantasy campaign takes place in a fairly ordinary physical reality – a world with mountains, oceans, stars in the sky, etc. "Inside" this world, there is a phase called the Ethereal Plane; this explains magical effects such as teleportation and walking through walls. Surrounding the physical world is an inner void: the Spirit World, realm of ghosts. The Spirit World does *not* overlap the physical world; instead, it is a layer that dead souls (and powerful wizards!) must traverse on their way to an outer void known as the Astral Plane. The Astral Plane, in turn, allows travel to the alien "physical" realities of demons, gods, and other higher powers.

Parallel Worlds

This cosmology features multiple physical realities standing shoulder to shoulder. Most are true alternate realities, but a few might be mirror worlds. Some might even be "pressed so close together" that they interpenetrate. The defining feature is that there are no planes of existence within, between, or surrounding these worlds. All realities are on an equal footing, and travel involves a direct shift as opposed to a journey through some kind of intervening dimension.

This structure eliminates mystical journeys, speeds the act of travel, and provides a rational explanation for weird events ("ghosts" are just inhabitants of unusually close realities, "demons" are merely ugly interplanar voyagers, etc.). These features make it desirable for science-fiction campaigns centered on cross-world travel and trade.

This framework is conceptually simple, but the GM can make it as convoluted as he wishes. Travelers might only be able to visit "adjacent" worlds . . . and a satisfactory definition of "adjacent" could defy scientists' best efforts. It might take multiple hops to travel to some worlds, and while worlds might form a ring or other simple pattern, the GM could instead decree that they exhibit a brain-busting geometry that humans and their best computers simply cannot map. Use your imagination!

Mixing It Up

The GM is free to add any number of twists. For instance:

- Start with a hierarchy of realities, as explained under *Worlds Within Worlds*, but place parallel worlds on some tiers of the hierarchy.
- Start with worlds that abut on worlds, as described for *Parallel Worlds*, but make certain "worlds" fully realized hierarchies of dimensions instead of simple physical realities.
- Add any number of distinct phases to some or all of the worlds in the setting (e.g., each physical reality might have its own hyperspace *and* an ethereal plane).

INTERPLANAR TRAVEL

Many stories that feature multiple worlds assume that travel between those worlds is a one-way trip: unlucky (or lucky!) travelers somehow fall through the gap between worlds. But *regular* travel between worlds is an interesting possibility, as it lets explorers study, exploit, and perhaps even conquer entire worlds. In this case, the most important question to answer is, "How do the adventurers get there?"

Instantaneous vs. Time-Consuming Travel

Travel between worlds could be a "Poof! You're there!" phenomenon: the heroes just have to cast a spell, push a button, walk under a hill, etc. Or it might be a slow process, comparable to sea or space travel. Both approaches have pros and cons.

Instantaneous travel – like the Jumper advantage (p. 64) and Plane Shift spell (p. 248) – allows furious, universe-spanning action, with the heroes and their foes battling from one reality to the next. However, some players will try to *avoid* enemies (and Debt, Duties, etc.) this way, sapping drama instead of adding to it. This kind of travel also encourages brisk interplanar trade, which is great fun . . . until it destroys the campaign's economy. In general, if interplanar travel is to be quick, the GM should make the means of travel hard to come by, introduce reasonable risks (e.g., nasty surprises on failed Plane Shift rolls), limit what travelers can carry, and make it clear that some alternate worlds are *dangerous*.

If interplanar travel takes time, the GM must determine how much time passes, and at what rate relative to time in the PCs' home world. The primary advantage of time-consuming travel is that the trip itself is an adventure. The downside is that the campaign can get bogged down in travel. Many players grow bored if their characters must make long trips to achieve their goals. If the GM chooses this option, he should be prepared to build an adventure around each trip, or let the PCs spend their time on gainful long-term projects such as study, invention, and magical enchantment.

The most important question to answer is, "How do the adventurers get there?"

Physical Travel vs. Projection

Interplanar travelers sometimes visit other planes of existence in person, but this is not the only option. Visitors might instead journey to other realities in mind or in spirit.

Physical travel (teleporting between worlds, moving there in some kind of vehicle, etc.) lets the GM use classic "hooks" like money and physical danger to steer the campaign. It is also involves less bookkeeping: the PCs have the same abilities and equipment as in their home world. However, physical travel lets the PCs vanish bodily, perhaps along with their possessions, making it possible to escape the consequences of their actions. It also opens the door to commodities trading, which can have unwelcome economic effects. The GM should take care to create adversaries who can follow the PCs wherever they go, and should consider imposing strict limits on the physical goods that can accompany travelers (e.g., "You arrive naked.").

Projection involves traveling to other planes as a mind or spirit while the body remains behind. This solves many of the problems GMs have with cross-world campaigns. What belongs in each world *stays* in that world. The only thing that moves between worlds is information – and the GM can easily control that. There are two disadvantages. First, the GM must keep records for both the PCs' physical selves and their projections. (The GM *could* just say that the projection is the same as the original, but he would be discarding an interesting dramatic tool.) Second, players might feel that other realms aren't "real," and behave accordingly. The solution here is to let them . . . and then have the consequences of their actions show up in their "real" world!

Modes of Travel

Finally, the GM must decide on the actual mechanism used for interplanar travel. Options include:

Artifacts: Interplanar travel relies on magical, psionic, superscience, or weird science gadgetry. There are endless possibilities, from hyperdrives and parachronic conveyors to magic mirrors and stone circles. Be sure to specify whether the artifact goes with the traveler to the other side, or merely sends him there – and whether it's good for the return trip!

Right Time, Right Place: Anyone can reach other planes, but only under certain conditions: while dreaming, on certain days of the year ("When the stars are right!"), at specific places (such as the "hollow hills" of faerie myth, or a wormhole in deep space), and so on – and possibly more than one of the above.

Special Powers: Travelers need advantages (e.g., Jumper), magic spells (e.g., Plane Shift), or similar powers to move between worlds. To keep PCs with such abilities from going off and leaving the rest behind, the GM should either require *all* PCs to have such abilities or make sure that the person in charge of transportation has the power to convey his companions (and that the *player* is responsible enough to do so).

Chapter Twenty

Infinite Worlds

It's 2027. A future Earth, known as Homeline, is exploring hundreds of alternate Earths. It's also fighting an undeclared war with another world-jumping civilization . . . but that may be the least of its worries!

Welcome to Infinite Worlds.

Infinite Worlds is an example of a game setting. But it's more than that. It's also a framework that lets players create almost any kind of character, and that makes it easy for GMs to run cross-genre adventures.

The Infinite Worlds multiverse is *completely optional.* GMs who don't want to permit extradimensional excursions are free to prohibit them. Not everyone is comfortable with blaster-toting wizards fighting Nazi supersoldiers . . .

Although that doesn't *have* to be the way it works. Many worlds have yet to be discovered; many others are isolated. The PCs may start out completely unaware of the existence of other dimensions, but at some point in the campaign (possibly after months or even years of play), they discover that their world is just one of many. They find a way to travel to an alternate world, or perhaps they discover an extradimensional plot and end up recruited by the Infinity Patrol . . .

And everything changes.

The Campaign

Infinite worlds, infinite wealth.

In the year 1995, Dr. Paul Van Zandt, a physics professor, built the first working parachronic projector and used it to visit the timeline that became known as Earth-Beta, or simply Beta. He concealed his observations and continued his experiments. Six months later, following a mysterious fire that destroyed his Dartmouth laboratory, he resigned from teaching to set up a "consulting" firm.

In fact, Van Zandt had simply freed himself to continue his experiments without the supervision of academia or of the Department of Defense, which had supplied grant money for his original project. Over the next few years, he refined his theories, contacted 23 more universes, and personally visited six alternate Earths. He also secretly gathered a number of trusted aides, the nucleus of the group that would become Infinity Unlimited. And he founded White Star Trading, an interworld trading corporation, to finance further experiments.

In February 1998, Van Zandt made headlines by publishing his results – and by formally incorporating Infinity Unlimited, with subsidiaries including White Star Trading, Parachronic Laboratories, and Infinity Development. Furthermore, Van Zandt offered to license his designs to any government or corporation interested in crosstime travel.

Infinite Worlds Glossary

alternate: Any timeline except the original Earth. Also "alternate world."

anchor: An echo that does not experience a quantum shift when "history is changed."

banestorm: A natural phenomenon that moves matter between worlds.

Centrum: A rival civilization with the ability to travel between worlds. A "Centran" is a native or agent of Centrum.

conveyor: A self-propelled device for traveling between alternate worlds.

Coventry: An alternate world maintained by the Infinity Patrol as a prison for those – both Homeliners and outtimers – who Know Too Much.

echo: An alternate world which is – or appears to be – identical to ours, but at an earlier point in its history.

Eraser: A memory-affecting drug used by I-Cops and others to keep the secret of parachronic travel.

hell parallel: An alternate world which has suffered a natural or manmade disaster that rendered it unliveable. More loosely, any really bad world.

homeboy: Anybody from one's world of origin.

Homeline: The original Earth.

I-Cop: An agent of the Infinity Patrol's Intervention Service.

Infinity Patrol: The paramilitary arm of Infinity Unlimited.

Infinity Unlimited: A private organization that controls parachronic technology as a monopoly and governs access to alternate timelines.

Interworld: The Centran equivalent to the Infinity Patrol.

nexus portal: A "natural" path between alternate worlds.

outtime: Any world except the original Homeline.

outtimer: Anyone from an alternate world.

parachronics: The study of alternate worlds. More specifically, the study of why alternate worlds exist, and how travel between them is possible.

parachronozoid: A creature with a natural world-jumping ability, especially one that leaves a tunnel or portal behind (those that don't are rather hard to spot!).

parallel: An alternate world that differs from ours only in that its history has been different (some are *very* different). A "close parallel" is different as the result of one identifiable historical change.

projector: A device that can send a conveyor across quanta.

quantum: An "energy level" in 8-dimensional space that contains many alternate timelines. Quantum levels are often abbreviated; e.g., Q7 for Quantum 7.

reality quake: A parachronic upheaval that buries some or all of an alternate's history beneath a new one.

The Secret: The fact that technological cross-world travel is possible. Outtimers are not supposed to learn this, unless recruited by Infinity or Interworld.

timeline: Another term for an alternate world.

weird parallel: An alternate world that has many similarities to our own, but also has differences which make these similarities seem unbelievable (such as a world where intelligent reptiles speak English).

zero point: The term for a location that has been "zeroed" – properly calibrated – for a safe conveyor jump between two specific dimensions.

Naturally, governments were outraged. The U.S. Congress immediately moved to nationalize and classify all parachronic technology. The Japanese, European, Chinese, and Russian governments all called for its internationalization and suppression.

The next day, Van Zandt addressed a closed session of the U.N. Security Council. No one knows what he said, but the world powers accepted his proposal . . . within certain limits.

Infinity Unlimited was organized as a corporation whose formal partners were the permanent members of the U.N. Security Council. Van Zandt retained the position of first CEO, but Security Council-appointed bureaucrats also sat on its board. Infinity Unlimited's charter was rewritten to keep control of the basic technology firmly in its hands.

Van Zandt won a key victory – almost unnoticed at the time – when he resolved a budget dispute by suggesting that Infinity Unlimited would be largely self-funding: after an initial infusion of funds, it would be "forced" to rely on profits from licensing parachronic technology. Many politicians were pleased that Infinity would not drain resources from the United Nations' limited funds, and believed this would serve as a cap on the organization's power. Few in the United Nations or the world appreciated, then, the true potential of the parachronic secret:

Infinite worlds, infinite wealth.

Infinity also received its own security organization, which Van Zandt insisted on calling the "Infinity Patrol." Initially small, and limited to protecting Infinity's exploration teams and installations, its role and power would expand dramatically over time.

It took time for the economic and political ramifications to sink in, but the revelation that the Earth existed within a potentially infinite series of alternate worlds shook the foundations of human belief. Science, religion, even the nature of identity was called into question. But some people adapted quickly (others still haven't), and many saw opportunities.

Soon, groups of intrepid explorers were probing the dimensions, led by the vanguard of Infinity Unlimited's Penetration Service: elite "time scouts" that the corporation recruited for its perilous first-contact missions. Trade opened with dozens of worlds. Natural resources flowed in from the untouched ore deposits of uninhabited alternate Earths. On the world that came to be known as "Homeline," the environment began to recover as the worst industrial wastes – and the most polluting industries – were sent to dead worlds already blighted beyond anything mankind could do. Political intrigues continued . . . but the economy of Homeline was no longer one of desperate scarcity.

Van Zandt retired immediately. "I plan to devote the rest of my life to travel and study," he said, "and I'm never going to touch a soldering iron again."

For a little while, it looked like the start of a utopia, at least for Homeline. And then the worm peeked out of the multidimensional apple: Centrum, a different reality-spanning culture, with its own ideas of what a utopia should look like.

Suddenly, infinite worlds meant infinite trouble . . .

The Interworld Treaty

The Interworld Treaty was ratified by most (but not all) U.N. member states. It represented a compromise between the interests of large and small states – and between business interests (championed by an uneasy alliance between Van Zandt and the United States) and U.N. and government bureaucrats. The treaty created a framework that was intended to prevent a "neo-colonial" land rush, limit the ability of governments to deploy military forces crosstime, and permit (but regulate) the commercial exploitation of certain worlds, while preventing cross-cultural disasters.

The most significant effect of the treaty was to centralize most power in Infinity Unlimited, while ensuring that checks and balances existed that would give the U.N. Security Council – and to a lesser extent, the U.N. Secretary General – a degree of oversight.

It works . . . at least, some of the time.

Dark Infinity

How Van Zandt persuaded the world's great powers to accede (mostly) to his terms is one of the "big secrets" of the Infinite Worlds setting. Some possibilities:

Conspiracy: Infinity Unlimited is the instrument of a vast, ruthless conspiracy that has dominated the corridors of power for centuries. The rise of Infinity was the culmination of centuries of preparation. But who won? Do the *Illuminati* control it?

The Menace from Beyond Time: The world's leaders caved in because of *what Van Zandt showed them.* They've suppressed this to prevent panic, but perhaps the truth is leaking out. Whatever the truth may be, it's obviously vitally important that humans spread across many worlds. If the GM wants to have a "new power" invade the hyper-cosmos, there's plenty of scope.

Deus Ex Paramachina: What if Van Zandt is much more than he seems? Could he be a visitor from another, more advanced timeline? A retired, wandering god? A rogue technomancer, exiled from the Four Realms? It seems odd that Infinity and Centrum developed parachronics so close together. Maybe it was planned. If so, who was responsible? Was conflict the *goal*, or did something go wrong? Maybe Centrum was supposed to be Infinity's ally . . .

An Infinity of Worlds

Infinity knows of several hundred alternate worlds, spread through an 8-dimensional space in a pattern that seems *almost* predictable. These worlds are divided between a number of different "energy levels," or *quanta*. It is easy to reach a world on the same quantum, hard to travel outside your own quantum.

Homeline is on Quantum 5 (Q5). Infinity can reach Q4 and Q6 fairly easily, and Q3 and Q7 with difficulty. Q2 and below, and Q8 and above, are completely inaccessible.

Centrum is located on Q8. They can reach Q7 and Q9 fairly easily, and Q6 and Q10 with difficulty. They cannot reach Q5 and below, or Q11 and above, at all.

The known worlds are distributed as follows:

Quantum 2 and below: Unknown!
Quantum 3: 39 known Earths.
Quantum 4: 89 known Earths.
Quantum 5: 68 known Earths, including Homeline and Earth-Beta.
Quantum 6: 379 known Earths.
Quantum 7: 126 known Earths.
Quantum 8: 45 known Earths, including Centrum.
Quantum 9: 43 known Earths.
Quantum 10: 52 known Earths.
Quantum 11 and above: Unknown!

Parachronic scientists agree that there must be an *infinity* of alternate worlds, although most are out of reach. They disagree strongly on *how big* an infinity. Neither Homeline's nor Centrum's technology can reach anywhere near an infinite number of worlds. But they are out there . . . somewhere.

There are almost certainly undiscovered timelines in all the quanta that Infinity and Centrum *can* reach. After the first 10 years of exploration, new discoveries settled down to a steady rate of about 10 per year.

A common misconception about the "infinite worlds" is that all possibilities must exist on some alternate world, somewhere. Of course, this *might* be true; until Infinity can reach all possible alternates, it will be hard to disprove. But even if an infinity of worlds exist, there could be many possibilities that don't exist. As one physicist explained it: "You can have an infinite number of apples without having any oranges."

Classes of Alternate Worlds

Infinity Unlimited's Penetration Service classifies alternate worlds as follows.

Empty

There is no *intelligent* life on the world. It is free for exploitation. Typical uses include colonization (usually on the very best worlds), industry (mostly on bad worlds), hunting preserves (including *prehistoric* ones!), and research (the whole timeline is set aside as a zoo, science station, etc.). "Disaster worlds" are sometimes exploitable, if only as waste dumps; others are reserved for scientific use.

Echoes

The Earths in these timelines, all in Quantum 6, seem to be following the "known" course of history exactly, but aren't as far along in that history as Homeline. These worlds are open for cautious, unobtrusive research and tourism – but if "history is changed," they shift to other quanta and become parallels. Centrum has been trying to do just that, as part of a program intended to move them closer to their own home dimension.

Parallels

The Earths in these universes diverged from the "known" course of history at some point. Infinity and Centrum penetrate most such worlds as time and manpower allow. Trade, development, conquest, etc., are possible without risk of a quantum shift.

Homeline's general objective with these worlds is "benevolent guidance" away from war, especially war with weapons of mass destruction – and, somewhat less benevolently, to ensure that they do not discover parachronic travel. Many people disagree with this, but the only coherent alternative anybody has ever come up with is "hands off." And the idea of, for instance, keeping hands off a parallel-world Hitler, as he is giving the orders for Dachau, is a bit much.

Anchors

An anchor is similar to an echo, but highly stable. No one is quite sure why – some theories suggest that quantum anchors were the "original" alternate worlds from which others split off. The first anchors were discovered when major interventions in certain Quantum 6 worlds failed to cause shifts. The half-dozen that exist in Q6 are fierce battlegrounds . . . because here, with no risk of a shift occurring, the dimension war can be fought without any subtlety at all.

Close Parallels

A "close parallel" is a world very much like Homeline at some past period, but with small differences. Examples include:

Earth-Beta: The first parallel to be discovered. Like Homeline in 2004 in most ways, save for the lack of the crosstime secret.

Cherokee: In this world, now in its year 1930, the Cherokee Nation was stronger and more successful in surviving Anglo incursions. When oil was discovered in Oklahoma, the Cherokee kept the land and the wealth – Big Oil is now an Indian-dominated business.

Holly: A music-lover's dream world. Buddy Holly's plane didn't crash; in that world, it's now 1989, and Holly and Ritchie Valens are both still rocking. (The Big Bopper went into politics, and is now in Congress.) Several other stars lived less self-destructive lives, and are still around, although Elvis is still dead. And the Monkees became a super-group, with Stephen Stills as a member.

Which One Is Ours?

Homeline obviously isn't "our" present-day world – the defining

change was the discovery of parachronic technology in the 1990s. But Infinity has discovered a couple of early 21st-century Earths, just a couple of decades behind Homeline, which "split off" by not inventing parachronics. There are certainly a few more out there. Since these worlds have technology only a few years away from that of Homeline, the policy is covert observation. If the GM wishes, *any* of these close parallels could be "our world, our time" – or at least one that is very close to it.

Where Am I?

It is quite possible for a crosstime traveler to encounter an alternative version of himself (sometimes older or younger) living in one or more close parallels. This offers considerable opportunity for infiltration and subversion, but there's also the risk that sentiment or narcissism can lead to a traveler losing his objectivity and violating the rules to help out or otherwise influence his "other self."

Farther Parallels

These worlds are *considerably* more divergent than the close parallels. A few examples (Quantum 5, except where indicated):

Attila: The Mongol invasion of Europe crushed Western and Islamic civilization. Eurasia and northern Africa are forest and grassland, ruled by warring nomadic tribes. Some urban civilizations exist in Japan and South America.

Campbell: Science-fiction editor John W. Campbell died in a traffic accident early in his career. As a result, many science-fiction writers never developed their talents, and SF didn't advance much past space opera. Apparently, this reduced the number of students who became interested in science and engineering, because scientific development has stagnated here since the end of WWII.

Cornwallis: It is 1984. Revolution failed in America and never came to France. The world is TL6, dominated by conservative, aristocratic monarchies . . . but a new revolution is brewing.

Gernsback: A TL(6+2) "techno-utopia." Nikola Tesla married Anne Morgan, daughter of industrialist J.P. Morgan. Backed by Morgan's money, Tesla's genius changed the world with inventions such as broadcast power. The transistor and modern electronics are unknown . . . but atomic power, ray guns, dirigibles, and air cars are common. There was no World War II – the League of Nations reigns, guided by the World Science Council. Gernsback is a covert battleground between Centrum and Infinity, each side coveting Gernsback's wealth (much of its technology, unfortunately, fails to work in other realities). Quantum 7.

Johnson's Rome: The Roman Empire is still intact, and cheerfully decadent, in the year 1206 A.D. . . . and Johnson Crosstime Incorporated is developing it as a vacation spot. The corporation is using systematic bribery and infiltration to take over the Empire. It is already turning a huge profit. Part of the program involves outlawing public tortures and the most brutal forms of gladiatorial combat, but most of the decadent attractions of Rome will remain intact. (There are many other recreational timelines; this is just one of the most successful.)

Midgard: A TL4 world. The Vikings conquered Byzantium and used its wealth (and the secret of Greek fire) to overthrow Christendom. It is now 1412: the dawn of a Nordic age of discovery, colonization, and piracy in the Americas. Quantum 7.

Ming-3: In our world, China turned its back on exploration in the 15th century. In Ming-3, it did not. It is now 1859, and the Middle Kingdom (currently TL5) rules a global empire. Quantum 7.

The Thousand-Year Reich: The common science-fiction nightmare of a Nazi victory in World War II exists on five known alternates in Q4 and Q5. The U.N., aided by Infinity, recruits and infiltrates agents into two of the "earlier" ones (local dates 1952 and 1961), with the hope of overthrowing the Axis governments. Two more are further along: one in 1970, and one in 1988. These are under careful observation. The 1988 world is actually *less* advanced than the 1970 one, having suffered a Third World War in which the Nazis destroyed Japan with nuclear weapons and lost many major cities in Europe and North America. The fifth and most worrisome Nazi world is Reich-5; see p. 543 for details.

Weird Parallels

A "weird parallel" is an alternate that resembles Homeline in many ways, but with such strange differences that it is hard to believe the similarities. According to parachronic physicists, these similarities are the reason why otherwise-improbable worlds are sometimes found on accessible quantum levels.

United States of Lizardia: The first weird parallel discovered by Infinity, "United States of Lizardia" (USL for short) is Homeline's name. Its inhabitants call it Earth, and in some ways, it's similar to 21st-century Earth . . . except that mammals never became dominant. The natives are bipedal, dinosaur-descended lizard men. Their most powerful nation is analogous to the United States, and occupies North America. Infinity's Penetration Service is covertly studying it.

Orichalcum: The legendary Empire of Atlantis exists alongside Heroic-Age Greece and Egypt. An island nation in the Atlantic, its inhabitants are blessed by the gods and skilled in many crafts – including the working of the wonder-metal *orichalcum.* This is a TL1-2 alternate Earth in Quantum 6.

Dead Worlds

A "dead world" is an alternate Earth where life never developed. In some cases, Earth is at a different distance from the sun, or has no moon. Dead worlds do not have breathable atmospheres. Over a dozen of these worlds are known. They can be exploited for mineral wealth. They are also a convenient dumping ground for wastes too loathsome to keep on the same world with any human being.

Myth Parallels

Some parallel worlds correspond – far too closely for coincidence – to myths or fiction of Homeline. On such a world, Robin Hood might be a real, living person, waging guerrilla war on the Sheriff of Nottingham . . . or mermaids might be real and common. The most logical explanation is that some writers are psychics or world-jumpers.

Most "myth" parallels are closed to everyone but researchers . . . except for the Robin Hood world, called "Nottingham." Infinity researchers decided fairly quickly that Robin Hood had just been a lot more "real" than anyone thought. That world is now a popular Time Tours destination.

Hell Parallels

"Hell parallels" is a general term for the distressingly large number of alternate worlds that have suffered some great disaster or holocaust. Some are closed due to continuing hazards; others are open to exploitation or research.

Nuclear War

More than 20 post-apocalyptic Earths are known, including a dead, radioactive planet; a dying world in the grip of nuclear winter; and a world where humanity has been knocked back into the Stone Age. On a few worlds, nuclear radiation seems to work differently, accelerating the evolution of those who survived the war; all but two of these are off limits. And on one world, Ragnarok, Infinity scouts arrived 10 years after the war and discovered about 20,000 survivors huddled in fallout shelters and isolated bases. In a massive humanitarian effort, these survivors were ferried to an uninhabited timeline and helped to get back on their feet.

Disease

On at least four known alternates, disease has wiped out or nearly wiped out mankind. Three of these worlds were depopulated by deliberate biological warfare. They are strictly off limits, their coordinates a secret (and with good reason: in two cases, the first scout died despite all precautions). The fourth world, called Ariane, was hit by mutant influenza in its year 1915, with over 99.9% mortality. The virus is fully controllable with TL8 medicine, and Ariane is being colonized, looted, and developed, despite occasional skirmishes with tribes of TL2 survivors.

Cosmic Catastrophe

A very large meteorite struck Lucifer-1, in Quantum 7, about 100 years ago. Few traces of human civilization survived. Continuing volcanism has rendered its air nearly unbreathable in most areas.

Lucifer-3 is worse: the surface of Earth – and quite possibly every world within several hundred light years – was sterilized by radiation from a nearby supernova or gamma-ray burster. Homeliners are systematically looting the ruins of its TL7 human civilization for surviving art treasures and refined raw materials.

On Taft-3, massive solar flares caused sterility and a more gradual collapse of civilization.

Few traces of human civilization survived.

Ecological Disaster

Several worlds appear to have been devastated by over-industrialization and careless exploitation at the hands of their human or other inhabitants – some recently, others long ago. On Lenin-2, this led to global warming, flooding, heavy weather, and a massive famine; the few million survivors are now living at TL3.

Other Roads to Hell

Other worlds have suffered a wide variety of more unusual disasters:

Drexler: "Gray goo" nanomachines devoured civilization (and the first scout).

Leviathan: Humanity is fighting a losing battle against an undersea civilization.

Steel: Mankind developed sapient machines in the 2010s. These rose up and exterminated most of humanity. Now it is 2026: a war-ravaged, post-apocalyptic Earth is divided into several Zones, ruled by rival artificial intelligences . . . the Zone Minds. Only a few pockets of human resistance remain. Worse, the arms race between rival Zones is spurring rapid technological development (they're now TL9). Centrum and Infinity both fear that at least one AI is researching parachronic technology, and are (separately) debating whether to secretly assist the human resistance forces.

Worlds That Break the Rules

There are a few worlds where physical laws don't work in the way we think of as "normal." The best known of these are the universes where crosstime travel itself works differently. For instance, Homeline and Centrum are the only known timelines from which a projector can operate, while Coventry (p. 540) cannot be reached by any means except a projector.

There are others with differences that have nothing to do with parachronics; for instance, the universes where superscience allows physical "impossibilities," such as gravity control or faster-than-light travel. In some cases, it's biology that follows different rules, allowing tiny humans or colossal beasts to exist.

And a few worlds are even stranger. There are timelines where no technology higher than "simple mechanics" works. This is because it is impossible to produce an artificial electrical discharge there . . . even though *natural* discharges work just fine. This gives scientists fits: how do the physical laws "know" the difference? The best-known example, Rustic, was discovered by a world-jumper. If a conveyor had gone there instead, it wouldn't have been able to return.

There are even worlds where psychic powers exist (Infinity is wary of any world with mind readers, for obvious reasons). Likewise, there are a few where magic works . . . and not always the same way. Such worlds are closed except to elite researchers and agents, and their existence is secret. But there are the inevitable rumors; for instance, many people believe that some Patrol agents have learned magic in order to function more effectively when visiting magical universes.

Of late, scouts are discovering more and more "rule-breaking" worlds – perhaps because most of the "close" worlds have already been found. Or maybe something is

happening to reality. GMs are encouraged to dream up such worlds as needed! Two examples:

Merlin: A close parallel until 1945, when the first A-bomb test created a huge, permanent banestorm in New Mexico. This resulted in a zone of high mana in the American Southwest, and a region of normal mana encompassing much of North and Central America. Magical fallout triggered the appearance of "supernatural" creatures. The United States has become a technomagic superpower that frightens even Infinity. Merlin is a TL7-8 alternate Earth in Quantum 3.

Yrth: A quantum sargasso (see *Marooned!*, p. 546) accidentally discovered by an Infinity world-jumper a few years ago. He had many adventures before finding a magical artifact that allowed him to escape! Yrth is a TL3 "medieval fantasy" world where powerful magic works in a reliable fashion. Elves, dwarves, goblins, dragons, and several other mythical races exist there. Humans are dominant, but local legends suggest that they are not the original natives. Infinity believes that a banestorm must have transported members of several human cultures to Yrth – either from Homeline during the Middle Ages or from a medieval echo.

Pocket Multiverses

"You know, back home, I'm a god."

A "pocket multiverse" is a set of closely coupled dimensions that share a set of inhabitants and metaphysical laws. Working magic is likely, but not certain.

The typical pocket multiverse consists of one baseline physical reality (which might contain an alternate Earth) and one or more attached alternate dimensions or interpenetrating planes populated by magical beings or spirits. There is often a "void" that surrounds all these dimensions.

Many pocket multiverses house powerful, even omnipotent godlike beings. Most such entities are tied to their realm and cannot leave – at least, not without leaving behind most of their power. However, magic or technology from *outside* the multiverse might allow these gods or their servants to leave. And rarely, a pocket multiverse "absorbs" another reality, bringing it *inside* the gods' domain!

A simple example of a pocket multiverse is a regular physical universe containing a parallel Earth; an interpenetrating, superimposed spirit world; and two alternate dimensions, a heaven and a hell. In this system, people who die really *do* go on to their punishment or reward; ghosts and spirits prowl the space between; angels and demons are quite real; and there may be a Creator.

Infinity researchers find operating in pocket multiverses complex, difficult, and dangerous. Parachronic technology does not always function in all parts of these systems!

Interdimensional Travel

The keys to crossworld travel are the parachronic *projector,* which can move matter between timelines, and the parachronic *conveyor,* which facilitates such transport. There are also nontechnological means of travel between worlds.

Parachronic Conveyors

A "parachronic conveyor" is a vehicle for interdimensional travel. There are different styles, but all involve an enclosed hull containing a parachronic field generator, a power system, and a control system.

Hull Type

Capsule: The standard conveyor is basically an enclosed box. It may be disguised for covert operations – for instance, as a hut, covered wagon, shed, phone booth, or trailer.

Mobile: Some conveyors are functioning, mobile vehicles. These usually mass from 1 to 20 tons, although larger and smaller designs exist.

"Mobot": An unmanned, robot-controlled vehicle. These are still experimental; Homeline cannot yet build a really robust artificial intelligence.

Parachronic Field Generator

A conveyor's generator may have *subquantum, quantum,* or *two-quantum* range. No one has yet developed a conveyor with greater range.

The generator also has a *mass capacity:* the maximum mass it can transport. The mass of the conveyor (including the generator) and its payload cannot safely exceed this limit.

The capabilities of the generator largely determine the cost of the conveyor, which is usually very high. This isn't all for the circuitry – much of the cost is licensing fees!

Subquantum Conveyors: These can jump between destinations at the same quantum level. Base cost is $10 million. Each ton of capacity adds $10 million and 10 lbs. LC2.

Quantum Conveyors: These can jump between destinations at the same quantum level. With the help of a projector, they can jump to or from *adjacent* quantum levels as well. Base cost is $20 million. Each ton of capacity adds $150 million and 10 lbs. LC1.

Two-Quantum Conveyors: These work like quantum conveyors, but can jump up to *two* quantum levels with the aid of a projector. Two-quantum jumps are always tricky! Base cost is $30 million. Each ton of capacity adds $300 million and 30 lbs. LC0.

Power System

A jump requires 200 kJ of energy per ton of capacity – delivered in a single pulse. A typical pulsed power system for the field generator costs $50 and weighs 5 lbs. per kJ.

Control System

A conveyor may have one of two types of control system:

Fixed: The conveyor can only jump between two specific realities, whose coordinates are hardwired. The operator cannot change these settings. This type of conveyor is typical of those available to most corporations, private users, etc. who have proper licenses. LC2.

Parachronic Coordinates

Levels of several different types of parachronic energy determine a world's "parachronic coordinates." The most important of these is the "T-Gamma force," which has levels that only come in whole numbers.

Suppose the T-Gamma force equation were composed of two numbers – there are really hundreds, but suppose it were only two. The formula for Homeline might be 5 + 0 = 5, so it is in Quantum 5. The formula for Earth-Beta, a close parallel, might be 4 + 1 = 5, so it's also in Q5. The next world might be 3 + 2 = 5, which is still in Q5. These similar formulas give the same result – 5 – so the associated worlds are similar to Homeline, as well as nearby.

But a world might also have a formula of 25/5 = 5, or -5 × -1 = 5, which gives 5 in a very different way. Such worlds are still in Q5, but very different.

By the same analogy, a parallel that is in Q7 but still very similar to Homeline might have the formula 7 + 0 = 7.

Programmable: The conveyor can jump to any reality within its range. To accomplish this, the operator must enter the coordinates into its guidance system manually. These units are much more tightly controlled. LC0.

Conveyor Operation

An unassisted parachronic conveyor can only jump to timelines in the same quantum. For a long-range conveyor to jump to a different quantum, it requires the assistance of a parachronic projector (see below). For a safe jump, the total mass of the conveyor and its payload cannot exceed the field generator's capacity. A typical conveyor, after subtracting its own mass, can transport anywhere from 500 to 2,000 lbs. of occupants and cargo.

A conveyor jump requires a lot of energy in a single pulse – more than a TL8 vehicular power plant can deliver. The necessary pulsed power system accounts for about half the mass of a conveyor. It can deliver enough energy for a single jump, after which it must be recharged. Most conveyors have an onboard fuel cell that can replenish the energy bank in about 30 minutes. This means the conveyor can't return *immediately* after making a jump!

A conveyor needs to be programmed with the precise parachronic coordinates of both its *location* and its *destination*. If a conveyor gets lost, it's in trouble: the crew may know where to go, but not how to get there from their current position. Finding the coordinates of a new universe is a huge research project, taking years of effort. Infinity and Centrum both have the parachronic coordinates of several hundred universes on file. In Homeline, most are publicly available, but some (for closed worlds, or those known to be controlled by Centrum) are secret.

Parachronic coordinates are used in conjunction with the actual space-time location of the conveyor to plot a "parachronic course." A different "jump program" is required for each location in real space (e.g., Times Square, New York) and each set of parachronic coordinates (e.g., Homeline to Earth-Beta). Infinity Unlimited charges about $500 for a pre-plotted jump program, from a commercial I-Port to the equivalent location in the target universe. To create a custom jump program (e.g., to depart from your garage in Queens instead of from Times Square) takes 5 to 10 days of supercomputer time . . . at a cost of $1 million to $20 million. For this reason, most legitimate travelers use the I-Ports.

Just prior to departure, the conveyor's operator must perform final jump calibrations to correct for local conditions and the conveyor's current mass. Solar neutrino and cosmic ray density, local electrical and magnetic fields, and similar factors can all influence the jump; a good operator will compensate, taking 10 minutes. The operator can take more or less time; see *Time Spent* (p. 346) for the effects on the skill roll for the jump.

Finally, the operator hits the "jump" button! This activates the conveyor's generator. (If the jump requires a projector, he hits the "ready" button instead. The conveyor jumps as soon as the projector's field is focused on it.) The conveyor vanishes, to reappear at the same point in space in a different universe.

Parachronic Projectors

A "parachronic projector" is a device that enables a quantum or two-quantum conveyor to cross quanta. It consists of an enclosed "stage" surrounded by equipment. It can be set to dispatch or retrieve a conveyor.

A projector's size depends on how much mass it can move. Van Zandt's first projector filled a large laboratory. The largest modern projectors can move up to 300 tons at once, and occupy most of a city block. An "average" projector requires enough hardware to fill a small auditorium, and can move two tons.

A projector requires a great deal of energy to operate. This can get expensive, but for a large projector, the cost *per unit of mass* remains low enough to be negligible – even when moving relatively low-value items, such as grain and ore.

Projectors are *very* costly. Infinity quotes a base price of $100 million for the simplest installation with a two-ton capacity; prices only go up from there. Thus, only governments, eccentric billionaires, and large corporations can afford their own projectors. But since the cost to transport people and goods is relatively low, projectors routinely handle a dozen transits per day.

Projector Operation

In order for a projector to *dispatch* a conveyor, the conveyor must be positioned on the projector's stage and "ready": programmed, powered-up, etc.

To *retrieve* a conveyor, the projector must be focused on a specific universe within two quanta. If a "ready" conveyor in the target universe occupies a point congruent with the stage, the projector snatches it back. Since "real time" interdimensional communication is impossible, retrieval operations rely on setting pickup times and alternates. For example, a cautious penetration expedition might arrange to have a projector turned on once every 24 hours. If they don't want pickup, they won't power up their conveyor.

It is relatively straightforward to use a projector to dispatch or retrieve a quantum or two-quantum conveyor over a one-quantum distance (e.g., from Q5 to Q4 or Q6, or vice versa), provided the conveyor has an operating, calibrated field generator.

To dispatch or retrieve a two-quantum conveyor over a *two*-quantum distance (e.g., from Q5 to Q3 or Q7, or vice versa) is trickier. A conveyor with an operating, calibrated field generator isn't enough – transit is only possible under special conditions, and these can only be predicted about four hours in advance. (Every hour, roll 3d. On a result of 7 or less, an hour-long window will open in four hours.) Only the computers and instruments on the *projector* can make this prediction; those in the conveyor have no option but to prepare for pickup and wait . . . and wait . . . and wait.

Operations and Accidents

When a conveyor jumps, roll against the operator's Electronics Operation (Parachronic) skill to see how the trip went. On a projector-assisted trip, both the projector operator *and* the conveyor operator must roll.

Modifiers: -3 or worse for damaged equipment. Electrical disturbances give a penalty, from -2 for severe electrical storms or solar flares to -6 for the electromagnetic pulse of a nuclear blast! ("Hardening" the electronics won't remove this modifier – this is an environmental effect, not equipment damage.)

On a success, the conveyor instantly disappears from its starting universe and reappears at the same point in the destination universe. On a failure, by either the conveyor operator or the projector operator, something went wrong! Usually, the transit happens anyway . . . but not as planned. Roll 1d – or 2d, for a two-quantum jump – and add it to the operator's margin of failure. If the conveyor and projector operators both failed, *add* their margins of failure! If the conveyor is overloaded, increase the total by one or more. Then look up the result on the table below.

2 – Timing error. Trip takes 1d minutes from the viewpoint of those "outside." There is no way to tell a simple timing error from a totally lost shipment . . . so *any* delay triggers a security alert, just in case! This is why parachronic operators have ulcers.*

3 – Timing error. Trip takes 1d minutes from the viewpoint of both those in transit and those "outside."*

4 – Timing error. Trip takes 4d minutes from the viewpoint of those "outside."*

5 – Timing error. Trip takes 4d minutes from the viewpoint of both those in transit and those "outside."*

6 – Positional error. Conveyor appears 1d feet too low, or off to one side. Minor damage to conveyor or projector, but not to passengers or cargo (unless it is *very* fragile).†‡

7 – Resonance error. Shipment appears and then vanishes, reappearing where it was coming from. A repeated attempt is allowed, but at -1 to skill.†

8-9 – Field-strength error. Electrical discharges do 1d-2 burning damage to all personnel, and temporarily disable all unshielded electronic equipment. The conveyor's field generator is disabled until it receives major repairs.†

10 – Positional error. Conveyor appears too high. The fall inflicts 1d crushing damage on each passenger and to breakable cargo. The conveyor's generator is damaged: -3 on trips until it gets minor repairs.†‡

11– Severe positional error. As **10,** but falling damage is 2d and the conveyor's generator is *disabled* until it receives major repairs.†‡

12 – Focus error. The conveyor goes somewhere unintended. It will appear in the same place, geographically, but it could be on any of an infinite number of timelines. Roll 1d: 1-3 means it's on the right quantum level but in a different timeline; 4-5 means it's on an adjacent quantum level; and 6 means it's two quantum levels off. It will take days, weeks, or even months for the computers at Infinity (or Centrum) to deduce its location. Until then, *there is no way to retrieve it.* If a projector was involved, there is also a 2-in-6 chance that *something* will arrive on the stage from a random crosstime location. It might be air, rubble, an artifact, or a living being . . . and it might be dangerous. In anything but an emergency, the projector will be taken offline for 1d days while researchers gather data (the hope is to build a controllable "snatcher" projector someday!).†‡

13 – Matrix error. The conveyor arrives in small pieces – it is totally destroyed. Grain, ore, etc., is unaffected; other cargo is killed or destroyed. The GM may wish to "fudge" this result for PCs (treating it as **12** or **14,** as desired).†

14 or more – Utter confusion! Roll twice more and apply *both* results. If either of these new rolls results in 14 or more, see *Fascinating Parachronic Disasters* (below) instead.†

* Travel time between worlds is theoretically zero. Sometimes, for no known reason, a trip seems to take longer. And sometimes, a trip seems instantaneous to the passengers but takes time from the point of view of the people on either end!

† When one of these results comes up, roll 1d: on a 1 or a 6, nothing happens; on 2-5, the corresponding time-delay result from the table (**2** through **5**) occurs *as well.*

‡ If this error would mean that the conveyor materializes inside a solid object, anything it displaces simply *vanishes.* No one has yet explained where it goes. This means that it is very foolish to stand on a projector stage or within the area corresponding to the focus of a projector! You could vanish. Worse, *part* of you could vanish.

Fascinating Parachronic Disasters

Roll 2d and consult the table below whenever result **14** comes up twice in succession on the previous table. Several of these results assume *living* cargo; reroll these if sending inanimate cargo.

Some of these results appear to violate parachronic science. Many of them have not happened to Infinity . . . yet. A hazard associated with any such event is the mob of researchers that instantly appear – to take possession of all equipment involved, and to debrief all witnesses to within an inch of their lives.

2 – Trip takes centuries, or even millennia, from the viewpoint of the shipment. Much less time passes for the "outside" world. Survival of living beings is unlikely – they might arrive and then crumble to dust! Rather than killing off PCs, the GM is free to substitute other temporal oddities, such as aging in reverse. Finding a cure could be an interesting adventure.

3 – Trip takes a very long time from the passengers' *mental* perspective, but no time from their *physical* perspective. Each passenger gains 3d points in assorted mental quirks and disadvantages, assigned by the GM in accordance with the passenger's personality. (This has happened twice.)

4 – Signal error. Living things arrive safely . . . except that everyone's mind ends up in the wrong body. This may be permanent, or it might wear off in 1d days. See *Mind Transfer* (p. 296) for the effects of mind swapping.

5 – Tau-factor error. Shipment appears as a "mirror image" of itself. Ores are unaffected. Foodstuffs are inedible. *Living* passengers acquire the Restricted Diet and Unusual Biochemistry disadvantages, and require a special diet to survive. If they are far from Homeline, all Survival rolls are at -5, reduced to -2 once someone realizes (from GM clues) what has happened. (This has happened twice, and is suspected in two other cases where the crew of a lost conveyor starved in "friendly" surroundings.)

6 – Frog error. The shipment arrives in a rain of tiny frogs, or some other bizarre "Fortean" phenomena. (This has happened six times, and four Infinity researchers have gone mad trying to explain it.)

7 – Bio-field error. All *nonliving* material in the shipment – including the conveyor – disintegrates or is lost elsewhere. This can leave travelers embarrassed or stranded, depending on whether they were arriving at a projector stage or leaving one.

8 – Living beings experience brief telepathy. Each passenger acquires 20 points worth of Telepathy abilities (see Chapter 6); the GM assigns these randomly. These last 1d days – roll separately for each person. (This has happened twice . . . that Infinity knows of.)

9 – The shipment appears *twice*, 1d minutes apart. (This has happened once; fortunately, it was an uncrewed conveyor. The second conveyor displaced the first one when it was partially unloaded. Was the duplicate some sort of "mirror" effect, or was it from another timeline? It is unknown what would have happened had there been passengers. Would *they* have been duplicated?)

10 – The shipment or conveyor is switched with a very similar shipment or conveyor belonging to Centrum (or to Homeline, if the mission was Centrum's).

11 – The shipment or conveyor is switched with a very similar shipment or conveyor belonging to some other, as yet unsuspected, race of crossworld travelers.

12 – The shipment or conveyor is switched with a shipment or conveyor belonging to some *completely alien* dimension-traveling culture. Mass is unchanged, but nothing else need be the same!

Parachronic Detectors

A "parachronic detector" is a device that can detect an incoming jump. To do so, it must be on the same reality as the jump, and the jump must occur within its range (see below). Roll against the operator's Electronic Operations (Sensors) skill. Success gives a bearing. Two or more stations within range can triangulate and determine the jumper's location to within a few percent of the actual range.

The sensor also records the jump's reality disturbance. An hour's analysis and a successful Physics (Parachronic) roll will reveal the source of the jump – conveyor, projector, or "anomalous" (e.g., a spell) – and its quantum of origin. A day's work and a roll at -5 identifies the *reality* of origin, if the researcher is familiar with it.

The portable unit most often carried by Infinity Patrol agents costs $560,000 and weighs 56 lbs.; it the size of a large backpack, and has a 1,000-yard range. Larger models are $1 million and 200 lbs. per mile of range.

When Infinity or Centrum takes over a timeline, standard operating procedure is to deploy a network of long-range detectors. However, their expense means that few worlds have *total* coverage. It is generally only cost-effective to deploy them in major centers.

Damaged Conveyors

Failed jumps, accidents, sabotage, and attacks can all damage a conveyor. Depending on its hull, a conveyor might be as flimsy as tinfoil or as robust as a tank – but should *any* damage penetrate its DR, assume that there is a 1-in-6 chance of significant damage to its delicate parachronic hardware.

The dramatic effect of damage is more important than the specifics. As a rule of thumb, it usually reduces the conveyor's capabilities: the conveyor still functions, but at -3 or worse to all Electronics Operation (Parachronic) rolls.

Severe damage (GM's decision) may cripple the conveyor completely. Until repairs are made, it cannot make a subquantum jump itself, nor can a projector retrieve it. In effect, it is "stranded."

Lost Conveyors

A conveyor can become entirely lost – that is, fail to arrive where it was expected – for a variety of reasons. These boil down to "operator error" and "bad luck."

If someone on Homeline was retrieving the conveyor with a projector, or expecting it to return under its own power, its loss will be noticed immediately.

If the conveyor was outbound from Homeline, the time before its loss is noticed depends on the shipment. Loss of a regular supply run to a major base will be reported as soon as possible, by sending a message capsule to the other end. However, it might take days or weeks to notice the loss of an exploration mission!

The sooner a conveyor's loss is noticed, the better the chances of recovery. The Infinity Unlimited computers can get to work on the problem, taking into account every known variable, down to the exact mass and capacitance of the conveyor. Sometimes, they can predict where it might have appeared. If they're lucky, this is a charted, habitable timeline. But sometimes it isn't.

Occasionally, the computers predict an *uncharted* location. In fact, this is how several new timelines were discovered. Even so, being randomly dumped onto a brand-new timeline, while it makes a great adventure, is a trip most travelers would rather avoid.

Lost/Moved Timelines

This is *not* "operator error" – but when it happens, it causes operator headaches! See *Timeline Shifts* (p. 544).

Paradoxes

Paradoxes don't happen, because parachronic travel is not true *time* travel. However, in an "echo" – a timeline that duplicates Homeline's history – any intervention that changes the flow of events can cause a quantum shift: an expensive nuisance at best, a disaster at worst. See *Timeline Shifts* (p. 544).

That said, a continuing nightmare of more imaginative types is this: What if one of the historical parallels is somehow Homeline's past, and visitors change it without noticing? But that hasn't happened . . . yet.

Natural Parachronic Phenomena

There are several unusual "natural" phenomena that can reach across dimensions.

Banestorms

A "banestorm" is a localized event that transports everyone within a certain area to another dimension. The phenomenon is most often circular, and may range in size from a few yards to a few miles across. On a planet with an atmosphere, it tends to manifest as a thick fog bank, mysterious thundercloud, heavy electrical storm, etc. that builds up slowly (e.g., a fog rolls in and blocks all light) and vanishes suddenly.

When a banestorm vanishes, so does everyone within its radius. These "passengers" reappear . . . elsewhere. And unlike a parachronic conveyor, a banestorm does not always transport its passengers to a spatial location that corresponds to their point of origin in their home dimension. Some geographical locations seem to be "preferred" pickup or delivery points. These places often earn a reputation – the Bermuda Triangle, for example.

There are few consistent patterns beyond this. Some worlds seem to be more prone to banestorm manifestations than others – and on a given world, certain *locations* seem to be unusually susceptible. Multiple banestorms can strike simultaneously. Researchers know of at least two special types of banestorm:

Twin banestorms exchange matter from two dimensions. A large land-based event can even exchange *terrain* between worlds.

Permanent banestorms transform an area of a single physical reality into one in which two dimensions co-mingle. This often has an effect on the area's mana level, increasing it for hundreds or even thousands of miles around.

No one knows what causes any type of banestorm. Theories include:

Banestorms are magical. Some evidence suggests that banestorms are magical in nature. Divination can often predict them. Powerful ritual magic can sometimes even summon them. Magic seems to be less successful at *controlling* them, however . . .

Banestorms are technological. Parachronic technology can certainly detect banestorms; a parachronic detector (p. 532) "goes crazy" 1d minutes before one appears. There is considerable debate as to whether parachronic technology can *cause* them. Parachronic Laboratories (p. 538) believes it might be possible to create an artificial banestorm using a "parachronic bomb" – but if they've got one, they don't admit it. Some theories suggest that *any* use of parachronic technology may intensify or even cause banestorms. And some evidence suggests that the technology need not be parachronic: on one world, Merlin, the first nuclear detonation to take place triggered a permanent banestorm.

Banestorms are alive. A few researchers believe that banestorms are living things!

Reality Quakes

Unlike a timeline shift (see p. 544), a "reality quake" is a parachronic convulsion that overturns the *past* of a given world, rewriting reality and changing its established history. This would normally go unnoticed, except that fragments of the previous past ("reality shards") often still remain, persisting as bizarre memories, inexplicable amnesia, or anomalous artifacts – especially in the "fracture zone," the name given to the "epicenter" where the two histories began to diverge. Some reality shards are even human – legendary figures, mysterious strangers, or individuals "duplicated" across worlds. Extremely powerful reality quakes sometimes overturn both the past and future of a world, hurling reality shards into nearby parallels.

Dimensional Highways

A "dimensional highway" is a path that runs across dimensions. Researching its history often reveals that it follows ancient straight tracks, ley lines, etc. At points along the road, nexus portals exist. These are usually periodic or locked, and as wide as the road itself. The road might end at a portal in one dimension and resume at a portal in the next – or it might continue in the original world as well, and after a stretch, lead to another portal to a third reality, and so on. Who built the roads? Nobody knows . . .

Nexus Portals

A "nexus portal" is a hole leading from one dimension to another. It is usually circular and less than 10 yards across, and allows light to pass through from both ends (that is, you can see its destination). Like a conveyor, a portal crosses realities without crossing space.

Most portals are *two-way:* you can enter or leave at will. Some, however, are *one-way:* you can enter but you can't leave. If you stick a limb or object partway through, you can't retrieve it – it's stuck until you or the object go *all* the way through.

A portal might be further qualified as:

Open: The portal is always present and can be traversed freely.

Periodic: The portal only appears sometimes: every full moon, once per century, etc. If it's two-way, the way out usually has the same cycle.

Locked: The portal only appears in the presence of a specific "key" – usually a magical or technological artifact. A parachronic detector or world-jumper can detect its presence.

Summonable: The portal only appears when summoned. This requires a specific action, which might be mundane (touch a specific object) or complex (use a specific sacred dagger to perform a blood sacrifice). Most such portals only remain open for a brief period after being summoned.

Variable: The portal is a junction between more than two realities. The destination might be random or selectable (via a key or action). If two people want to go to the same place, they should hold tight as they pass through!

Hidden: A hidden portal is invisible – you can step through it without realizing it was there. Such portals are often one-way! A parachronic detector can sense a hidden portal only at 1/100 its normal range – and only when the portal is actually used to traverse a dimension. A world-jumper can sense a hidden portal in his line of sight on an IQ roll.

Shiftrealms

Some geographical features (and a few man-made structures) are "unstuck" in reality. They shift between worlds, either randomly or on a regular cycle. These "shiftrealms" may appear and vanish entirely, or overlay or switch places with local reality. They can range in size from individual rooms to entire worlds. Researchers believe this may account for tales of mysterious vanishing islands (such as Avalon and Huy Breasil) and haunted forests.

Infinity's World Classes

Infinity applies one of the following formal classifications to each timeline.

Open

The world is open to visitation and colonization.

Protectorate

The world is a populated parallel under the protection and control of Infinity Unlimited or the United Nations. Depending on the world's status, limited trade and contact may be possible.

Research

The world is set aside for study. Most such worlds are parallels. Types include:

Anomalies: Worlds that show some interesting but not obviously dangerous variations in physical laws.

Cultural Preserves: Worlds left as "controls" to judge the effect of intervention on other, similar timelines.

Nature Preserves: Worlds with interesting wildlife, such as dinosaurs . . . or dragons.

Primitives: Parallel worlds inhabited by Bronze Age or earlier man. (There is continuing pressure to allow more exploitation of these worlds.)

Closed

The world is "off limits" to absolutely everyone save a few chosen researchers or Penetration Service agents . . . mostly because they pose a potential danger to Homeline. Infinity tries to keep the very *existence* of these worlds secret. Reasons for this include:

Hell Parallels: Timelines depopulated by uncontrollable disease, nanotech gone awry, or forces not yet understood. See p. 528.

High-Tech and Aggressive: The world would present an obvious danger if the locals learned about crosstime travel. The Nazi-dominated "Reich" parallels are the best example.

Mysterious Forces: Worlds that harbor magic, widespread psionics, or any ability under the general heading "super powers."

Nonhuman Intelligence: Timelines in which aliens are the dominant species.

Ultra-Tech: When a world has technology more advanced than Homeline's (or Centrum's), it is considered hazardous even if its culture seems benign. The researchers' objective here, of course, is to learn the native science without being caught! No Earths with interstellar travel have been discovered so far.

War Zone: The world is the site of a major struggle between Infinity and Centrum, or between different native factions.

There are a few "special" closed worlds that don't fit into any of the categories above; e.g., a mysterious parallel where the inhabitants suddenly began to shrink. They are usually closed for good, one-of-a-kind reasons!

Infinity Unlimited

Infinity Unlimited, usually called "Infinity," is the multinational corporate entity through which Homeline exploits the fruits of – and tries to control – parachronic technology. It is a huge, wealthy organization. It is not always efficient, but it is effective.

Infinity operates under the joint auspices of the United Nations Interworld Council (consisting of the ambassadors of the permanent members of the U.N. Security Council) and its own board of directors. The board is half elected by Infinity's own shareholders, half appointed by the Council.

Infinity owns, and has the right to police, *all* parachronic equipment. When others build such equipment, they do so by permission. Any use of projectors is under Infinity's direct supervision, and licensing fees are required. Infinity has the power to confiscate or destroy any unauthorized conveyor or projector – but in practice this right is limited when the device is in the hands of major powers operating on Homeline.

Infinity considers itself the custodian of all other timelines – although its practical hegemony extends only through Q4, Q5, and Q6. Its subsidiaries have a monopoly on the research and penetration of new timelines. As the "legal guardian" of the alternate worlds, Infinity leases development rights to other Homeline entities: governments, corporations, or even individuals. In effect, Infinity regards itself as the *owner* of any world below TL6, and limits or forbids contact with worlds of higher TL.

Infinity also requires that outtime interlopers "better the lot" of the people whose worlds they infiltrate and use. This is often interpreted very loosely . . .

Infinity's ability to enforce these policies is strong but hardly absolute. Many interests explore and exploit timelines clandestinely, simply because it is so *profitable* to find and monopolize a new world!

Infinity has a number of subsidiary organizations. Each performs a different task. They try to cooperate closely, but communications breakdowns and low-level infighting are not unknown. Additionally, no matter how carefully Infinity screens its employees, there is always the chance that Centrum infiltrators, government and corporate spies, and ordinary thieves are among them – leading to adventures with no outside enemy.

Crosstime Recruitment

Homeline and Centran crosstime organizations often employ locals, but they do so through front organizations – the outtimers have no clue that they're working for extradimensional bosses. In fact, it's a serious crime for *anyone* to divulge The Secret to an outtimer. However, the Infinity Patrol has limited authority to recruit talented outtimers. Its Centran equivalent, Interworld, enjoys similar powers.

Crosstime recruitment is supposed to occur only when an outtimer's talents are deemed to be a *significant* asset to the organization. A field agent who recruits a local will have to justify his actions to a board of inquiry. In practice, tolerance depends on the situation. World-jumpers (p. 544) are an exception. They're so valuable that every effort will be made to recruit them, no matter where they're from.

On the other hand, there have been cases where recruitment was initiated for personal reasons. For instance, an undercover Time Scout might fall in love with a talented outtimer and use his influence to recruit her into the service. In a case like this, Infinity *might* go along in order to keep a good agent . . . but it is more likely to court-martial the offender and send both lovers off to Coventry (p. 540).

The Patrol expects all recruits to go through training and indoctrination, and watches them carefully to ensure that they remain reliable. An outtime recruit whose true loyalties remained with his homeworld would be a great liability.

ISWAT

Interworld Special Weapons and Tactics, or ISWAT, is the elite black-ops section of the Infinity Patrol. It specializes in operations on closed worlds, weird parallels, and pocket multiverses, and routinely performs high-priority but *deniable* missions that can determine the fate of entire worlds.

ISWAT has an undisclosed number of operatives, who work in small teams. Some are highly trained I-Cops or special operations troops . . . but the majority are outtimers recruited for their unique talents. Rumor has it that these include famous historical or mythical figures plucked from alternate worlds; wizards, psis, and supers; nonhumans (including undead); slumming angels and reformed demons; and even retired pagan demigods. Many of these rumors are true.

ISWAT ops have three things in common: a dedication to the nebulously defined ideals of "peace and freedom," a love for action, and a very tight personal loyalty to their team members. The eight iconic characters on pp. 307-323 make up an ISWAT team. Such a team is an ideal PC group for *very* free-wheeling adventure.

Does Centrum have its own ISWAT? That's a very good question.

Infinity Development

This joint U.N.-Infinity organization is responsible for parceling out "trading territories" among the timelines. When a new world is opened for commercial exploitation, interested parties must submit bids to ID. Cash is just one consideration; bidders must also show how they will protect the local environment and population, keep security, and so forth. Outtime installations are always subject to inspection by ID bureaucrats, I-Cops, or both.

Many Homeline organizations object *strongly* to the implication that Infinity "owns" the other timelines . . . but that's the way it works.

Infinity Patrol

The Infinity Patrol is the "operations" branch of Infinity. In theory, it is

a private security force operating under a U.N. mandate – much like the various contractors (some armed) that the United Nations has hired in the past to clean up after wars. In practice, the Patrol is a supranational paramilitary agency under Infinity's control.

The Patrol's jurisdiction on Homeline is strictly limited to protecting Infinity premises – although they have close liaisons with both national police agencies and Interpol. Beyond Homeline, only its reach limits its influence, but it has limited powers on worlds that have large national presences. The Patrol is spread *very* thinly among the many timelines it polices.

The Patrol is a large organization, with 10,000 field agents and 50,000 other employees. It is multinational in character. The paramilitary "I-Cops" primarily recruit former police and military personnel, while the Penetration Service attracts adventurers and scientists of all sorts (geologists, anthropologists, biologists, etc.). The one constant is that everyone must pass rigorous psychological and loyalty examinations intended to weed out fanatic nationalists, criminals, radicals, and anyone else likely to betray the organization. Most of the time, this works – although some Patrol members undoubtedly have divided loyalties or hidden agendas.

A Patrol field agent might be an explorer, investigator, or soldier, but regardless of his job, he serves in one of the Patrol's two main branches:

Intervention Service: Popularly known as the "I-Cops," Intervention is the security and espionage arm of the Patrol. Its primary responsibilities are enforcing Infinity regulations and countering Centrum penetrations. Intervention is organized into 10 divisions, including Justice, Security, Internal Affairs, and Special Operations.

Penetration Service: The "Time Scouts" are responsible for surveying and opening new timelines. They also handle search-and-rescue operations for lost conveyors. One of their least-known but most dangerous jobs is crosstime intelligence gathering. Penetration's eight divisions include Contact, Echo Surveillance, Intelligence, and Search and Rescue.

Infinity Patrol Missions

The Patrol has many duties, including:

- *Enforcement:* Inevitably, some Homeline governments, corporations, and individuals use timelines in unacceptable ways: exploiting the natives, wasting resources, importing mercenaries and equipment for military adventures, and so on. This happens constantly, despite the I-Cops' best efforts. But the Patrol keeps trying to stop it. This is the job of the Justice division of Intervention, but Penetration Service agents often notice the problem first, when a "new" timeline turns out to have uninvited guests.

If an unauthorized penetration is discovered, the I-Cops go into action immediately. The policy is to shut down the penetration instantly if The Secret seems likely to be breached . . . but otherwise, to infiltrate the penetration in order to roll up the entire gang – not just the foot soldiers. An experienced Time Tours guide or retired scout might be approached for such a mission.

- *Homeline Security:* The Security division of Intervention is focused on monitoring and stopping crosstime infiltration of Homeline. It works closely with the Intelligence division of Penetration – and with the intelligence agencies of major world powers – to detect and neutralize threats. A major part of this job is keeping tabs on conveyors and projectors.

- *Outtime Security:* A pillar of Infinity's policy is that no timeline outside Homeline (and obviously Centrum) is to learn that crosstime travel even *exists* – let alone use it – except under close control. The Penetration Service works to discover which timelines are edging toward this technology (or any other means of dimensional travel), while the Intervention Service takes action to ensure that individuals and governments do not breach regulations, and punishes those that do. When necessary, Intervention uses extreme measures to keep The Secret (see p. 540).

- *Defense vs. Centrum:* This includes counterespionage against Centrum spies, espionage to learn more about the enemy, and the most "romantic" job in the Patrol: defending echoes against sabotage. Penetration and Intervention work together at these tasks. Penetration engages in surveillance, espionage, and counterespionage, while Intervention handles active police work and special-ops missions to counter Centrum operations once detected.

- *Rescue:* There are many reasons why crosstime travelers might fail to make it back on time, ranging from the trivial (conveyor blew a fuse) to the disastrous (eaten by dinosaurs, taken hostage by renegades, or burned as witches). It's also possible that they interfered with history and caused a timeline shift (see p. 544). So when travelers fail to check in, the Patrol sends out a rescue mission.

Who goes on the mission depends on who was lost – and where. On a "safe" timeline, the response might be two junior Penetration troubleshooters with a tool kit . . . but they'll be armed, just in case. For dangerous timelines, it might be an armed conveyor full of I-Cops.

In all cases, the Patrol's top priority is to safeguard The Secret; therefore, retrieving or destroying a lost conveyor can be more important than getting missing travelers out alive! For this reason, the Patrol often isn't called immediately if the missing party belongs to a group other than Infinity. Many crosstime corporations (such as Time Tours) have their own reaction forces. Other governments have their own security forces, too – some more competent than others. And in extreme cases, ISWAT (p. 536) might intercept the call and quietly take over the mission.

A rescue mission is a good, and potentially violent, adventure. And if it takes place in an echo, there is also the danger of causing an inadvertent quantum shift . . .

Penetration Missions

New timelines are discovered mathematically, although a lot of trial and error is also involved. Initial entry into a new timeline is always made using a robot with an extensive chemical and biological sensor package. Many timelines get no further visits . . . they're not suitable for human life. But when a timeline looks safe, a human has to go in.

The first scout's job is to get in, look around, and determine whether the timeline is inhabited – and, if so, by whom or by *what*. If it proves to be uninhabited, Penetration classifies it for colonization or other use and turns it over to Infinity Development.

But if the timeline is inhabited, it remains the property of Penetration, and the survey proceeds *very* carefully. The first scout isn't expected to bring back anything more than an estimate of the tech level and a recorded sample of the language. Later teams try to learn a bit more on each visit. If the timeline is similar to a known parallel or historical period, experienced agents can be brought in quickly. Otherwise, exploration happens one careful step at a time. The higher the timeline's technology, the more careful the explorers must be.

Only very well penetrated timelines are opened up to organizations like Time Tours. Usually, these are on Q4 and Q5, where Centrum's agents cannot reach. But certain Q6 echoes are also (carefully supervised) tour sites.

Naming New Worlds: A newly located timeline receives a code number based on its parachronic coordinates. Researchers inevitably end up coining informal names during the penetration process. Eventually, one name sticks and becomes official.

Penetration Adventures: An adventure or even a campaign could be built around the first penetrations of a new timeline – especially if it has high technology and is not a close parallel. One of the first steps is to grab a daily newspaper. Imagine the gradual penetration of, for instance, a world in which the Nazis won World War II . . . and it is now 1960.

Miracle Workers

Miracle Workers is the nonprofit, "do-gooder" side of Infinity. It works closely with various U.N. aid agencies. Despite being heavily financed by licensing profits from other parts of Infinity, as well as by outside donations, there is never enough time or money to help everywhere. And – to the great frustration of the staff – Miracle Workers is strictly forbidden to help out in the historical echoes, for fear of shifting the timeline.

Miracle Workers is not for profit, but is not in the business of handing out free lunches, either. When it resettles disaster victims, for instance, it usually requires those resettled to pay their way – most often by working for other Infinity operations. Still, these contracts are always more than fair to those being helped.

Miracle Workers supplies vaccines, antidotes, food crops, etc., in situations where these things would make a difference. The biggest challenge here is covering its tracks, except in those rare, usually depopulated timelines where Infinity simply moves in and takes over.

Parachronic Laboratories

This is Infinity's pure-research organization, dedicated to improving both parachronic technology and Homeline's understanding of the science behind crosstime travel. Infinity might ask agents of any of its organizations to test prototype equipment from "Paralabs." When a traveler survives a new and devastating conveyor accident, researchers from Paralabs are in the middle of the investigation . . . probably demanding that the victims do it all again, more slowly.

Outside Organizations

Many organizations, both government and private, have access to conveyors. All of these units are theoretically under Infinity's control, open to I-Cop inspection at any time. But conveyors are often falsely reported "lost" and put to clandestine uses – or simply stolen by untrustworthy agents or employees. This is a constant headache for the Patrol.

More than 30 non-Infinity organizations have their own projectors. Fortunately, these are easier to police, and every projector has its own full-time Patrol monitoring team.

The United Nations

The United Nations theoretically oversees Infinity in its many forms, but its "control" is loose on Homeline, and looser yet in the alternate worlds. Infinity definitely keeps secrets from the U.N. However, the U.N. has nearly unfettered access to Infinity facilities for operations such as humanitarian relief missions to other worlds.

Since U.N. members tend to protest interventions against their crosstime analogs, most crosstime U.N. interventions are either in very different parallels or intended to help the "local" U.N. survive and grow. At any given time, the U.N. may be actively intervening in two to four different timelines.

Governments

Several nations (notably China, France, Germany, Japan, Russia, the United Kingdom, and the United States) have significant "official" parachronic capabilities, with their own fleets of projectors and conveyors. In addition to engaging in mining, waste disposal, and research, these governments maintain "colony" worlds on permanent lease from Infinity.

For Infinity, the biggest problem with governments is their incessant "deniable" secret operations, as they try to circumvent the limitations Infinity places on them. Conveyors can and are built secretly, and the major powers undoubtedly have clandestine parachronic capabilities intended for covert exploration, weapon testing, outtime exploitation, or even war. The I-Cops often run into highly trained agents who they *know* are from Homeline. Sometimes they can even prove it.

Projectors can also be built secretly, but no one seems to have done so on Homeline yet – again, giving rise to speculation that Infinity has detection methods it isn't revealing. So far, no projector built off of Homeline has worked.

Research Foundations

The infinite worlds are fertile ground for scientific research. Scientists can study totally unspoiled biomes . . . or worlds that have been utterly destroyed by dozens of different disasters. Infinity permits almost any kind of *nondestructive* research. It would probably allow a little scientific destructiveness, too, if an artfully written proposal were to make the gains seem great enough.

Most research, by far, has been historical and social. The historical parallels offer answers to countless intriguing "what if" questions, and the echoes offer – or at least *seem* to offer – a window into Homeline's own past! Many expeditions are mounted to such worlds, to observe and to learn. These are bound by strict rules: they must keep The Secret of parallel worlds hidden, and they cannot change the history of the echoes, lest they be "lost" to a timeline shift (see *Timeline Shifts*, p. 544).

Crosstime Bounty Hunters

"Richard Z. Horn. Under arrest for a billion-dollar computer fraud, he jumped bail, hijacked a Time Truckers, Inc. conveyor, and **disappeared** on Cornwallis. The I-Cops found the abandoned conveyor, but after spending a week searching, they gave up looking for Horn – said he was no threat. But there's a $1,000,000 bounty on Horn, and a reward from Time Truckers as well. I was determined to collect both . . ."

There are a lot of places for a fugitive to hide among the hundreds of known parallel worlds. The I-Cops go after anyone who is a threat to security or the stability of an echo, but they lack the manpower to chase down anyone who doesn't pose a clear and present threat to Infinity's hegemony. The crosstime divisions of agencies like the FBI handle some of these cases. Freelance bounty hunters pick up many of the others.

Getting a crosstime bounty-hunting license from Infinity requires a careful background check and appropriate experience (being ex-Patrol helps; a good employment history with a reputable crosstime company like Time Tours is also a plus). Some bounty hunters work alone; others work for private agencies, the largest and most successful of which is Infinite Justice, based in Indiana.

Corporations

Crosstime exploitation can be *highly* profitable. Numerous businesses operate from Homeline.

Goods that are cheap on Homeline are often valuable elsewhere, and vice versa.

White Star Trading

Founded by Paul Van Zandt, White Star is the original interworld trading company – and probably the largest. Van Zandt financed most of his original development by trading back and forth with a single world.

Today, White Star has offices in hundreds of dimensions, always disguised as ordinary businesses. Some are small, handling a few hundred pounds of rare commodities a day; for example, a crate of new-release CDs from Holly, or a breeding pair of passenger pigeons. Others ship hundreds of tons of grain or ore daily, loading the cargo onto barges that go out of sight of land and then jump between worlds.

White Star was formerly part of Infinity, but antitrust considerations (and competitors' objections) led to its becoming legally and financially distinct. It still has a "cozy" relationship with Infinity, which makes many of its smaller competitors unhappy.

Other Traders

Many corporations of all sizes are getting rich through cross-world trading. Goods that are cheap on Homeline are often valuable elsewhere, and vice versa. As always, though, The Secret must be kept.

When a new timeline is opened up, the traders' agents are the first in, looking for new goods and new markets. Some are unscrupulous, dealing even in slaves and drugs; others are the best allies the Patrol has.

White Star dominates the interworld trading scene, but there is so much business that there's no need to hog it all. One of the largest corporations involved is Time Truckers, Inc., whose trained conveyor operators hire out to various businesses.

Time Tours, Ltd.

"If it's Tuesday, this must be 1066."

Time Tours is by far the best known of the "independent" companies using parachronic technology. Its business is sending groups of tourists on exciting expeditions into parallel timelines. The goal is not always pure sightseeing: one popular trip is the Dinosaur Safari, the ultimate challenge for hunters looking for *really* big game. The Patrol runs an official "customs check" when each tour returns, but unless the outtime world is known to contain some specific danger, this is mostly a formality.

Working for Time Tours can be challenging. Employees must organize, equip, and lead expeditions to many different timelines. The job includes keeping the tourists out of trouble . . . tourists who all too often can't manage the clothing or the language, and who will walk right into the Charge of the Light Brigade to get a good snapshot for the folks back home. As a result, Time Tours reserves the right to do whatever is needed – up to and including aborting the trip with no refund – to prevent "cultural contamination," or to correct it once it has occurred.

Keeping the Secret

Infinity and Centrum may be enemies, but there is one thing they agree on: the secret of parachronic technology must remain their monopoly. An "outtimer" who learns this secret – *The* Secret – must be hired, discredited, or made to vanish.

It's reasonable to expect highly trained Infinity personnel to keep the secret of parachronic travel; indeed, operatives likely to contact outtimers have prepared cover stories that fit local belief systems. If possible, anything that might reveal The Secret will be explained away as a mundane event – but if not, it's better the locals think they saw witches, fairies, or UFOs than get any inkling that humans with advanced technology are traveling across dimensions.

On the other hand, when a herd of *tourists* goes charging off into a parallel, there's a strong likelihood that somebody will let something slip . . .

Eraser

When outtimers see visitors appear or disappear, or witness some use of Homeline technology, the preferred solution is to make them forget. "Eraser" is a sedative and amnestic drug used by both Infinity and Centrum. A recipient must make a HT-3 roll to avoid its effects. On a failure, he falls unconscious. On awakening, his short-term memories – everything in the last 5d+45 minutes – are gone. Eraser comes in pill, injection, and gas form. It appears to have no untoward side effects, even in massive overdoses. The Infinity Patrol issues it to I-Cops and to civilian security personnel or guides engaged in authorized crosstime operations. It is not for sale at any price; authorized users must account for every dose acquired and used. Still, it turns up on the black market at an average price of $500 per dose. LC2.

Extreme Measures

When someone has seen too much and Eraser won't solve the problem, and he isn't a good subject for recruitment, troubleshooters are called in to deal with the security leak. Measures can range from dirty tricks intended to discredit the subject or change his perceptions, to commando raids aimed at eliminating all the witnesses and destroying all hard evidence. But where Centrum might kill, Infinity prefers to make the witness vanish. He is kidnapped . . . and taken to Coventry.

Coventry

Coventry is a Quantum 3 alternate in which humanity didn't develop. It has one important and useful peculiarity: unassisted conveyors can't enter or leave it – and neither can world-jumpers. And nobody knows why. This means the *only* access to Coventry is by projector-assisted conveyor from Homeline.

The I-Cops use Coventry to isolate people who Know Too Much: outtimers who stumbled onto a Homeline operation; Homeliners who broke regulations; scientists abducted from other timelines because the Patrol feared they were too close to developing parachronic technology; and even disgruntled ex-employees of Infinity! The population also includes some voluntary settlers, rescued from crosstime disasters.

All sorts of adventures are possible on Coventry . . . including a rescue attempt from within Infinity, by employees who are morally opposed to the whole concept. The world itself is a pastoral TL4, with TL8 medicine.

Ethical Problems

It would not be unfair to conclude that Infinity and Centrum regard outtimers – as a group, if not as individuals – as something less than "real" people with human rights. Infinity's PR department does its best to downplay this perception, but every time the I-Cops cart some outtimer off to Coventry, they send the message that Homeline is somehow "superior." And every time a filmmaker creates a historical epic by recording the bloody deaths of thousands of people in an outtime war, he reinforces the idea that the residents of other timelines are puppets for Homeline's entertainment.

Time Tours has competitors, but they're not different – just smaller and often shoddier. And some other companies offer vacations rather than tours. They emphasize luxury over excitement. Johnson's Rome (p. 527) is the best known of these.

Mining Companies

Many huge operations exist solely to wrest mineral wealth from uninhabited timelines. Most mining leases granted by Infinity are for otherwise-worthless worlds, many of which are uninhabitable without artificial aid. But there's a great deal of wealth to be had . . . and greedy miners have secretly raped several *habitable* timelines.

Waste-Disposal Companies

Radioactive waste, toxins, biohazards, and other noxious brews too foul to stay on an inhabited planet . . . don't have to. Infinity only permits waste dumping on genuine hell worlds – worlds that really *can't* get any worse – and requires disposal companies to take every precaution to ensure that wastes get to the projector site in complete safety.

The Very Rich

A very few, *very* wealthy individuals own conveyors for hobby purposes. Most of these people are glorified tourists or collectors, but there is the occasional sybarite who enjoys playing power games in "backward" settings. Their conveyor crews are all Infinity employees – which theoretically prevents the most flagrant abuses.

Crosstime Colonies

Infinity has opened several beautiful but empty worlds for colonization. Some companies have leased such worlds and sublet them to pioneers.

Several governments have sponsored colony worlds, too. Most such colonies are simply outlets for excess population, but some – five sponsored by the United States, three by the United Kingdom, and one each by France and Japan – are deliberate attempts to establish alternative societies. One, Uhuru, even declared its independence from the United States and made it stick.

There are also "secret" bases and colonies, sponsored by governments, corporations, and other organizations with clandestine conveyors. Some are hidden away on known timelines; others are on worlds as yet unknown to Infinity. A few have special purposes (mining, trading, research, etc.), but many are just groups of people trying to get away from it all.

Colonies vary from TL4 to fully modern.

The Manor Worlds

A few very wealthy lovers of nature – or privacy – live on the "manor" worlds, each of which is divided up into a few thousand private estates. If you're wealthy enough to buy or lease a private conveyor, you can have your own private Hawaii, or Ozarks, or St. Tropez, or Jamaica . . . with an instant commute, by conveyor, to Homeline!

Adversaries

Infinity is Homeline's chief guardian against outtime threats. As far as most Homeliners know, the only such menace is the rival world-jumping culture of Centrum. Actually, there are many *other* dangers out there . . . but Infinity keeps them secret to avoid causing panic on Homeline.

Centrum

Centrum is the only known human timeline other than Homeline to independently develop parachronic technology. It is also Homeline's fiercest enemy. Centran agents intrigue against the Infinity Patrol across the dimensions, and will settle for nothing less than total domination of the infinite worlds.

Centrum is a world government descended from a united Anglo-French Empire. One of the last historical figures to exist in both worlds was Eleanor of Aquitaine, who either created or stabilized the Empire and ruled it for over 20 years. The Empire grew and expanded, dominating Europe before 1700, Africa and Asia before 1850. The New World was colonized in an orderly fashion; the Indian tribes were enslaved or destroyed.

In 1902, the Empire collapsed in a worldwide civil war; the aristocracy had become decadent, and with nothing left to conquer, they turned on each other. Members of the technical and military class likely engineered the war. Educated, trusted, and trained to serve, they had grown contemptuous of their titled masters – and when they restored world government 50 years later, it was stamped in their image: a tightly-organized meritocracy called "the Centrum."

Centrum's rulers value science, order, and power for its own sake. Children are constantly tested and retested, and all training and promotion is based on talent and achievement.

Philosophically, the key difference between Centrum and Infinity is in their treatment of inhabited worlds. Centrum wishes to bring all worlds under its central control, creating a single transworld state whose boundaries span the dimensions. The Centran approach to conquest is to infiltrate a world, overthrow its government as inexpensively as possible, and take over – and then advance its technology and send its leading citizens to Centrum for education and indoctrination. After a probationary period, outtimers can eventually hope to become citizens of Centrum itself, although no world is currently judged "ready."

Centrum is a mid-TL8 society. Like Homeline, it developed parachronics a few decades ago.

Language

The native Centran language is a heavily accented dialect of English. Centrum wiped out all other languages on its own world two generations ago. Until recently, they did not even have any trained linguists . . . because they didn't need them!

All this puts Centrum at a *great* handicap in penetrating worlds or areas where the language is unlike English. They are currently experimenting with methods of teaching language quickly – but right now, any fluent speaker of, for instance, Japanese is certainly not a native Centran.

Interworld

This is the Centran equivalent to the Infinity Patrol. As an arm of a world government, Interworld is larger and more ruthless than the Patrol. It *might* even have a better grasp of parachronic science.

Almost without exception, Interworld agents are fanatically loyal to Centrum. They are also quite likely to have bionic implants – Centrum itself is fabulously wealthy, and can equip individual agents well. They kill mercilessly if necessary, but they respect talent, and often try to recruit talented outtimers. They have normal human feelings of loyalty toward friends, desire to protect children, and so on. They are not monsters or machines.

Crosstime Conflict

Centrum is on Quantum 8, while Homeline is on Q5. Since it's possible to jump one quantum easily and two with difficulty, Centrum's territories "overlap" Homeline's at Q6 (which Homeline can reach more easily) and Q7 (where Centrum has the advantage).

One might think that would provide a natural border. Unfortunately, it doesn't work that way. For one thing, Centrum is *aggressive*. For another, Q6 appears to have more usable worlds than all the other quanta put together (nobody knows why).

Centrum seems to have had crosstime travel for longer than Homeline, but initially used it mainly to enter empty worlds for resources. Their mastery of parachronic mathematics is definitely better than Homeline's. They can apparently detect whether a timeline is unstable, and plan an intervention to push it in the direction they want; see *Timeline Shifts* (p. 544). Homeline's scientists have not yet figured out how to do that – or at least, Infinity isn't admitting it.

Homeline became aware of Centrum's existence nine years ago, when an intruder was captured in one of Infinity's most secret labs. He told a very strange story under truth serum! Infinity released that first agent with an offer of friendship. Centrum immediately accepted, with apologies for their earlier penetration of Infinity's territory. But it quickly became obvious that their "friendship" was entirely treacherous; they didn't have enough experience in true cooperation to fake it believably. Eight years ago, they "stole" four timelines from Q6! A year later, the "infinity war" was a reality.

Apparently, Centrum does not have "historical echoes" of the sort Homeline does . . . or, if such echoes exist, they are in a quantum unreachable from Homeline. This deprives Infinity of a possible source of insight into Centran psychology.

Interestingly, Centrum seems to be at the exact same "time," measured by the stars, that Homeline is. Is this connected with the fact that it is the only known timeline, other than Homeline, that can support a parachronic projector? Nobody knows.

Crosstime Bandits

In the past five years, Infinity has shut down a dozen criminal crosstime operations. There are almost certainly many more.

The Men Who Would Be King: There is a steady stream of megalomaniacs who try to use advanced technology or historical knowledge to seize a position of power in another timeline. To discover them, the Patrol uses the same surveillance methods it uses to catch Centran agents. Indeed, it can be difficult to determine quickly whether infiltrators are Homeline adventurers or Centran operatives!

Time Raiders: Criminals who are just in it for the money – whether they're after crown jewels, the Mona Lisa, or a nuclear warhead – are harder to catch. The most subtle raiders strike an echo and grab the loot just before it was lost "in history," in an effort to avoid triggering timeline shifts that would bring the Patrol down on them. "Theft to order" for wealthy private collectors is where the steady money is . . . but everything from intellectual property theft to arms smuggling can be lucrative.

Illegal Immigration and Crosstime Slavery: This is a growing problem. Need cheap labor? Find a suitable dimension, hire a conveyor-load of would-be illegal immigrants, and take them crosstime instead of cross-border. If they go to the authorities, they'll be sent to Coventry, so they'll accept cheap wages in exchange for the promise of earning enough to buy false citizenship papers . . . Criminal organizations import everyone from prostitutes to soldiers to nuclear physicists. And sometimes blackmail isn't needed: "rescue" a platoon of Nazi soldiers from an echo's Stalingrad and they may be eager to serve as your loyal mercenaries. There's also a scary black market in famous movie stars, singers, and beauties. Only last month, agents of the Italian *Gruppo di Intervento Speciale* rescued a kidnapped Helen of Troy from a members-only brothel.

Replacements: Duplicates ("dupes") of many Homeline residents exist on close parallels like Earth-Beta. There have been cases where Homeliners have paid to have dead children, old lovers, or archenemies snatched from these worlds. In a few cases, the Homeline original was killed and replaced by a dupe. A typical scam: If Mr. Johnson is a millionaire businessman in Homeline but a homeless bum who lost everything in a market crash in Earth-Beta, the Mafia might grab Beta's Johnson and offer him a deal to replace Homeline's Johnson . . . as their comfortable puppet.

Reality Liberation Force

The RLF is a Homeline-based guerrilla organization that opposes the U.N. Interworld Council's "undemocratic and unjust hegemony and exploitation of other timelines." The RLF calls for an end to crosstime travel except for peaceful scientific purposes.

The RLF has wide popular support. Several mainstream groups, notably People Against Crosstime Exploitation (PACE), serve as RLF front organizations. The RLF also has many sympathizers in political and military circles – although most resent the Council, which they feel has usurped their authority, more than they oppose crosstime travel.

The Cabal: Masters of Infinity

A disturbing number of the magicians, psychics, parachronozoids (see p. 544), and supernatural entities that Infinity operatives encounter claim to have knowledge of a vast paranormal brotherhood known as "the Cabal." To hear them tell it, the Cabal has lurked in the shadows for millennia, manipulating events across the infinite worlds through secret societies and occult conspiracies. Which Earth (or Earths!) the Cabal calls home is one of the most perplexing – and potentially unpleasant – conundrums Infinity faces.

A particularly unsettling aspect of these rumors is their consistent claim that the Cabal has access to "higher dimensions of being," somehow "above" the infinite worlds, known as the Astral Realm, the Iconic Realm, and the Realm of Pure Spirit. Cabal members are said to cross these realms and the infinite worlds in search of arcane knowledge.

Perhaps most frightening of all, the Cabal is reputedly *fractured*. Renegade archmages and demon lords supposedly fight secret wars, with the infinite worlds as their pawns and battlefields. The losers become exiles, often bent on conquering parallel Earths beyond the Cabal's reach, where they can amass power and plot vengeance . . .

Reich-5

Reich-5, on Quantum 3, was the fifth "Nazi victory" parallel discovered by Infinity. It is presently in its year 2010, ruled by a brutally efficient world government dominated by Germany, Japan, and a Nazified United States. It is TL8 in most respects, but advanced in space technology and a twisted form of genetics – and possibly in psionic technology.

Naturally, Infinity strictly prohibited travel to this world, and hid its existence in order to prevent it from acquiring The Secret. But after a decade of containment, the unthinkable happened: Nazi parapsychologists in the SS-controlled province of Burgundy discovered a psionic world-jumper (or captured such a visitor from another timeline – Infinity isn't sure which) and gained expertise in harnessing and exploiting the power.

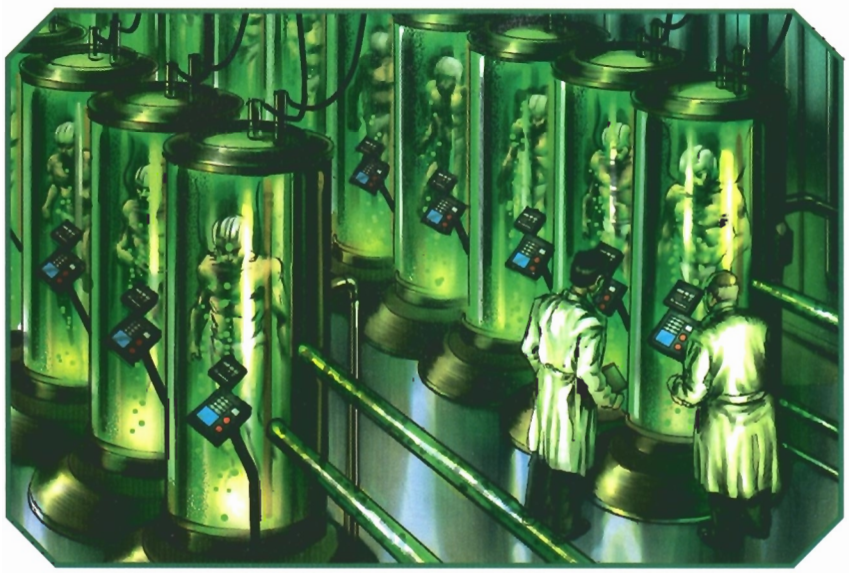
By the time Infinity learned of this, the Nazis had approximately two-dozen world-jumpers, of highly variable power and reliability (several had to use dangerous cocktails of drugs to unlock their powers), and were creating more through selective breeding, cloning, and bio-psionic technology. Worse, working in concert and using experimental psibernetic linkages, it seemed that some of these world-jumpers were able to transport loads of four or five times their own weight – sufficient to move squads of troops and even small armored vehicles.

Reich-5 soon began its first crosstime invasion: an infiltration of Nostradamus, a post-apocalyptic world where prophecy shaped reality. That the locals foresaw the invaders' coming did them little good; in fact, it reinforced the conquerors' sense of destiny. And matters only got worse.

Nostradamus proved to be at the junction of a "dimensional road" which the Nazi world-jumpers were able to detect and exploit. This road, which the Nazis call the "chronobahn," seems to span at least half a dozen dimensions as it wavers in and out of existence . . . And the Nazis *have* begun to explore it. They can still only shift small loads at some risk, but they may be learning more.

Reich-5 lags far behind Centrum and Homeline in parachronic theory – a weakness that is compounded by the fact that all of its researchers are highly eccentric "Aryan mystics" who seem intent on keeping secrets from the "materialists" in Berlin. Hence, Infinity has not yet activated contingency plans – for instance, to transport nuclear warheads to known Reich-5 military bases and government centers – and is instead focusing its efforts on destabilizing the regime. In any case, the "transdimensional SS" are *already* scattered across bases in an unknown number of dimensions.

As Infinity is slowly realizing, Reich-5 has the potential to dominate all of Quantum 3 – and perhaps move beyond, especially if it finds allies.



Parachronozoids

The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down a very deep well.

– *Alice's Adventures in Wonderland,* Lewis Carroll

"Parachronozoids" are creatures with natural world-jumping abilities. There is a wide variety of them, native to different dimensions. Some resemble ordinary or talking animals, such as white rabbits, beautiful stags, or black horses. Others are mystical. And a few are terrible, semi-material horrors that man was not meant to know.

All parachronozoids possess the Jumper (World) advantage (p. 64). Most have the Tunnel enhancement, allowing them to create interdimensional paths that can be followed. Of course, these paths close behind them after a time, with no guarantee that they will ever open again. This can have dire consequences for the unwary. For example, a hunter sees a beautiful white stag and gives chase, and as he follows, the world gradually fades away . . . and then the stag vanishes, leaving him stranded in another world!

Many parachronozoids also have the Warp advantage (p. 97), giving them the ability to jump across space as well as the dimensions.

Some parachronozoids seem drawn to those with latent or active psionic abilities (most often ESP or Teleportation). Others seek mana-rich areas, and there are rumors of ways to magically summon or lure them. Certainly, wizards have trapped and tamed such entities, using them as mounts or harnessing them to create world-jumping chariots.

And some are predators and vampires, stalking prey from dimension to dimension . . .

World-Jumpers

A "world-jumper" is anyone who possesses the Jumper (World) advantage (p. 64). This ability *seems* to be "psionic" . . . but nobody knows for sure.

Infinity has several people with this ability on its payroll, and is always on the lookout for more. Only a few are native to Homeline. At least one of them claims to have visited alternate worlds before Van Zandt did . . . and kept it quiet, because he thought he was insane. Infinity's world-jumpers are top couriers, special agents, and troubleshooters. Most observers believe Centrum has world-jumpers as well.

In Infinite Worlds, Jumper (World) functions normally for jumps within the same quantum. Jumps between quanta are at -5 per quantum level of difference. Those who have this trait always know by "feel" what quantum they are on.

Timeline Shifts

Of the 379 timelines Infinity knows of in Quantum 6, 281 are "historical echoes": worlds apparently identical to Homeline at earlier points in its history. No "future" echoes are known – although there *are* parallel worlds with higher technology or more advanced local dates. No echoes are known on any quantum except Q6.

Why is Homeline "reflected" so many times in another quantum? Nobody knows. The echoes are irregularly spaced through history. There are few echoes before 3000 B.C. and none before 12,000 B.C. Some periods have several echoes; a few have none.

In *all* of the echoes, time is flowing more slowly than on Homeline – but the difference is so slight (a *maximum* of one year of difference for every 250,000 years that pass) as to be almost unnoticeable. Nevertheless, this slight deviation would explain the differences, if the original "event" that created the echoes occurred some 3.5 billion years ago – perhaps during the earliest appearance of life on Earth.

The echoes represent an incredible opportunity for research into history . . . but they also represent a significant hazard. Anyone visiting an echo is carefully cautioned against doing anything that might make a significant change in the timeline. This has nothing to do with ethics. It's a question of safety. The balance that holds the echoes in Q6 is a fragile one. If something happens to change the future course of history in an echo, it may simply vanish! The first few times this happened, it was thought that the world had been destroyed. But as Infinity was on the verge of shutting down all travel to the echoes, one of the lost worlds was rediscovered . . . in Q5!

Centrum seems to be able to instigate such shifts on purpose. Of the 24 echoes that have vanished from Q6 since Infinity discovered them, four are known to have moved "closer" to Homeline, going to Q5. Eleven are known to have moved to Q7, nearer to Centrum . . . and Centrum *deliberately* engineered at least six of these shifts. One bounced all the way to Q4, on the "other side" of Homeline. And eight of the missing timelines haven't been found at all.

Infinity regulations require that any visit to an echo be managed with extreme care – no casual or "tourist" trips are allowed. The I-Cops are

always alert for signs of Centrum's intervention. But they can't simply flood the echoes with agents – doing that would greatly increase the risk of instigating the very changes they want to avoid! Instead, they rely on strategically placed agents and regular patrols.

Centran Intervention

Centrum has intervened several times, in increasingly sophisticated ways, to try to move echoes "closer" to Q8. It is clear that Centrum has some method of predicting what sorts of changes will produce the desired effect.

However, Centrum's predictions are not infallible. In at least four timelines, massive Centran interventions seemed to have had no effect at all; these timelines appear to be "held in place" by something other than their similarity to Homeline (see *Anchors*, p. 526).

If Centrum *does* manage to pull off an intervention, the GM should decide how long it takes to come into effect. A shift may take hours or days to occur – it is never instant – and the Centran agents must stay in place throughout, in order to protect their work! Even then, it might be possible to reverse the shift by counteracting the effects of the intervention. As a result, once Centrum manages to shift a Q6 timeline to Q7 or Q8, Interworld agents attempt to eradicate *all* Homeline personnel. Such an attack is more likely to be covert than overt.

Examples of Centrum's Intervention

Successful interventions by Centrum include:

The atomic destruction of London in the year 1902. The first and last time Centrum attempted any such gross attack. It became a political issue among Centran leadership; the parties responsible were removed from power. Such extreme intervention is not generally effective in any event – the results are too unpredictable.

The execution of Princess Elizabeth in 1554, before she ascended the throne. Apparently, her sister Mary was influenced against her.

The sinking of ***HMS Beagle*** *with all hands in early 1833.* Charles Darwin was among those lost. This timeline did not "vanish" until late 1837, though.

The sabotage of Yuri Gagarin's space capsule in 1960. This triggered a round of witch-hunts and accusations within the Russian space program that eventually spilled over into the Strategic Rocket Forces and dangerously weakened Khrushchev's hold on power. This instability in the Kremlin may have contributed to the Cuba Incident of 1962, in the aftermath of which the U.S. and U.K. were able to enforce U.N. control over Soviet missile and space programs. This worldline migrated to Q8 shortly thereafter.

Long-Term Intervention

Infinity is concerned about the possibility of *very long-term* interventions. For instance, if a pivotal figure like Alexander the Great or Karl Marx were murdered as a child, no historical differences would show up for

Mysteries

Homeline's understanding of the infinite worlds is hardly perfect. Situations that "break the rules" can be springboards for adventure! Two examples:

Boojum: **A perfectly ordinary timeline – *not* an echo and *not* on Q6 – vanishes. Four months later, it reappears. Six months later, it vanishes again. So . . .** *something* can quantum-shift an ordinary timeline. Or maybe this timeline isn't ordinary! Either way, the Homeliners on Boojum are in a panic, as are the administrators and researchers at Infinity.

Centrum Beta: A newly penetrated Q7 timeline seems to be exactly like Homeline researchers *think* the world of Centrum was in the year 1895. Could it be an echo? Even an ordinary parallel would be interesting. Either way, why is it the only one they've ever found? And remember, Q7 is more accessible to Centrum than it is to Homeline; there are almost certainly Centran agents here!

years . . . but when they appeared, they would be huge. Possibly, Centrum can't compute the effects of such interventions – or perhaps, if echoes exist in part because of human culture, only a large and *sudden* shift in popular attitudes can effect a change. It could be that if a key individual is removed prematurely, someone else will appear to take his role in history. Thus, removing Hitler well before his rise to prominence might only result in a similar dictator appearing, with little change in events. Parachronic intervention is still an art rather than a science.

Intervention Adventures

Trying to stop a Centran intervention on an echo makes an excellent adventure for a PC team of I-Cops. The GM can make the following assumptions:

- The enemy agents are outnumbered and secretive. It is difficult and expensive to send anyone from Centrum to Quantum 6.
- The enemy plan requires split-second timing . . . because, if it didn't, they would have pulled it off already. Whatever the Centran method of computing an intervention, if the answer were always as simple as "Nuke London in 1902," they'd succeed a lot more often. However, the enemy *does* have backup plans.
- The Patrol gives the agents some general information about the enemy penetration. The means by which their superiors acquired this data is none of their business! They are simply told, for instance, "It's 1453 on echo Sigma-6A. There's evidence of Centrum penetration in Germany. If they're working close to home, their target might be Gutenberg's printing press . . . other teams are checking out other possibilities." That's one reason why counter-intervention teams are small: Homeline has to check out *everything*.

Intervention in Reverse

The GM can turn the whole thing around: Infinity has unraveled the secret of timeline intervention, discovered a string of Centran echoes in Quantum 7, and sent out strike teams to shift them toward Q5. Just work it all in reverse. The Homeline team has a specific assignment – something the computers predict will shift the timeline in a useful fashion if carried out successfully. The Centran opposition consists of lots of small teams . . . and if the Homeliners put one out of the way in too obvious a fashion, it tips off Interworld, who will reinforce the area very heavily.

Effects of Tampering with Echoes

It takes a *significant* change to cause a whole timeline to "move" to a different quantum level. A "significant" change is up to the GM, because nobody *knows* what kind of change is really significant. The mere presence of a group of strangers doesn't seem to make much difference. But there's always the chance of hitting a key moment in history: the visitor to reflected 1938 Washington gets the last seat on a train, so a senator is late to a meeting with the President, so a key military appropriation fails . . . so when World War II comes along, the United States loses.

In general, if a change seems like it can lead to a distinct "what if" variation in history, it's significant. However, a shift need not be permanent. One timeline was shifted to Q7 by Centrum aid to Benedict Arnold in 1780, turning the Revolutionary War in England's favor. An intrepid team of I-Cops in the cut-off world sabotaged the British fleet off Boston, turning the war around again . . . and the timeline returned to Q6! It appears that history is sufficiently "elastic" to absorb a deviation – if it can be exactly counterbalanced before too much time has passed.

For game purposes, assume that very minor changes do not create a shift – or, at least, not immediately. If outtimers do something that the GM thinks may "change history," he can allow a shift to happen in minutes or days. A shift is usually only one quantum, but can possibly be more. Choose the *direction* of a shift randomly, unless it was caused by agents in accordance with a specific plan designed around a correct understanding of how parachronics interact with history.

Locating a Shifted Timeline

Only Infinity and Centrum possess the sophisticated instruments and supercomputers needed to locate a lost timeline *quickly*. Such a search requires a full week of work and a successful Physics (Parachronic) roll. This roll is at +3 if the timeline is in the researchers' "home" quantum, at +1 if it's in an adjacent quantum, and at no modifier if it's two quanta away. If it's three or more quanta away, it can't be found!

With lesser equipment, the search takes weeks to years (GM's option) – possibly at a large penalty.

Marooned!

If a timeline shift takes the world you are on out of projector range (Q3-Q7 for Homeline; Q6-Q10 for Centrum), you're stuck! You have two options: try to undo the shift, or find alternate means of transportation (enemy conveyor, friendly world-jumper, etc.).

There are other ways to become stranded, including:

Quantum Sargasso: A "quantum sargasso" is a dimension that a world-jumper or conveyor can *enter* but not *leave*. A projector can focus on it, but it can't make pickup. The only way out is to find a nexus portal (p. 534) or use magic (e.g., Plane Shift, p. 248).

No Mana: There are worlds where magic simply *doesn't work*. A magical world-jumper, Plane Shift spell, etc. lets you enter these dimensions, but won't let you leave!

Appendix

Tables

Combat Modifiers

These three lists summarize the success rolls and modifiers used to attack and defend.

Melee Attack Modifiers

When attacking in melee combat, figure your *effective skill* by:

1. Taking your base skill with the weapon or unarmed attack you are using. (In some situations, another skill – e.g., Free Fall, Riding, or Environment Suit – will limit this skill.)

2. Applying the relevant conditional modifiers below. Modifiers are cumulative, but combined *visibility* penalties cannot exceed -10 (-6, if used to blindness). If *any* modifier marked with an asterisk (*) applies, adjusted skill after all modifiers cannot exceed 9.

A roll of this number, or less, is a hit.

Attacker's Maneuver

All-Out Attack (Determined): +4
Move and Attack: -4*

Attacker's Posture

Crawling or lying down: -4 (if crawling, can only make reach "C" attacks)
Crouching, kneeling, or sitting: -2

Attacker's Situation

Affliction (coughing, retching, etc.): see *Afflictions* (p. 428)
Bad footing: -2 or more (GM's option)
Grappled: -4
Holding a large shield: -2
Major distraction (e.g., all clothes on fire): -3 or more (GM's option)
Minor distraction (e.g., part of clothes on fire): -2
Mounted, and mount attacked on its last turn: -2
Mounted, and mount's velocity relative to target is 7+: -1
Shock: -HP of injury received last turn (maximum -4)
ST below that required for weapon: -1 per point of deficit
Wearing a shield in close combat: -DB of shield

Target (choose *one*)

Hit location: 0 for torso, -2 for arm or leg, -3 for groin, -4 for hand or foot, -5 for face, -7 for skull; *impaling* and *piercing* attacks can target vitals at -3 or eyes at -9
Hit location, through chink in armor: -8 for torso, -10 anywhere else (e.g., eyeslits)
Weapon, to *damage:* -5 to hit a reach "C" weapon (e.g., knife) or pistol; -4 to hit a reach 1 weapon (e.g., broadsword); -3 to hit a reach 2+ weapon (e.g., spear) or rifle

Violence, naked force, has settled more issues in history than has any other factor, and the contrary opinion is wishful thinking at its worst.

– Robert A. Heinlein

Other Actions by Attacker

Deceptive Attack: -2 per -1 penalty to foe's defense
Dual-Weapon Attack: -4/-8 with primary/off hand (-4/-4 w. Ambidexterity)
Evaluate: +1 per turn (maximum +3)
Off-hand attack: -4 (no penalty w. Ambidexterity)
Rapid Strike: -6 on both attacks (-3 w. Trained By A Master or Weapon Master)
Striking into close combat: -2
Wild Swing: -5*
Weapon, to *disarm:* as above, plus an extra -2 if not using a fencing weapon

Visibility

Cannot see *anything:* -10 (-6, if used to blindness)*
Cannot see foe: -6, or -4 if you know his location to within 1 yard*
Partial darkness, fog, smoke, etc.: -1 to -9 (GM's option)

Ranged Attack Modifiers

When making a ranged attack, figure your *effective skill* by:

1. Taking your base skill with your ranged weapon.

2. Applying the target's Size Modifier (SM).

3. Modifying for the target's range and speed; see *Size and Speed/Range Table* (p. 550).

4. Applying the relevant conditional modifiers below. Modifiers are cumulative, but combined *visibility* penalties cannot exceed -10. If *any* modifier marked with an asterisk (*) applies, adjusted skill after all modifiers cannot exceed 9.

A roll of this number, or less, is a hit. If using rapid fire, you score one *extra* hit for every *full* multiple of Recoil by which you make your attack roll.

Attacker's Maneuver

All-Out Attack (Determined): +1

Move and Attack: -2 or -Bulk of weapon, whichever is *worse*

Attacker's Situation

Affliction (coughing, retching, etc.): see *Afflictions* (p. 428)

Bad footing: -2 or more (GM's option)

Close combat: a penalty equal to the weapon's Bulk statistic (see *Weapons for Close Combat*, p. 391)

Damaged weapon: -HP of injury received last turn (maximum -4)

Major distraction (e.g., all clothes on fire): -3 or more (GM's option)

Minor distraction (e.g., part of clothes on fire): -2

Shock: -HP of injury received last turn (maximum -4)

ST below that required for weapon: -1 per point of deficit

Attacking from Moving Vehicle or Mount

If weapon is *not* in a stabilized mount, the combined bonus for Accuracy, Aim, bracing, and targeting systems cannot exceed the vehicle's SR.

Air vehicle: -1 if handheld weapon, 0 otherwise

Exposed rider hanging on side of vehicle/mount and shooting over/under it: -6

Ground vehicle, good road: -1 if handheld weapon, 0 otherwise

Ground vehicle, bad road: 0 if stabilized turret or stabilized open mount; -1 if fixed mount, hardpoint, or carriage; -2 if external open mount; -3 if handheld weapon

Ground vehicle, off-road: -1 if stabilized turret or stabilized open mount; -2 if fixed mount, hardpoint, or carriage; -3 if external open mount; -4 if handheld weapon

Space vehicle: 0

Turning in exposed saddle/seat of vehicle/mount to fire at foe behind: -4

Vehicle/mount dodged last turn and you're not operator/rider: -2, or -4 if flying

Vehicle/mount failed control roll: penalty equal to margin of failure

Water vehicle, calm water: 0 if stabilized turret or stabilized open mount; -1 if fixed mount, hardpoint, or carriage; -2 if external open mount; -3 if handheld weapon

Water vehicle, rough water: -1 if stabilized turret or stabilized open mount; -2 if fixed mount, hardpoint, or carriage; -3 if external open mount; -4 if handheld weapon

Opportunity Fire

Checking target before firing: -2

Hexes watched: 0 if 1 hex; -1 if 2 hexes; -2 if 3-4 hexes or a line; -3 if 5-6 hexes; -4 if 7-10 hexes; -5 if 11+ hexes watched

Other Actions by Attacker

Aim for one turn: +Accuracy of weapon

Braced weapon: +1 if stationary *and* took a turn to Aim

Dual-Weapon Attack: -4/-8 with primary/off hand (-4/-4 w. Ambidexterity)

Extra Aim: +1 for 2 seconds, +2 for 3+ seconds

Off-hand attack: -4 (no penalty w. Ambidexterity)

Pop-up attack: -2, and no Aim possible

Rapid fire: 0 if 2-4 shots; +1 if 5-8 shots; +2 if 9-12 shots; +3 if 13-16 shots; +4 if 17-24 shots; +5 if 25-49 shots; +6 if 50-99 shots; +7 if 100-199 shots; etc.

Target

To attack hit locations or weapons, use the penalties under *Melee Attack Modifiers* (p. 547). If the target has cover, you can either choose to take no penalty and roll hit location randomly (shots that hit a covered location always strike *full* cover, and hit *partial* cover on 4-6 on 1d) or target an exposed hit location (add an extra -2 if only partly exposed).

Shooting through light cover: -2

Target behind someone else: -4 per intervening figure

Target crouching, kneeling, sitting, or lying down: an *extra* -2 to hit torso, groin, or legs

Target only partly exposed: -2

Targeting Systems

Laser sight: +1

Scope: +1 per second of Aim, to a maximum of the scope's bonus

Vehicular targeting system: +1 to +3 if shooter took a turn to Aim

Unfamiliar weapon or targeting system: -2

Visibility

Blind, target completely invisible, or in total darkness: -10*

Cannot see foe: -6, or -4 if you know his location to within 1 yard*

Partial darkness, fog, smoke, etc.: -1 to -9 (GM's option)

Target has light concealment (e.g., bushes): -2

Active Defense Modifiers

When performing a dodge, block, or parry, figure your active defense roll by:

1. Taking your calculated Dodge, Block, or Parry score. (The Combat Reflexes and Enhanced Defenses advantages increase these values above their base.)

2. Applying the relevant conditional modifiers below. All modifiers are cumulative.

A roll of this number, or less, means you avoid the attack.

Defender's Equipment

Parrying with dagger or knife: -1 to Parry

Parrying with kusari or whip: -2 to Parry

Parrying with quarterstaff: +2 to Parry

Shield or cloak: +DB of shield (see *Shield Table*, p. 287), except vs. firearms

Unarmed parry vs. weapon: -3 to Parry (+0 vs. thrust, or w. Judo or Karate)

Defender's Maneuver

All-Out Attack: no defense possible!

All-Out Defense (Increased Defense): +2 to *one* of Dodge, Block, or Parry

Move and Attack: dodge or block only; you cannot parry

Defender's Posture

Crawling or lying down: -3

Kneeling or sitting: -2

Defender's Situation

Above attacker: +1 if 3' difference, +2 if 4', or +3 if 5'

Affliction (coughing, retching, etc.): see *Afflictions* (p. 428)

Bad footing: -1 or more (GM's option)

Below attacker: -1 if 3' difference, -2 if 4', or -3 if 5'

Can't see attacker: -4, and a block or parry requires a Hearing-2 roll

Close combat: only reach "C" weapons can parry

Distraction (e.g., clothes on fire): -1 or more (GM's option)

Encumbered: penalty equal to encumbrance level to Dodge, or to Judo, Karate, or any fencing Parry

Mounted: penalty equal to difference between 12 and Riding skill (no penalty for Riding at 12+)

Stunned: -4

Nature of Attack

Attack from behind: no defense possible (defense at -2 w. Peripheral Vision)

Attack from side or "runaround" attack: -2 (no penalty w. Peripheral Vision)

Attacker used laser sight: +1 to Dodge if dot is visible

Deceptive Attack: -1 per -2 the attacker took to his attack

Dual-Weapon Attack: -1 if both attacks strike the same target

Flail: -4 to Parry/-2 to Block (-2/-1 vs. nunchaku); fencing weapons can't parry at all

Successful feint: penalty equal to attacker's margin of victory

Thrown weapon: -1 to Parry, or -2 to Parry if *small* (1 lb. or less)

Other Actions by Defender

Acrobatic Dodge: +2 to Dodge if Acrobatics roll succeeds, -2 if it fails

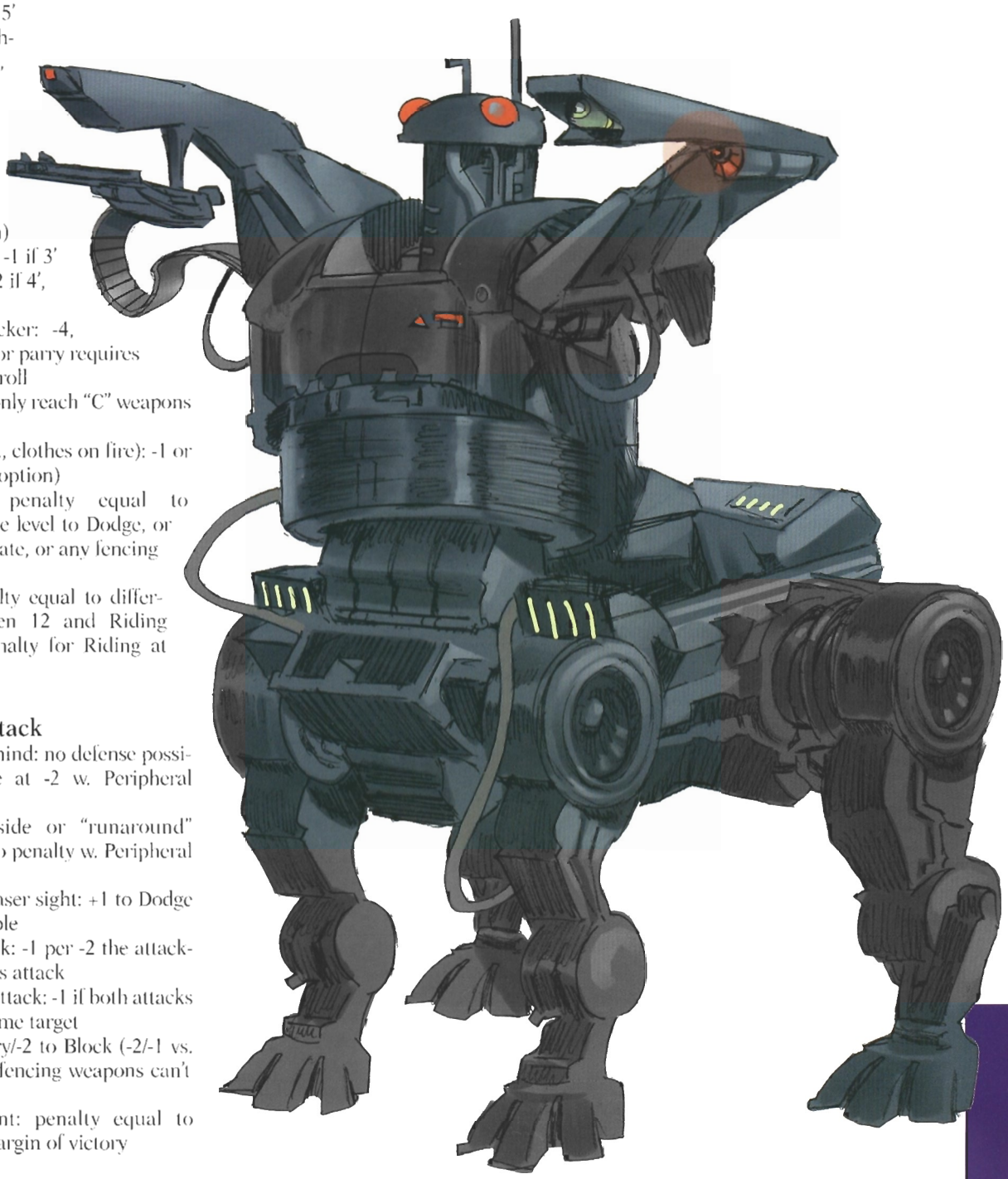
Dodge and Drop: +3 to Dodge vs. *ranged* attack

Feverish Defense: +2 (costs 1 FP)

Multiple parries: -4 to Parry per parry after the first, cumulative (*halved* for fencing weapons, and for Trained By A Master or Weapon Master)

Off-hand parry: -2 to Parry (no penalty w. Ambidexterity)

Retreat: +3 to Dodge, or to Boxing, Judo, Karate, or any fencing Parry; +1 otherwise



Size and Speed/Range Table

The main use for this table is ranged combat, but the GM can also use it for Sense rolls and other success rolls that size, speed, or range might believably affect.

This table uses the same progression for size as it does for the sum of speed and range, but the modifiers for size have the *opposite sign* from those for speed/range: large size give a bonus, while large speed and range give a penalty. Thus, if a target is twice as big but also twice as far away and twice as fast, the net modifier to hit stays the same.

Size of Target

The larger the target, the easier it is to hit. The modifier to hit an object due to its size is its "Size Modifier" (SM). Humans have SM 0. Objects larger than man-sized give a bonus to hit, while smaller objects give a penalty.

The statistics for most nonhuman races, vehicles, etc. include SM. You can find the SM of other things using the table. Simply look up the being or object's longest dimension (e.g., height, for a humanoid) in the "Linear Measurement" column, and then read across to the "Size" column to find SM. If size falls between two values, base SM on the next-highest size.

Box-, sphere-, or blob-shaped objects or characters add +2 to SM; elongated boxes, like most ground vehicles, add +1. If an object is much smaller in *two* of three dimensions (e.g., a steel cable 100 yards long but only 2" thick), use the *smallest* dimension instead of the largest.

Examples: A giant whose longest dimension is 4 yards has SM +2. A car with the same dimensions would have SM +3. A building 4 yards across would have SM +4.

Target's Speed and Range

In most combat between fighters on foot, and when attacking inanimate objects, you can ignore speed. Simply look up range in yards in the "Linear Measurement" column, and then read across to the "Speed/Range" column to find the speed/range modifier. If the range falls between two values, use the higher; e.g., treat 8 yards as 10 yards.

Note that there is no modifier at ranges of 2 yards or less – shooting a close target is no easier (and no *harder*) than attacking it in melee combat!

But for fast targets – including anything that requires the *High-Speed Movement* rules (p. 394) – the GM may rule that speed is important enough to consider. In that case, add speed in yards/second (2 mph = 1 yard/second) to range before looking it up in the "Linear Measurement" column.

Examples: A man 8 yards away is -4 to hit. A motorcycle rider 40 yards away, traveling at 30 yards/second (60 mph), has a speed/range of 40 + 30 = 70 yards, which gives -9 to hit. A missile passing within 5 yards while moving 1,000 yards/second has a speed/range of 5 + 1,000 = 1,005 yards, for -17 to hit.

Size and Speed/Range Table

Speed/Range	*Size*	*Linear Measurement*
0	-15	1/5"
0	-14	1/3"
0	-13	1/2"
0	-12	2/3"
0	-11	1"
0	-10	1.5"
0	-9	2"
0	-8	3"
0	-7	5"
0	-6	8"
0	-5	1 ft
0	-4	1.5 ft
0	-3	2 ft
0	-2	1 yd
0	-1	1.5 yd
0	0	2 yd
-1	+1	3 yd
-2	+2	5 yd
-3	+3	7 yd
-4	+4	10 yd
-5	+5	15 yd
-6	+6	20 yd
-7	+7	30 yd
-8	+8	50 yd
-9	+9	70 yd
-10	+10	100 yd
-11	+11	150 yd
-12	+12	200 yd
-13	+13	300 yd
-14	+14	500 yd
-15	+15	700 yd
-16	+16	1,000 yd
-17	+17	1,500 yd
-18	+18	2,000 yd (1 mile)
-19	+19	3,000 yd
-20	+20	5,000 yd (2.5 miles)
-21	+21	7,000 yd
-22	+22	10,000 yd (5 miles)
-23	+23	15,000 yd
-24	+24	20,000 yd (10 miles)
-25	+25	30,000 yd
-26	+26	50,000 yd (25 miles)
-27	+27	70,000 yd
-28	+28	100,000 yd (50 miles)
-29	+29	150,000 yd
-30	+30	200,000 yd (100 miles)
etc.	etc.	etc.

Continue this progression indefinitely, with each 10× increase in linear measurement giving +6 to SM or -6 to speed/range modifier.

Example: Erin the archer shoots at a dragon. It is 40 yards away and flying at Move 15 (30 mph): 40 + 15 = 55 yards. Erin rounds up to 70 yards, for a speed/range modifier of -9. The dragon is 6 yards long, which rounds up to 7 yards, for SM +3. Erin's final modifier to hit is -6.

By using the *sum* of range and speed, the table ensures that when one of range or speed is large relative to the other, only that factor has a significant impact on the outcome. Small variations in speed are negligible when firing at targets at extreme ranges, and vice versa. If a rocket is moving at 1,000 yards/second, it doesn't really matter whether it's 50 or 100 yards away. If an elephant is 1,000 yards away, it hardly matters whether it is walking at 1 yard/second or 2 yards/second.

Firing Upward and Downward: For every yard of elevation your target has over you, *add* one yard to effective range. For every two yards of elevation you have over your target, *subtract* one yard from effective range; if this would reduce effective range to less than half the real ground distance, use half the ground distance instead.

Sense Rolls: If making a Sense roll, or an Electronics Operation roll for sensors, do not add speed to range. Instead, *subtract* speed from range (but don't reduce it below 0). It is actually *easier* to notice a moving target!

Maneuvers

Taking an active defense may spoil your aim or concentration.

In combat, you may perform one maneuver on your turn. The following table summarizes these maneuvers and their effects.

Maneuver Table

Maneuver	*Description*	*Active Defense*	*Movement*	*Page*
Aim	Aim a ranged weapon to get its Accuracy bonus.	Any*	Step	364
All-Out Attack	Attack at a bonus or multiple times.	None	Half Move	365
All-Out Defense	Increased or double defense.	Any†	Varies	366
Attack	Attack unarmed or with a weapon.	Any	Step	365
Change Posture	Stand up, sit down, etc.	Any	None	364
Concentrate	Focus on a mental task.	Any*	Step	366
Do Nothing	Take no action but recover from stun.	Any‡	None	364
Evaluate	Study a foe prior to a melee attack.	Any	Step	364
Feint	Fake a melee attack.	Any	Step	365
Move and Attack	Move and attack at a penalty.	No Parry	Full Move	365
Move	Do nothing but move.	Any	Full Move	364
Ready	Prepare a weapon or other item.	Any	Step	366
Wait	Hold yourself in readiness to act.	Any	Varies	366

* Taking an active defense may spoil your aim or concentration.
† Gives +2 to Dodge, Block, or Parry, *or* allows two defenses against each attack.
‡ Defenses are at -4 if taking Do Nothing due to stun.

Postures

Attack: The modifier when making a *melee* attack from this posture. There is no effect on *ranged* attacks.

Defense: The modifier to all active defense rolls.

Target: The modifier to hit your torso, groin, or legs with a *ranged* attack. No penalty to strike other hit locations, if they are visible from that posture.

Movement: The effect on movement. For tactical combat, movement point costs appear in parentheses, and note that a human occupies two hexes while crawling or lying down.

Posture Table

Posture	*Attack*	*Defense*	*Target*	*Movement*
Standing	Normal	Normal	Normal	Normal; may sprint
Crouching	-2	Normal	-2	2/3 (+1/2 per hex)
Kneeling	-2	-2	-2	1/3 (+2 per hex)
Crawling	-4*	-3	-2†	1/3 (+2 per hex)
Sitting	-2	-2	-2	None
Lying Down	-4	-3	-2†	1 yard/second

* Only reach "C" melee attacks are allowed.
† If attacker is at the same or lower elevation *and* farther away than his own height, he attacks your torso as if it were half exposed (-2 to hit), and cannot attack your groin, legs, or feet at all. If you also have your head down, he cannot attack your neck, eyes, or face.

Hit Location Tables

Use these tables in conjunction with the *Hit Location* rules (p. 398).

Missing Parts: If a random roll indicates that a missing body part would be hit (e.g., the neck, on a target with Injury Tolerance (No Neck)), treat it as a *torso* hit.

Human and Humanoid Hit Location Table

Use this table for humans, humanoids (e.g., giants and goblins), and semi-upright creatures (e.g., apes and bears). If rolling randomly, roll 3d. If *deliberately* targeting a specific hit location, apply the listed penalty. For example, a random hit to the skull would occur on a roll of 3-4, while a deliberate attack targeting the skull would be at -7 to hit.

Winged Humanoids: A deliberate attack on a wing is at -2 to hit. If rolling randomly, a 9 indicates a wing hit (roll randomly to see which wing) and a 10 indicates a torso hit. For wounding purposes, treat wings as limbs.

Fish-Tailed Humanoids (Mermen): A deliberate attack on the tail is at -3 to hit. If rolling randomly, treat random leg hits as torso hits and random foot hits as tail hits. For effects, see *Quadruped, Hexapod, Centaur, and Avian Hit Location* (p. 553).

Human and Humanoid Hit Location Table

Roll	Location (Penalty)	Notes
–	Eye (-9)	[1, 2]
3-4	Skull (-7)	[1, 3]
5	Face (-5)	[1, 4]
6-7	Right Leg (-2)	[5]
8	Right Arm (-2)	[5, 6]
9-10	Torso (0)	
11	Groin (-3)	[1, 7]
12	Left Arm (-2)	[5, 6]
13-14	Left Leg (-2)	[5]
15	Hand (-4)	[6, 8, 9]
16	Foot (-4)	[8, 9]
17-18	Neck (-5)	[1, 10]
–	Vitals (-3)	[1, 11]

[1] An attack that misses by 1 hits the torso instead.

[2] Only *impaling*, *piercing*, and *tight-beam burning* attacks can target the eye – and only from the front or sides. Injury over HP/10 blinds the eye. Otherwise, treat as skull, but without the extra DR!

[3] The skull gets an extra DR 2. Wounding modifier is ×4. Knockdown rolls are at -10. Critical hits use the *Critical Head Blow Table* (p. 556). *Exception:* These special effects do not apply to *toxic* damage.

[4] Jaw, cheeks, nose, ears, etc. If the target has an open-faced helmet, ignore its DR. Knockdown rolls are at -5. Critical hits use the *Critical Head Blow Table*. *Corrosion* damage gets a ×1.5 wounding modifier, and if it inflicts a major wound, it *also* blinds one eye (*both* eyes on damage over full HP). Random attacks from behind hit the skull instead.

[5] Limb. Reduce the wounding multiplier of *large piercing*, *huge piercing*, and *impaling* damage to ×1. Any major wound (loss of over 1/2 HP from one blow) cripples the limb. Damage beyond that threshold is lost.

[6] If holding a shield, *double* the penalty to hit: -4 for shield arm, -8 for shield hand.

[7] Human males and the males of similar species suffer *double* shock from *crushing* damage, and get -5 to knockdown rolls. Otherwise, treat as a torso hit.

[8] Extremity. Treat as a limb, except that damage over 1/3 HP in one blow inflicts a crippling major wound. Excess damage is still lost.

[9] If rolling randomly, roll 1d: 1-3 is right, 4-6 is left.

[10] Neck and throat. Increase the wounding multiplier of *crushing* and *corrosion* attacks to ×1.5, and that of *cutting* damage to ×2. At the GM's option, anyone killed by a cutting blow to the neck is decapitated!

[11] Heart, lungs, kidneys, etc. Increase the wounding modifier for an *impaling* or any *piercing* attack to ×3. Increase the wounding modifier for a *tight-beam burning* attack to ×2. Other attacks cannot target the vitals.

Injury Tolerance and Hit Location

Diffuse: Ignore special knockdown, shock, and wounding modifiers. (Eyes, limbs, and extremities can still be crippled.) Impaling and piercing attacks can never do more than *1 HP* of injury. Other attacks can never do more than *2 HP* of injury.

Homogenous: Ignore special knockdown, shock, and wounding modifiers. (Eyes, limbs, and extremities can still be crippled.) Wounding modifier is ×1/2 for *impaling* or *huge piercing*, ×1/3 for *large piercing*, ×1/5 for *piercing*, and ×1/10 for *small piercing*.

No Brain: Hits to the skull or face get no special knockdown or wounding modifier. Hits to the eye can cripple the eye; otherwise, treat them as face hits, not skull hits.

No Vitals: Treat hits to the vitals or groin as torso hits.

Unliving: Hit location has its usual effect, except that *impaling* or *piercing* damage to any location but the eye, skull, or vitals gets a reduced wounding modifier: ×1 for *impaling* or *huge piercing*, ×1/2 for *large piercing*, ×1/3 for *piercing*, and ×1/5 for *small piercing*.

Non-Humanoid Hit Location Tables

Use the next two tables for the following categories of non-humanoid:

Arachnoid: A spider or similar eight-legged creature.

Avian: A creature with two wings, two legs, and no arms; e.g., a bird.

Cancroid: A crab, lobster, scorpion, or similar creature with forelimb pincers.

Centaur: Any humanoid-quadruped hybrid.

Hexapod: A six-legged creature; e.g., an insect. A *winged hexapod* also has wings, like a fly.

Ichthyoid: A fish, cetacean, or similar creature.

Octopod: An octopus or similar creature with "arms" that double as legs.

Quadruped: A creature with four legs and no arms. A *winged quadruped* also has a pair of wings, like a dragon.

Vermiform: Any slithering creature (snake, worm, etc.) or variant (winged serpent, snake-man with arms but not legs, etc.).

Quadruped, Hexapod, Centaur, and Avian Hit Location Table

Roll (3d)	Quadruped	Winged Quadruped	Hexapod	Winged Hexapod	Centaur	Avian
–	Eye (-9)	Eye (-9)	Eye (-9)	Eye (-9)	Eye (-9)	Eye (-9)
3-4	Skull (-7)	Skull (-7)	Skull (-7)	Skull (-7)	Skull (-7)	Skull (-7)
5	Face (-5)	Face (-5)	Neck (-5)	Neck (-5)	Neck (-5)	Face (-5)
6	Neck (-5)	Neck (-5)	Face (-5)	Face (-5)	Face (-5)	Neck (-5)
7-8	Foreleg (-2)*	Foreleg (-2)*	Foreleg (-2)*	Foreleg (-2)*	Foreleg (-2)*	Wing (-2)*
9-10	Torso (0)	Torso (0)	Torso (0)	Torso (0)	Torso (0)†	Torso (0)
11	Torso (0)	Torso (0)	Mid Leg (-2)*	Mid Leg (-2)*	Torso (0)†	Torso (0)
12	Groin (-3)	Wing (-2)*	Groin (-3)	Wing (-2)*	Groin (-3)	Groin (-3)
13-14	Hind Leg (-2)*	Hind Leg (-2)*	Hind Leg (-2)*	Hind Leg (-2)*	Hind Leg (-2)*	Leg (-2)*
15-16	Foot (-4)*	Foot (-4)*	Foot (-4)*	Mid Leg (-2)*	Arm (-2)*	Foot (-4)*
17-18	Tail (-3)	Tail (-3)	Mid Leg (-2)*	Foot (-4)*	Extremity (-4)	Tail (-3)
–	Vitals (-3)	Vitals (-3)	Vitals (-3)	Vitals (-3)	Vitals (-3)	Vitals (-3)

* If using random hit location, roll 1d: 1-3 is right, 4-6 is left. If it is somehow holding a shield, *double* the penalty to hit: -4 for a limb, -8 for an extremity.

† For centaurs, 9-10 means the animal body is hit, while 11 means the humanoid upper body is hit. *Deliberate* attacks on either are at no penalty.

Arm, Eye, Face, Foot, Groin, Leg, Neck, Skull, Torso, Vitals: Use the rules for humans and humanoids. "Arm" means a human upper-body arm for a centaur. "Foot" includes paw, hoof, etc. "Torso" includes fore- and hindquarters, thorax, abdomen, etc.

Extremity: For centaurs, roll 1d: 1-2 is a human upper-body hand, 3-4 is a forefoot, and 5-6 is a hind foot; odd numbers are left, even numbers are right.

Foreleg: The right or left front leg.

Hind Leg: The right or left back leg.

Mid Leg: The right or left middle leg of a six-legged creature.

Tail: If a tail counts as an Extra Arm or a Striker, or is a fish tail, treat it as a limb (arm, leg) for crippling purposes; otherwise, treat it as an extremity (hand, foot). A crippled tail affects balance. For a ground creature, this gives -1 DX. For a swimmer or flyer, this gives -2 DX and halves Move. If the creature has no tail, or a very short one (like a rabbit), treat as "torso."

Wing: Treat a wing as a limb (arm, leg) for crippling purposes. A flyer with a crippled wing cannot fly.

Vermiform, Octopod, Cancroid, Ichthyoid, and Arachnoid Hit Location Table

Roll (3d)	Vermiform†	Octopod‡	Cancroid§	Ichthyoid	Arachnoid
–	Eye (-9)	Eye (-8)	Eye (-9)	Eye (-8)	Eye (-9)
3-4	Skull (-7)	Brain (-7)	Skull (-7)	Skull (-7)	Brain (-7)
5	Face (-5)	Face (-5)	Face (-5)	Face (-5)	Neck (-5)
6	Neck (-5)	Neck (-5)	Neck (-5)	Fin (-4)	Face (-5)
7-8	Neck (-5)	Arm 1-2 (-2)*	Arm (-2)*	Torso (0)	Leg 1-2 (-2)*
9-11	Torso (0)	Torso (0)	Torso (0)	Torso (0)	Torso (0)
12	Torso (0)	Torso (0)	Torso (0)	Torso (0)	Groin (-3)
13-14	Torso (0)	Arm 3-4 (-2)*	Leg (-2)*	Fin (-4)	Leg 3-4 (-2)*
15-16	Torso (0)	Arm 5-6 (-2)*	Leg (-2)*	Fin (-4)	Leg 5-6 (-2)*
17-18	Torso (0)	Arm 7-8 (-2)*	Foot (-4)*	Tail (-3)	Leg 7-8 (-2)*
–	Vitals (-3)	Vitals (-3)	Vitals (-3)	Vitals (-3)	Vitals (-3)

* If using random hit location, roll 1d: 1-3 is right, 4-6 is left. If it is somehow holding a shield, *double* the penalty to hit: -4 for a limb, -8 for an extremity.

† For winged serpents, treat 15-18 as Wing (-2). For snake-men, treat 7-8 as Right Arm (-2), 13-14 as Left Arm (-2), and 17-18 as Hand (-4).

‡ For squid, treat 17-18 as Torso (0). All arms other than arms 1-2 are extremities for injury purposes, and targeted at -3.

§ For scorpions, treat 12 as Tail (-3).

Arm: For an octopod, arms 1-4 are those it is currently using for manipulation, while arms 5-8 are those it is using for locomotion. For a cancroid, an arm is a forelimb pincer. Handle wounding, etc. as for humans and humanoids.

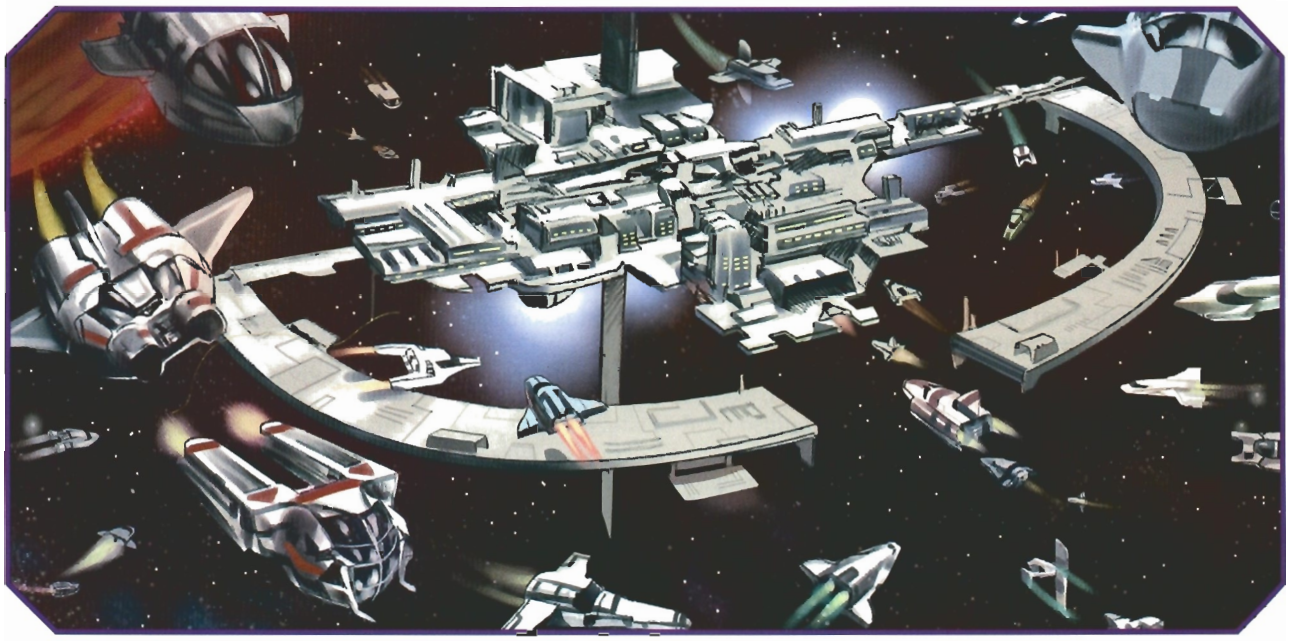
Brain: As skull, but only DR 1.

Eye, Face, Foot, Groin, Neck, Skull, Torso, Vitals: Use the rules for humans and humanoids.

Fin: An ichthyoid often has two or three fins or ray-like wings; roll randomly. Treat a fin as an extremity (hand, foot) for crippling purposes. A crippled fin affects balance: -3 DX.

Leg: For a cancroid, this is any of its true legs; roll randomly. For an arachnoid, legs 1-2 are the front pair, legs 3-4 are the mid-front pair, legs 5-6 are the mid-back pair, and legs 7-8 are the back pair. Handle wounding, etc. as for humans and humanoids.

Tail: See note under *Quadruped, Hexapod, Centaur, and Avian Hit Location Table*. For ichthyoids, most of the "tail" is considered the torso; this is just the tip.



Vehicle Hit Location Table

Every vehicle has a "body" hit location. To find a vehicle's other hit locations (if any), look up the vehicle on the relevant vehicle table and check the "Locations" column. See *Vehicle Statistics* (p. 462) for details.

To choose a random hit location, roll 3d on the table below. If *deliberately* targeting a location, apply the penalty in parentheses plus the vehicle's SM. For example, a random hit to a small glass window or exposed weapon mount would occur on a roll of 3-4, while a deliberate attack on either location would be at -7 to hit – or -3 on a vehicle with SM +4.

If a random location doesn't exist, is retracted, or isn't a logical target given the angle of attack (e.g., a window for a car attacked from below, or a vehicle with no windows), treat it as *body* hit. If multiple locations or possibilities exist (e.g., a roll of 3-4 for a vehicle with small glass windows *and* an exposed weapon mount), the attacker picks which was hit.

Body: The vehicle's hull. If a powered vehicle sustains a major wound, roll against HT. On a failure, the power or propulsion system is damaged, halving Move.

Caterpillar Track [C]: A track is hit. Most tracked vehicles have two tracks. Damage over HP/2 cripples one track, reducing ground Move to 0. Excess damage is lost.

Vehicle Hit Location Table

Roll	*Location (Penalty)*
3-4	Small Glass Window [g] or Exposed Weapon Mount [X] (-7)
5	Small Superstructure* [s] or Independent Turret [t] (-5)
6-7	Caterpillar Track [C], Draft Animal** [D], Helicopter Rotor [H], Mast [M], or Wing [Wi] (-2)
8	Arm [A], Large Superstructure* [S], or Main Turret* [T] (-2)
9	Body* or Exposed Rider [E] (0)
10	Body* (0)
11	Large Glass Window [G] or Open Cabin [O] (-3)
12	Arm [A], Large Superstructure* [S], or Main Turret* [T] (-2)
13-14	Caterpillar Track [C], Draft Animal** [D], Helicopter Rotor [H], Mast [M], or Wing [Wi] (-2)
15-16	Runner or Skid [R] or Wheel [W] (-4)
17-18	Vital Area (-3)

* Usually manned; see *Occupants and Vehicle Damage*, below.

** The modifier to target a draft animal deliberately is the *animal's* SM.

Draft Animal [D]: A harnessed animal is hit *instead* of the vehicle. The vehicle takes no damage, and its DR doesn't protect the animal.

Exposed Rider [E] or *Open Cabin* [O]: A person in an exposed position (e.g., riding a bike, sitting in a jeep, or sticking his head out a hatch) is struck *instead* of the vehicle. The vehicle takes no damage, and its DR doesn't protect the occupant. If no one occupies this position, treat as a body hit.

Exposed Weapon Mount [X]: A small external mount for a weapon, sensor, etc. is hit. Damage over HP/5 cripples it; excess damage is lost.

Helicopter Rotor [H] or *Wing* [Wi]: A main or tail rotor, or major wing or tail section. Damage over HP/2 (wing) or HP/3 (rotor) cripples it, causing an airborne vehicle to lose control and crash! Excess damage is lost.

Large Glass Window [G] or *Small Glass Window* [g]: A window or canopy is struck. Check for an occupant hit (see *Occupant Hit Table*, below). If a hit occurs, the attack strikes an occupant instead of the vehicle. A *closed* window gives half the vehicle's DR (round up).

Large Superstructure [S]: A large, raised structure – e.g., conning tower, bridge, or castle – that often houses officers' cabins or important control rooms. On an airship or a balloon, this is the gondola. If it sustains a major wound, roll against HT. On a failure, an important item of equipment is knocked out (GM's option).

Main Turret [T]: A turret large enough to be a vital part of the vehicle, such as a tank's turret. If it sustains a major wound, roll against HT. On a failure, a major item in the turret (e.g., a tank's main gun) is knocked out, or the turret jams and can't rotate (GM's option).

Mast [M]: A mast and associated sails and rigging. Damage over HP/(2 × number of masts on vehicle) cripples one mast, reducing a sailing vessel's Move by 1/(number of masts), rounded up; e.g., if three masts, loss of one results in 2/3 Move. Excess damage is lost.

Runner or Skids [R]: A skid, sled runner, or ski is hit. Damage over HP/3 cripples one skid, reducing ground Move to 0 and toppling a parked vehicle. Excess damage is lost.

Small Superstructure [s] or *Independent Turret* [t]: A turret or structure whose loss the vehicle could survive; e.g., the turrets on most naval vessels and infantry fighting vehicles. Damage over HP/3 cripples it, knocking out any weapons or equipment it contains. Excess damage is lost.

Vital Area: A powered vehicle (anything with a ST attribute) has vital areas: engines, fuel tanks, etc. The wounding modifier for a *tight-beam burning* attack is ×2; that for an *impaling* or any *piercing* attack is ×3! Unpowered vehicles (e.g., sailing ships and wagons) don't usually have vital areas – treat as a body hit.

Wheel [W]: A wheel is hit. Damage over HP/(2 × number of wheels on vehicle) cripples the wheel; effects are the same as for a character with an equal number of legs losing one leg. Excess damage is lost. If the wheel of a vehicle with tires sustains *any* damage, roll vs. HT. Failure means a flat tire that cripples the wheel until changed.

Notes on Vehicle Damage

In addition to hit location effects, note that:

- Most powered vehicles are Unliving; most unpowered vehicles are Homogenous. See *Injury to Unliving, Homogenous, and Diffuse Targets* (p. 380).
- Many vehicles are Fragile: "c" after HT means Combustible, "f" means Flammable, and "x" means Explosive.
- Large-area injury will affect exposed occupants *and* the vehicle's body; see *Large-Area Injury* (p. 400).

Occupants and Vehicle Damage

When damage penetrates a vehicle's DR, the occupants may suffer damage as well as the vehicle – the result of ricocheting projectiles, flying debris, etc. Whenever five or more points of damage penetrate an occupied location (usually the body, main turret, or a superstructure), roll 3d on the *Occupant Hit Table*, below. If an occupant is hit, he takes 1d cutting damage per five *full* points of penetrating damage the vehicle sustained. Roll randomly for hit location. The occupant's own DR protects him.

If occupant damage exceeds 4d, the GM may opt to divide it among multiple occupants in 4d (or smaller) increments; e.g., 7d damage might inflict 4d on one occupant and 3d on another.

Note that occupant damage is separate from damage to the *vehicle*.

Occupant Hit Table

Use this table when an attack penetrates an object containing occupants (e.g., a vehicle body). Cross-index the number of occupants with the vehicle or structure's Size Modifier, and then roll 3d against the resulting number; the more tightly packed the object, the higher the number. On a roll of this number or less, an occupant is hit. If multiple occupants could be hit, the GM determines who was hit randomly or by fiat.

Number of	*Size Modifier (SM)*										
Occupants	***+1***	***+2***	***+3***	***+4***	***+5***	***+6***	***+7***	***+8***	***+9***	***+10***	***+11***
1	10	9	8	7	6	5	4	3	3	3	3
2	12	10	9	8	7	6	5	4	3	3	3
3-5	14	12	10	9	8	7	6	5	4	3	3
6-10	16	14	12	10	9	8	7	6	5	4	3
11-20	17	16	14	12	10	9	8	7	6	5	4
21-50	17	17	16	14	12	10	9	8	7	6	5
51-100	17	17	17	16	14	12	10	9	8	7	6
101-200	17	17	17	17	16	14	12	10	9	8	7
201-500	17	17	17	17	17	16	14	12	10	9	8
etc.											

Critical Success and Failure

A roll of 3 or 4 is *always* a critical success.

A roll of 5 is a critical success *if your effective skill is 15+.*

A roll of 6 is a critical success *if your effective skill is 16+.*

A roll of 18 is *always a critical failure.*

A roll of 17 is a critical failure *if your effective skill is 15 or less;* otherwise, it is an ordinary failure.

Any roll of 10 greater than your *effective* skill is a critical failure: 16 on a skill of 6, 15 on a skill of 5, and so on.

Critical Hit Table

All doublings or triplings of damage refer to *basic damage* (not injury). In all cases, the target gets no active defense against the attack.

3 – The blow does triple damage.

4 – The target's DR protects at half value (round down) after applying any armor divisors.

5 – The blow does double damage.

6 – The blow does maximum normal damage.

7 – If *any* damage penetrates DR, treat it as if it were a major wound, regardless of the actual injury inflicted.

8 – If *any* damage penetrates DR, it inflicts double normal shock (to a maximum penalty of -8). If the injury is to a limb or extremity, that body part is crippled as well. This is only a "funny-bone" injury: crippling wears off in (16 - HT) seconds, minimum two seconds, unless the injury was enough to cripple the body part anyway.

9, 10, 11 – Normal damage only.

12 – Normal damage, and the victim drops anything he is holding, regardless of whether any damage penetrates DR.

13, 14 – If *any* damage penetrates DR, treat it as if it were a major wound, regardless of the actual injury inflicted.

15 – The blow does maximum normal damage.

16 – The blow does double damage.

17 – The target's DR protects at half value (round down) after applying any armor divisors.

18 – The blow does triple damage.

Critical Head Blow Table

Use this table only for critical hits to the head (*face, skull,* or *eye*). In all cases, the target gets no active defense against the attack.

3 – The blow does maximum normal damage *and* ignores the target's DR.

4, 5 – The target's DR protects at half value (round up) after applying any armor divisors. If *any* damage penetrates, treat it as if it were a major wound, regardless of the actual injury inflicted.

6, 7 – If the attack targeted the *face* or *skull,* treat it as an *eye* hit instead, even if the attack could not normally target the eye! If an eye hit is impossible (e.g., from behind), treat as **4.**

8 – Normal head-blow damage, and the victim is knocked off balance: he must Do Nothing next turn (but may defend normally).

9, 10, 11 – Normal head-blow damage only.

12, 13 – Normal head-blow damage, and if *any* damage penetrates DR, a *crushing* attack deafens the victim (for recovery, see *Duration of Crippling Injuries,* p. 422), while any other attack causes severe scarring (the victim loses one appearance level, or two levels if a *burning* or *corrosion* attack).

14 – Normal head-blow damage, and the victim drops his weapon (if he has two weapons, roll randomly to see which one he drops).

15 – The blow does maximum normal damage.

16 – The blow does double damage.

17 – The target's DR protects at half value (round up) after applying any armor divisors.

18 – The blow does triple damage.

Critical Miss Table

3, 4 – Your weapon breaks and is useless. *Exception:* Certain weapons are resistant to breakage. These include solid *crushing* weapons (maces, flails, mauls, metal bars, etc.); magic weapons; firearms (other than wheel-locks, guided missiles, and beam weapons); and fine and very fine weapons of all kinds. If you have a weapon like that, roll again. Only if you get a "broken weapon" result a second time does the weapon really break. If you get any other result, you drop the weapon instead. See *Broken Weapons* (p. 485).

5 – You manage to hit *yourself* in the arm or leg (50% chance each way). *Exception:* If making an *impaling* or *piercing* melee attack, or any kind of ranged attack, roll again. If you get a "hit yourself" result a second time, use *that* result – half or full damage, as the case may be. If you get something other than "hit yourself," use that result.

6 – As **5,** but half damage only.

7 – You lose your balance. You can do *nothing* else (not even a free action) until your next turn, and all your active defenses are at -2 until then.

8 – The weapon turns in your hand. You must take an extra Ready maneuver before you can use it again.

9, 10, 11 – You drop the weapon. *Exception:* A *cheap* weapon *breaks;* see **3.**

12 – As **8.**

13 – As **7.**

14 – If making a *swinging* melee attack, your weapon flies 1d yards from your hand – 50% chance straight forward or straight back. Anyone on the target spot must

make a DX roll or take half damage from the falling weapon! If making a *thrusting* melee attack or any kind of ranged attack, or parrying, you simply drop the weapon, as in **9.**

15 – You strain your shoulder! Your weapon arm is "crippled." You do not have to drop your weapon, but you cannot use it, either to attack or defend, for 30 minutes.

16 – You fall down! If making a ranged attack, see **7** instead.

17, 18 – Your weapon breaks; see **3.**

Unarmed Critical Miss Table

Use this table only for critical misses on *unarmed* attacks (bites, claws, grapples, head butts, kicks, punches, slams, etc.) or parries, including those by animals.

3 – You knock yourself out! Details are up to the GM – perhaps you trip and fall on your head, or walk face-first into an opponent's fist or shield. Roll vs. HT every 30 minutes to recover.

4 – If attacking or parrying with a limb, you strain it: take 1 HP of injury and the limb is "crippled." You cannot use it, either to attack or defend, for 30 minutes. If biting, butting, etc., you pull a muscle and suffer moderate pain (see *Irritating Conditions*, p. 428) for the next (20 - HT) minutes, minimum one minute.

5 – You hit a solid object (wall, floor, etc.) instead of striking your foe or parrying his attack. You take crushing damage equal to *your* thrusting damage to the body part you were using; DR protects normally. *Exception:* If attacking a foe armed with a ready impaling weapon, you fall on his weapon! You suffer the weapon's damage, but based on *your* ST rather than his.

6 – As **5**, but half damage only. *Exception:* If attacking with natural weapons, such as claws or teeth, they *break:* -1 damage on future attacks until you heal (for recovery, see *Duration of Crippling Injuries*, p. 422).

7 – You stumble. On an attack, you advance one yard past your opponent and end your turn facing away from him; he is now behind you! On a parry, you fall down; see **8.**

8 – You fall down!

9, 10, 11 – You lose your balance. You can do *nothing* else (not even a free action) until your next turn, and all your active defenses are at -2 until then.

12 – You trip. Make a DX roll to avoid falling down. Roll at DX-4 if kicking, or at *twice* the usual DX penalty for a technique that requires a DX roll to avoid mishap even on a normal failure (e.g., DX-8 for a Jump Kick).

13 – You drop your guard. All your active defenses are at -2 for the next turn, and any Evaluate bonus or Feint penalty against you until your next turn counts *double!* This *is* obvious to nearby opponents.

14 – You stumble; see **7.**

15 – You *tear* a muscle. Take 1d-3 of injury to the limb you used (to one limb, if you used two), or to your neck if biting, butting, etc. You are off balance and at -1 to all attacks and defenses for the next turn. You are at -3 to any action involving that limb (or to *any* action, if you injure your neck!) until this damage heals. Reduce this penalty to -1 if you have High Pain Threshold.

16 – You hit a solid object; see **5.**

17 – You strain a limb or pull a muscle, as in **4.** *Exception:* An IQ 3-5 animal fails so miserably that it loses its nerve. It will turn and flee on its next turn, if possible. If backed into a corner, it will assume a surrender position (throat bared, belly exposed, etc.).

18 – You knock yourself out; see **3.**

Fighters that cannot fall down (e.g., snakes, and anyone already on the ground): Treat any "fall down" result as 1d-3 of general injury instead. Details are up to the GM – perhaps your opponent steps on you!

Fliers and swimmers: Treat any "fall down" result as being forced into an awkward flying or swimming position with the same effective results (-4 to attack, -3 to defend).

HP and DR of Objects and Cover

Use the table below to determine the HP of nonliving artifacts.

Weight: The artifact's weight. If this falls between two values, use the *lower* of the two.

Unliving/Machine: The HP of an Unliving object of this weight. This includes anything with complex or moving parts; e.g., electronics, firearms, powered vehicles, robots, and most other machines.

Homogenous/Diffuse: The HP of a Homogenous or Diffuse object of this weight. This includes anything that lacks a complex internal structure; e.g., fabric (cloaks, drapes, etc.), furniture, and muscle-powered melee weapons.

If you have a choice between extra makeup or extra weapons, always take the weapons.

– Laurell K. Hamilton

Object Hit Points Table

Weight	*Unliving/ Machine*	*Homogenous/ Diffuse*
1/64 lb.	1 HP	2 HP
1/8 lb.	2 HP	4 HP
1/2 lb.	3 HP	6 HP
1 lb.	4 HP	8 HP
2 lbs.	5 HP	10 HP
3 lbs.	6 HP	12 HP
5 lbs.	7 HP	14 HP
8 lbs.	8 HP	16 HP
11 lbs.	9 HP	18 HP
16 lbs.	10 HP	20 HP
27 lbs.	12 HP	24 HP
43 lbs.	14 HP	28 HP
64 lbs.	16 HP	32 HP
91 lbs.	18 HP	36 HP
125 lbs.	20 HP	40 HP
216 lbs.	24 HP	48 HP
343 lbs.	28 HP	56 HP
512 lbs.	32 HP	64 HP
729 lbs.	36 HP	72 HP
1,000 lbs.	40 HP	80 HP

Optionally, calculate HP as 4 × (cube root of empty weight in lbs.) for Unliving objects and 8 × (cube root of empty weight in lbs.) for Homogenous or Diffuse ones. Round *up* in both cases. The GM may alter HP for unusually frail or tough objects.

HP and DR of Structures

The table below gives DR and HP for some common objects. All of these structures are Homogenous (see *Injury to Unliving, Homogenous, and Diffuse Targets*, p. 380). For the effects of damage, see *Damage to Buildings and Structures* (p. 484). Assume a structure in good repair has HT 12, should this become important (e.g., when rolling to see if a rope snaps under stress).

DR: The structure's Damage Resistance.

HP: The structure's Hit Points. Optionally, this can be calculated for buildings: HP = 100 × (cube root of building's empty weight in tons), and typical weights per 1,000 square feet (sf) of area are 50 tons for wood frame or mud brick, 100 tons for steel frame or brick, and 150 tons for stone.

Notes: "No Crushing" indicates a structure so resilient that crushing damage cannot destroy it. Structures marked "Combustible" or "Brittle" are Fragile (p. 136).

Structural Damage Table

Object	*DR*	*HP*	*Notes*
Ropes and Cables			
Rope, light (3/8" diameter)	1	2	Combustible; No Crushing
Rope, heavy (3/4" diameter)	2	3	Combustible; No Crushing
Steel cable (1/4" diameter)	14	22	No Crushing
Steel cable (1/2" diameter)	28	28	No Crushing
Steel cable (1" diameter)	56	36	No Crushing
Bars, Poles, Logs, and Trees			
Bronze/iron bar (1/2" diameter)	6	12	
Bronze/iron bar (1" diameter)	12	23	
Bronze/iron bar (2" diameter)	24	46	
Steel bar (1/2" diameter)	11	22	
Steel bar (1" diameter)	22	44	
Steel bar (2" diameter)	44	88	
Wood (1" thick)	1*	14	Combustible
Wood (2" thick)	2*	18	Combustible
Wood (4" thick)	4*	23	Combustible
Wood (8" thick)	8*	30	Combustible
Wood (16" thick)	16*	37	Combustible
Doors and Walls (per 1-hex or 10-square-foot area)			
Brick Wall (3" thick)	8*	54	
Brick Wall (6" thick)	16*	67	
Brick Wall (9" thick)	24*	77	
Brick Wall (18" thick)	48*	97	
Concrete, reinforced (8" thick)	96*	80	
Concrete, reinforced (2' thick)	288*	115	
Concrete, reinforced (5' thick)	720*	156	
Glass, plate (1/5" thick)	1	3	Brittle
Iron/bronze (1/4" thick)	12	36	
Iron (1/2" thick)	25	46	
Iron (1" thick)	50	58	
Steel, mild (1/8" thick)	7	30	
Steel, mild (1/4" thick)	14	38	
Steel, mild (1/2" thick)	28	47	
Steel, mild (1" thick)	56	60	
Steel, mild (2" thick)	112	75	
Stone wall (1' thick)	156*	94	
Stone wall (3' thick)	468*	135	
Stone wall (8' thick)	1,250*	188	
Wallboard (1/2" thick)	1*	18	Combustible
Wood (1" thick)	1*	23	Combustible
Wood (2" thick)	2*	29	Combustible
Wood (3" thick)	3*	33	Combustible
Wood (6" thick)	6*	42	Combustible
Wood (12" thick)	12*	54	Combustible
Buildings			
Farmhouse (1,000 sf)	2*	370	Combustible
Mansion or manor (10,000 sf)	6*	1,000	Combustible
Modern House (2,000 sf)	6*	580	Combustible
Pillbox (10'-thick concrete)	1,440*	460	
Skyscraper (50-story, 500,000 sf)	10	3,700	Combustible
Stone Keep (6'-thick walls)	780*	1,200	

* Repeated *impaling, piercing,* and *large piercing* attacks against the same small spot (an area with SM 0 or less) lower DR *at that specific point* as if it were semi-ablative; repeated *burning, corrosion, crushing, cutting,* or *huge piercing* attacks at that same spot reduce DR at that point as if it were ablative. DR never falls below 1 for wood or 3 for brick, concrete, or stone. For rules governing semi-ablative and ablative DR, see the Damage Resistance advantage (p. 46).

Cover DR

The following table gives the DR per inch of thickness that common materials afford as *cover.* This isn't always identical to an object's *own* DR! For details, see *Cover* (p. 407).

Cover DR Table

Material	*DR/Inch*	*Notes*
Aluminum	20-30	
Brick	5-8*	
Concrete	6-9*	
Concrete, reinforced	10-12*	
Glass, window	5-8	Brittle
Glass, bullet resistant	10-20	Brittle
Iron	40-60	
Sandbags	3	
Steel, mild	50-60	
Steel, hard	60-70	
Stone	8-13*	
Wood	0.5-1*	Combustible

* Repeated damage to a small area lowers DR, as explained under the *Structural Damage Table.*

NPC Reactions

When the PCs meet an NPC whose reaction to them is not predetermined, the GM can opt to make a "reaction roll" on 3d. The higher the roll, the better the reaction. The GM then follows the guidelines on the *Reaction Table,* below. For more information, see *Reaction Rolls* (p. 494).

Many factors can influence a reaction roll. A reaction *bonus* is any factor that makes NPCs *friendlier,* while a reaction *penalty* is something that biases NPCs *against* the PCs. Some common modifiers:

Reaction Table

Roll 3d and apply the modifiers described above.

0 or less: Disastrous

General reaction: The NPC hates the PCs and acts in their worst interest.

In a *potential combat situation,* the NPCs attack viciously, asking no quarter and giving none.

Commercial transactions are doomed: The merchant has nothing to do with the PCs. Make a "potential combat" roll at -2.

Requests for aid are denied totally. Make a "potential combat" roll at -4. If combat is called for but not possible, the NPC works against the PCs in any way possible.

Requests for information are met with anger. Make a "potential combat" roll at -2.

Loyalty: The NPC hates the PCs or is in the pay of their enemies, and takes the first good chance to betray them.

1 to 3: Very Bad

General reaction: The NPC dislikes the PCs and acts against them if it's convenient to do so.

In a *potential combat situation,* the NPCs attack, and flee only if they see they have no chance. (A fight in progress continues.)

Commercial transactions are next to impossible. The merchant asks three times the fair price, or offers 1/3 the fair price.

Requests for aid are denied. Make a "potential combat" roll; no reaction better than "Neutral" is possible.

Requests for information are met with malicious lies.

Loyalty: The NPC dislikes the PCs, and will leave their service (probably taking everything he can carry) or sell them out as soon as possible.

4 to 6: Bad

General reaction: The NPC cares nothing for the PCs and acts against them if he can profit by doing so.

In a *potential combat situation,* the NPCs attack unless outnumbered. If they are outnumbered they flee, possibly to attempt an ambush later. (A fight in progress continues.)

Commercial transactions go badly. The merchant asks twice the fair price, or offers half the fair price.

Requests for aid are denied. The NPCs go about their business, ignoring the PCs.

Requests for information are denied. NPCs lie maliciously or demand payment for information. If paid, the NPC gives true, but incomplete, information.

Loyalty: The NPC has no respect for the PCs. He leaves or betrays them given even moderate temptation, and is a sluggish worker.

7 to 9: Poor

General reaction: The NPC is unimpressed. He may become hostile if there is much profit in it, or little danger.

In a *potential combat situation,* the NPCs shout threats or insults. They demand that the PCs leave the area. If the PCs stick around, the NPCs attack unless outnumbered, in which case they flee. (A fight in progress continues.)

Commercial transactions are unprofitable. The merchant asks 120% of the fair price, or offers 75% of the fair price.

Requests for aid are denied, but bribes, pleas, or threats might work. The PCs may roll again, at -2.

Requests for information are unproductive. The NPCs claim not to know, or give incomplete data. A bribe may improve their memory; roll again if a bribe is offered.

Loyalty: The NPC is unimpressed with the PCs or dislikes the job; he thinks he's overworked and underpaid. He'll probably betray them if offered enough, and would certainly take a "better" job if he thought he had one.

10 to 12: Neutral

General reaction: The NPC ignores the PCs as much as possible. He is totally uninterested.

In a *potential combat situation,* the NPCs are inclined to go their own way and let the PCs go theirs. (If a fight is in progress, the NPCs try to back off.)

Commercial transactions go routinely. The merchant buys and sells at fair prices.

Requests for aid are granted – if they are simple. Complex requests are denied, but the PCs can try again at -2.

Requests for information are successful. The NPC gives the information requested if it is simple. If the question is complex, the answer is sketchy.

Loyalty: The NPC views the PCs as "just another boss," and this is just another job. He works hard enough to keep them happy, but no harder. He does not leave unless he is sure the new job is better, and does not betray them unless the temptation is very strong.

Continued on next page . . .

• *Personal appearance and behavior:* Especially true for the PC who does the talking! Above-average appearance, Charisma, Fashion Sense, Pitiable, and Voice all give a bonus; so does high apparent Status, in most situations. Below-average appearance and numerous disadvantages give a penalty.

• *Skills:* A successful roll against an appropriate skill (Administration to deal with bureaucrats, Carousing when partying, etc.) can give +2 to reactions. A few skills (e.g., Diplomacy and Fast-Talk) give an *automatic* +2 to reactions at skill 20+.

• *Racial or national biases:* These are usually penalties, and take the

Reaction Table (cont'd)

13 to 15: Good

General reaction: The NPC likes the PCs and is helpful within reasonable, everyday limits.

In a *potential combat situation,* the NPCs find the PCs likeable, or else too formidable to attack. The PCs may request aid or information; roll again at +1. (If a fight is in progress, the NPCs flee.)

Commercial transactions go pleasantly. The merchant buys and sells at fair prices, and volunteers useful information or small bits of help if possible.

Requests for aid are granted if the request is reasonable. The NPCs' attitude is helpful. Even if the request is silly and must be denied, they offer helpful advice.

Requests for information are successful. The question is answered accurately.

Loyalty: The NPC likes the PCs or the job. He is loyal, works hard, and accepts any reasonable hazard that the PCs accept.

16 to 18: Very Good

General reaction: The NPC thinks highly of the PCs and is quite helpful and friendly.

In a *potential combat situation,* the NPCs are friendly. The PCs may ask for aid or information (roll again at +3). Even sworn foes find an excuse to let the PCs go . . . for now. (If a fight is in progress, the NPCs flee if they can, or surrender otherwise.)

Commercial transactions go very well. The merchant accepts the PCs' offer unless they tried to buy below 80% of the fair price or sell above 150% of the fair price. In that case, he offers those rates. He also offers help and advice.

Requests for aid are granted unless they are totally unreasonable. Any useful information NPCs have is volunteered freely.

Requests for information are successful. The NPC answers in detail and volunteers any related information he has.

Loyalty: The NPC works very hard, and risks his life if need be. Under most circumstances, he puts the PCs' interests ahead of his own.

19 or better: Excellent

General reaction: The NPC is extremely impressed by the PCs, and acts in their best interests at all times, within the limits of his own ability.

In a *potential combat situation,* the NPCs are extremely friendly. They may even join the party temporarily. The PCs may ask for aid or information; roll again at +5. (If a fight is in progress, the NPCs surrender.)

Commercial transactions go extremely well. The merchant accepts the PCs' offer unless they tried to buy below 50% of fair price or sell above 200% of fair price. In that case, he offers those rates. He also offers help and advice.

Requests for aid are granted. NPCs help in every way within their power, offering extra aid.

Requests for information are extremely successful. The question is answered completely. If the NPC doesn't know everything the PCs need, he exerts himself to find out. He may even offer to help: roll a request for aid at +2, with no reaction worse than "Poor" possible.

Loyalty: The NPC worships the PCs or their cause, works incredibly hard, puts the PCs' interests ahead of his own at all times, and would even die for them.

form of a Social Stigma disadvantage for the PC or an Intolerance disadvantage on the part of the NPC.

• *Appropriate behavior by the players:* A good approach should be worth +1 or more! A wholly inappropriate approach should give the party -1 or -2.

Remember that reaction rolls are meant to flesh out a situation, NOT to control it! In general, the GM should reserve them for incidental encounters, unplanned situations, etc. He should decide in advance how he intends to play the NPCs in *vital* encounters . . . but he can still *pretend* to roll, so that the players won't know for sure what is going on!

General Reactions

Make this roll to see, in general, how any NPC feels about the PCs. When nothing else seems appropriate, make a general reaction roll and wing it! The GM can use any modifiers he thinks appropriate, especially those for personal appearance.

Potential Combat Situations (and Morale Checks)

Roll in any encounter where combat is possible but not *certain.* For a foe in a pitched battle, no roll is necessary. For a group of armed strangers on a wilderness trail, a reaction roll is appropriate unless the GM has predetermined their actions.

When NPCs are losing a fight, the GM can make a combat reaction roll *during* the fight as a "morale check." A "Good" or higher reaction indicates flight or surrender, as appropriate – not sudden friendship.

Special Modifiers for Combat Reactions

+1 to +5 if the PCs seem notably stronger than the NPCs.

-1 to -5 if the PCs seem notably *weaker* than the NPCs.

-2 if the PCs have no language in common with the NPCs.

-2 if the PCs are intruders on the NPCs' home turf.

Commercial Transactions

Roll when the PCs try to buy or sell goods, find a job, or hire someone. If no bargaining is involved, no roll is necessary – unless there is a chance that the merchant won't deal with the PCs at all.

As used below, "fair price" means the normal price, at that particular time and place, for the goods or services in question. The PCs can try to get a better price, at a -1 penalty for every 10% difference. Likewise, offering more than the fair price, or asking less than the fair price, will give a +1 bonus for every 10% difference.

If the players vary their offer, determine the NPC's counteroffer based on the proposed price instead of the fair price, if that is *less* favorable to the PCs. *Example:* If they ask 120% of the fair price and get a "Bad" reaction, the NPC will offer half of that, or 60%.

Bargaining never reduces the price below 50% of "fair" unless the NPC has an ulterior motive!

Special Modifiers for Transactions

-1 per 10% by which proposed price favors the PC, relative to the *fair* price.

+1 per 10% by which proposed price favors the NPC.

+1 if the PC has Merchant skill at *any* level.

+2 if the PC has Merchant skill at level 20+.

Requests for Aid

Roll when the PCs ask for any sort of help. (If appropriate, make a roll for a "potential combat situation" first!) Examples include an interview with a bureaucrat; an attempt to get a newspaper editor or police captain to listen to your story about the mad scientist's plot; or just a cry for help to the bystanders watching you get mugged!

Special Modifiers for Request for Aid

+1 if the request is very simple.

-1 to -3 (or more) if the request is very complex or unreasonable.

-1 if the request would inconvenience the NPC or cost him money.

-2 or more if the request would endanger the NPC's job or social status.

-1 or more if the request would physically endanger the NPC. This depends on the degree of the risk and the bravery of the NPC!

Requests for Information

Roll when the PCs ask NPCs for directions or advice, "Have you seen this man?," etc. *Note:* If the NPC is a professional information dealer, roll for a commercial transaction instead. If the PCs are interrogating the NPC, they must use the Interrogation skill.

Remember that no NPC can tell more than he knows. Sometimes an NPC will tell the truth *as he knows it* . . . but be terribly mistaken! And certain NPCs may pretend to know more than they do, in order to earn money or impress the PCs.

If there is a question as to whether a given NPC (or PC, for that matter) knows some specific fact, roll against his IQ or an appropriate skill.

Special Modifiers for Information Requests

-1 for a complex question; -2 for a *very* complex question.

-3 if the NPC thinks it's none of the PCs' business!

-3 or more if an answer would endanger the NPC.

+1 to +4 if the PCs offer a bribe. To be effective, a bribe must be appropriate in size; use the *Money Talks* rule for Contacts (p. 44), reading the bonus as a reaction modifier. It must also be *discreet*. Not everyone will take a cash payoff. You don't offer a newspaper reporter a $50 bill – he would be insulted – but buy him a good dinner and he'll appreciate it.

+2 to +4 if the NPC is a librarian, historian, scribe, teacher, etc. Most such people are naturally disposed to help any seeker of knowledge.

Loyalty

When the PCs hire someone, the GM should determine his loyalty. This determines only the NPC's *attitude* – not his competence. If the NPC is important, the GM should predetermine both his skills and his general attitude. Otherwise, a random roll is fine.

When the PCs take service with an employer, the GM should also determine (randomly or otherwise) how the employer feels about them.

Loyalty reactions are known to the GM, but not to the players (unless they successfully use Empathy). The GM should record each NPC's loyalty secretly, and let it guide him in determining all that NPC's later behavior. Note that loyalty can change; see *Changes in Loyalty* (p. 519).

Special Modifiers for Loyalty

+1 per 10% the PCs offer above the going pay rate.

-1 per 10% the PCs offer below the going pay rate.

+2 or more if the PCs are serving a cause that the NPC believes in, or a leader to whom the NPC is very loyal.

+ or - as appropriate for the PCs' reputation in the area (if any).

GLOSSARY

Experienced gamers will recognize some of these terms – but ***GURPS*** uses several of them differently, and also coins a few of its own. See also *Glossary of Magical Terms* (p. 234), *Glossary of Psi Terminology* (p. 254), and *Glossary of Arms and Armor* (p. 268).

active defense: An active attempt to avoid an attack: a block, dodge, or parry. See p. 374.

advantage: A useful trait that gives you an "edge" over another person with comparable attributes and skills. See Chapter 2.

adventure: The basic "unit" of play in a roleplaying game, representing a single mission or plot. It might require several sessions of play, or just one play session. See p. 500.

Adversary: An "assistant GM" who plays "enemy" non-player characters. The Adversary knows only as much about the game world and the player characters as the GM tells him. See p. 493.

affliction: A debilitating or incapacitating condition (choking, paralysis, unconsciousness, etc.), most often caused by a non-damaging attack. See p. 428.

armor divisor: A rating of an attack's armor-defeating power, given in parentheses after its damage dice. Divide Damage Resistance by this number before you subtract it from basic damage to find penetrating damage. See p. 378.

Associated NPC: A non-player character linked to a player character by an advantage (Ally or Patron) or disadvantage (Dependent or Enemy). See p. 31.

attack roll: A success roll against a combat skill to see if you can hit your target. See p. 369.

attributes: The most basic traits that describe a character: Strength (ST), Dexterity (DX), Intelligence (IQ), and Health (HT). For all four, the human norm is a score of 10, and higher is better! See p. 14.

base skill: Your actual learned level in a skill – the number recorded on your character sheet – before any modifiers. See p. 171.

basic damage: The result of a damage roll, before accounting for the target's Damage Resistance. See p. 378.

Basic Lift (BL): The weight you can pick up in one hand in one second in combat. All carrying, lifting, and throwing capacities are multiples of Basic Lift. See p. 15.

Basic Move: A secondary characteristic, computed from Basic Speed, which rates ground speed (in yards per second) without encumbrance. See p. 17.

Basic Speed: A secondary characteristic, computed from HT and DX, which measures reflexes. See p. 17.

BL: See *Basic Lift*.

block: The active defense of interposing your shield or cloak to stop an attack. See p. 375.

bonus points: Character points awarded by the GM as a reward for good roleplaying or for advancing the mission. You can use these to add or improve beneficial traits, or to buy off disadvantages. See p. 498.

build: Your height and weight, along with associated traits such as Size Modifier. See p. 18.

buy off: To spend bonus points to get rid of a disadvantage. See p. 121.

campaign: A continuing series of adventures. A campaign will usually have a continuing cast of player characters, and the same GM (or team of GMs). It may move from one game world to another, with a logical reason. See p. 504.

character: Any being – person, animal, robot, etc. – played by the GM, the Adversary, or a player. See Chapter 1.

character points: The unit of "currency" spent to buy traits for a character. The more points you have, the more capable you are. Point costs often appear in brackets; e.g., "Combat Reflexes [15]" means Combat Reflexes costs 15 points. See p. 10.

character sheet: A written description (possibly including a picture) of a character, including a complete list of his traits and their point costs. See p. 13.

character story: The fictional life history of a character, invented by the person playing that character. See p. 11.

character template: A list of traits the GM feels a character should have to fill a specific role in the campaign. This is a "quick reference," not a strict requirement. See p. 258.

cinematic: A style of play where the needs of the story always outweigh those of realism, even when this would produce improbable results. See p. 488.

close combat: Combat between fighters less than one yard apart. See p. 391.

comprehension level: A measure of your command of a language. Your spoken ability (fluency) and written ability (literacy) may differ. See p. 24.

Contest: A competition between two characters in which each tries to make his success roll, to see who gets the better of the other. See p. 348.

Control Rating (CR): A general measure of governmental control in a society: the higher the CR, the more restrictive the society. See p. 506.

controlling attribute: The attribute most closely associated with a skill, used to calculate your base skill level. See p. 167.

CR: See *Control Rating*.

critical failure: A skill roll missed so badly that something disastrous happens to the character who tried the roll. See p. 348.

critical hit: A blow so well struck that the foe does not get to make a defense roll. It may also do special and unusual damage. See p. 381.

critical miss: An attack that fails so badly that the attacker is hurt, drops his weapon, etc. See p. 382.

critical success: A skill roll that succeeds so well that the character has an extra or unusual degree of success. See p. 347.

d: Short for "dice," which are always ordinary six-sided dice. "3d" means "roll three dice and add them up." See p. 9.

Damage Resistance (DR): The protection against damage afforded by skin, armor, force fields, etc. When an attack hits a target, subtract the target's DR from the damage roll. See p. 46.

damage roll: A die roll made to see how much damage you do when you hit with your weapon. Damage is measured in "dice plus adds." For a "3d+2" weapon, roll 3 dice and add 2 to the total. Higher is better (for the attacker!). See p. 378.

damage type: The *kind* of injury a weapon causes, which determines its wounding modifier. See p. 269.

default: Your level with a skill on which you have spent no points. This is usually equal to one of your four attributes or another skill, minus a significant penalty. See p. 173.

Defense Bonus: A bonus to all defense rolls. The most common Defense Bonus is that for carrying a shield. See p. 374.

defense roll: A die roll made after your foe's attack roll succeeds, to see if you can use an active defense to avoid being hit. See p. 374.

Dexterity (DX): A measure of a character's agility and coordination. See p. 15.

disadvantage: A problem that renders you less capable than your other traits would suggest. See Chapter 3.

disadvantage limit: The maximum number of extra character points you can claim from all traits with negative point costs. The GM sets this value, if he wishes. See p. 11.

dodge: The active defense of ducking or evading an attack. See p. 374.

DR: See *Damage Resistance.*

DX: See *Dexterity.*

earned points: Same as *bonus points.*

effective skill: Your base skill plus or minus any modifiers for the task at hand. See p. 171.

encounter: One "scene" of an adventure, usually a meeting between the PCs and one or more NPCs. See p. 502.

encumbrance: The weight of all objects you are carrying. The greater your encumbrance, the slower your movement will be. See p. 17.

enhancement: An extra capability added to a trait. This increases the point cost of the trait by a percentage. See p. 102.

extra effort: Pushing your physical abilities beyond their usual limits by spending FP. See p. 356.

Fatigue Points (FP): A secondary characteristic, computed from HT, which measures resistance to exhaustion. Strenuous activity and the use of some special abilities "cost" FP temporarily. See p. 16.

feature: A trait (usually racial) that can affect game play but that costs 0 points. See p. 260.

FP: See *Fatigue Points.*

Fright Check: A Will roll made to see how you react in a frightening situation. See p. 360.

Game Master (GM): The referee, who chooses the adventure, talks the players through it, judges the results, and gives out bonus points. See Chapter 18.

game time: Time that passes in the game world. See p. 497.

game world: A background for play; a setting. "World" might mean "planet," but it could also refer to a region and historical period . . . or an entire universe. See Chapter 19.

GM: See *Game Master.*

Health (HT): A measure of a character's energy and vitality. See p. 15.

hex: A hexagonal space on a game map. Different maps have different scales. A hex on a combat map is one yard across. See p. 384.

Hit Points (HP): A secondary characteristic, computed from ST, which rates a character's ability to absorb punishment. Physical threats such as accidents, attacks, and hazards can temporarily deplete HP. See p. 16.

HP: See *Hit Points.*

HT: See *Health.*

Influence roll: A Contest of skill against Will made to see if a character is affected by an Influence skill. Reaction modifiers always apply to Influence rolls. See p. 359.

Influence skill: A skill used to influence others: Diplomacy, Fast-Talk, Intimidation, Savoir-Faire, Sex Appeal, or Streetwise. See p. 494.

injury: Temporary Hit Point loss due to an attack, found by subtracting the target's Damage Resistance from the attack's basic damage and modifying the resulting penetrating damage for damage type. See p. 419.

Intelligence (IQ): A broad measure of a character's brainpower. See p. 15.

IQ: See *Intelligence.*

job roll: A monthly success roll made to determine your performance at a job. See p. 516.

LC: See *Legality Class.*

Legality Class (LC): A statistic that rates society's willingness to allow easy access to a piece of equipment. The lower an item's LC, the more likely it is controlled or illegal. See p. 267.

life history: Same as *character story.*

limitation: A restriction on the use of a trait. This reduces the point cost of the trait by a percentage. See p. 110.

major wound: A single injury equal to half the target's HP or more. See p. 420.

maneuver: An action you may choose on your turn in combat, such as Attack, Change Posture, or Feint. See p. 363.

margin of failure: The amount by which you overshoot your effective skill on a failed success roll. See p. 347.

margin of success: The amount by which you beat your effective skill on a successful success roll. See p. 347.

margin of victory: A numerical comparison of the winner's margin of success or failure to the loser's in a Contest. See p. 348.

melee combat: Combat with melee weapons (axes, swords, etc.) or bare hands. See p. 369.

melee weapon: A (usually) muscle-powered weapon held in the hand and used to strike the foe directly; e.g., an axe. The opposite of *ranged weapon.* See p. 271.

mental trait: A trait associated with your mind, and that will come with you should you move to a new body. See p. 32.

meta-trait: A single trait that is actually shorthand for a collection of traits that represent one simple concept. *Example:* Machine. See p. 262.

modifier: 1. A number added to or subtracted from the target number of a success roll – or the actual die roll, for a reaction roll – in order to allow for a specific situation. See p. 344. **2.** An enhancement or a limitation. See p. 101.

Move: Movement speed in yards per second. Find ground Move by modifying Basic Move for your encumbrance level. See p. 17.

nonplayer character (NPC): Any character played by the GM or the Adversary. See p. 493.

NPC: See *nonplayer character.*

parry: The active defense of using a hand or a weapon to ward off an attack. See p. 376.

party: A group of PCs taking part in the same adventure. See p. 8.

PC: See *player character.*

penetrating damage: The amount by which an attack's damage roll exceeds the target's Damage Resistance. Find this by subtracting the target's DR from basic damage. If DR is greater than the damage roll, penetrating damage is 0. See p. 379.

Perception (Per): A secondary characteristic, computed from IQ, which rates general alertness. See p. 16.

perk: A 1-point advantage. See p. 100.

physical trait: A trait associated with your body, and that you will leave behind if you switch bodies. See p. 32.

player: A gamer who plays the role of a character participating in adventures refereed by the Game Master (GM). See p. 7.

player character (PC): A character created and played by one of the players. See p. 7.

points: See *character points.*

posture: Your bodily profile in combat: standing, crouching, kneeling, sitting, prone, or lying down. See p. 364.

power level: The average point total of the PCs in a campaign. See p. 487.

prerequisite: A trait you must have in order to buy some other trait. If the prerequisite is a skill, you must have at least one point in it. See p. 169.

quirk: A -1-point trait taken to flesh out a character. It is not necessarily a disadvantage. See p. 162.

racial template: A package of traits that all characters of a given race must purchase. See p. 260.

ranged weapon: A thrown or missile weapon; a weapon used at a distance. See p. 372.

reaction modifier: A penalty or bonus to reaction rolls. A bonus means you are especially likeable; a penalty means you are disreputable, obnoxious, unattractive, etc. See p. 494.

reaction roll: A die roll made by the GM to determine an NPC's reaction to a request or proposal made by the PCs. Higher is better. See p. 494.

real time: The time that passes in the real world, as opposed to *game time*. See p. 497.

relative skill level: The difference between the base skill level and controlling attribute for a skill. For example, if you had DX 12 and a DX-based skill at 14, your relative skill level would be +2. See p. 171.

repeated attempt: The second or later attempt at a success roll, after a failed initial attempt. Often subject to special penalties. See p. 348.

resistance roll: A Contest of skill against Will or HT, made to see if a character is affected by a supernatural ability such as magical mind control. See p. 241.

roleplaying game: A game in which players take on the personalities of imaginary individuals, or *characters*, in a fictional or historical setting, and try to act as those characters would. See p. 7.

sapient: Capable of possessing Languages and learning technological skills. This requires IQ 6+. See p. 15.

scenario: Same as *adventure*.

score: The numerical value of an attribute, secondary characteristic, or skill.

secondary characteristics: Several statistics determined from basic attributes: Damage (Dmg), Basic Lift (BL), Hit Points (HP), Will, Perception (Per), Fatigue Points (FP), Basic Speed, and Basic Move. See p. 15.

self-control roll: A roll to resist one of your mental disadvantages. Roll against the self-control number of the disadvantage. Lower is better. See p. 120.

self-imposed mental disadvantage: A mental disadvantage that comes from a belief or an honor code as opposed to a mental defect. See p. 121.

Sense roll: A success roll against Perception, made to see whether you notice something with one of your senses. See p. 358.

setting: Same as *game world*.

Size Modifier (SM): A numerical index of size, used as a modifier to rolls to see you or to hit you in combat, among other things. See p. 19.

skill: A number defining your trained ability in one specific area of knowledge or narrow class of tasks. See Chapter 4.

SM: See *Size Modifier*.

social trait: A trait associated with your identity. Identity might be primarily physical or mental, depending on the setting. See p. 32.

sourcebook: A game supplement that contains information that is not associated with any particular setting; for instance, a catalog of statistics for animals, vehicles, or weapons, or a collection of additional rules for magic, psionics, or martial arts.

specialty: A narrow focus within a skill. Some skills require you to pick a specialty; others leave this optional. See p. 169.

ST: See *Strength*.

starting points: The number of character points the GM gives the players to build their characters with at the start of the campaign. See p. 10.

starting wealth: The amount of discretionary cash a PC has available at the start of the campaign. See p. 26.

statistics: The numerical values that describe a character, piece of equipment, etc., taken collectively. Often called "stats."

step: A small amount of movement (1 yard, for most humans) allowed as part of a combat maneuver. It can come before or after the action portion of the maneuver. See p. 368.

Strength (ST): A measure of a character's physical muscle and bulk. See p. 14.

stun: The result of an enemy blow, surprise, or a failed Fright Check. A stunned character defends at -4, and cannot initiate any action until he recovers. See p. 420.

success roll: A die roll (on 3 six-sided dice) made whenever a character attempts to do something, to determine whether he succeeds. Lower is better. See Chapter 10.

super: A comic-book style hero or villain with superhuman powers.

supplement: Anything designed to add to the basic ***GURPS*** rules. The most common types are *sourcebooks* and *worldbooks*. See p. 566.

tactical combat: Combat played out with figures on a map. See Chapter 12.

tech level: See *technology level*.

technique: A trait that represents training at one specific task covered by a skill. See p. 229.

technological skill: Any skill that has a tech level (marked "/TL") and that takes a penalty when used with the equipment or ideas of a different tech level. See p. 168.

Technology Level (TL): A number indicating a society's technological sophistication: the higher the TL, the more advanced the society. Used to describe characters, equipment, and skills native to that technological era. See p. 22.

template: A partially completed character sheet that contains all the traits needed to play a role (*character template*) or a member of a given race (*racial template*). See Chapter 7.

TL: See *Technology Level*.

trait: A character "building block" that affects game play and costs character points to add, modify, or remove. Includes attributes, secondary characteristics, advantages, disadvantages, quirks, skills, and techniques. See p. 13.

turn: One second of combat action by a specific character. It starts when he picks a maneuver and ends when he picks his next maneuver. It overlaps the turns of other combatants, but it is not entirely simultaneous with them. See p. 362.

wealth level: A description of a character's financial situation. Positive wealth levels are an advantage, and increase starting wealth; negative wealth levels are a disadvantage, and reduce starting wealth. See p. 25.

Will: A secondary characteristic, computed from IQ, which measures resistance to fear, stress, social pressure, and supernatural powers. See p. 16.

Will roll: A success roll against Will, made to determine whether a character has the "willpower" to do (or not do) something. See p. 360.

worldbook: A game supplement that gives a detailed background for a particular game world, along with rules for the special situations, abilities, hazards, rewards, etc., found there.

wounding modifier: A conversion factor between penetrating damage and actual injury. This depends on damage type, and also on the nature of the target. See p. 379.

LUDOGRAPHY

With so many supplements already in print for the first three editions of ***GURPS,*** there's lots of support material available to jump-start your game. The following books are still in print and easy to use with ***GURPS Fourth Edition.*** The descriptive material, of course, is usable as is. Rules adaptation will be minor . . . e.g., recalculating point totals and changing the names of some abilities.

SOURCEBOOKS

"Sourcebook" supplements are not associated with particular game worlds. They provide support material that the GM can mix and match in almost *any* campaign.

Atomic Horror. B-movie "reality" of the 1950s: commie spies, giant ants, and bug-eyed aliens.

Best Of Pyramid 1 and ***Best Of Pyramid 2.*** Digests of selected ***GURPS*** articles from SJ Games' *Pyramid* magazine.

Cliffhangers. Two-fisted heroism in the spirit of 1920s and '30s pulp fiction.

Cops. Police adventure of all kinds, from no-nonsense procedurals to the excesses of action movies.

Covert Ops. Secret wars – whether they involve commandos, criminals, spies, or terrorists.

Horror. Terrifying tales, supernatural suspense, and gory splatter.

Illuminati. How to run a conspiracy campaign: high weirdness, Men in Black, and Secret Masters.

Magic Items 1, Magic Items 2, and ***Magic Items 3.*** Treasuries of magical artifacts.

Space. Adventures in space, from "hard" science fiction to "ray gun and cutlass" space opera.

Special Ops. Hard-core military action involving elite troops.

Steampunk. Historical science fiction in the spirit of Verne and Wells, with steam-powered difference engines and giant airships. The ***Screampunk*** supplement gives advice on adding in horror elements. ***SteamTech*** is a catalog of steampunk gear; the game stats will require some conversion, but the ideas behind the items are usable as is.

Transhuman Space. Optimistic future history where biotechnology, cybernetics, and nanotechnology redefine "human" and make it possible to colonize the solar system. Ten supplements flesh out the setting; all but ***Personnel Files*** and ***Spacecraft of the Solar System*** should be usable in ***GURPS Fourth Edition*** with very little trouble.

Warehouse 23. Warehouse of *weird* items, from UFOs to the Spear of Destiny.

WORLDBOOKS

A "worldbook" presents one particular game world in detail. It gives extensive advice on how to run a campaign there, recommends suitable characters, and includes rules for setting-specific abilities, artifacts, creatures, and so on.

Players of Infinite Worlds, ***GURPS Fourth Edition's*** official setting, will find these books extremely valuable. The historical worldbooks can be used as guides to "echo" timelines, and the others provide more-fantastic parallel worlds.

Age of Napoleon. The world, especially Europe, during the life and times of Napoleon Bonaparte (1769-1821).

Alternate Earths and ***Alternate Earths 2.*** Samplers of "what if" worlds, split off from Earth's actual timeline. Highly recommended for Infinite Worlds games.

Arabian Nights. The Islamic Middle East of the seventh through 13th centuries.

Cabal. Horror-conspiracy setting in which the Earth – in fact, the entire *universe* – is controlled by a secret alliance of powerful wizards and demigods.

Celtic Myth. Britain and Ireland, from prehistory up to the fifth century, with special emphasis on folklore and myth.

Egypt. Ancient Egypt, from prehistory to the end of the Ptolemaic Period (30 B.C.).

Goblins. Twisted, humorous version of Georgian England populated by deformed (and mostly insane) goblins.

Greece. The Heroic Age (1600 B.C.-1150 B.C.) and Classical Age (800 B.C.-323 B.C.) of ancient Greece.

Imperial Rome. Rome during the Republic (509 B.C.-28 B.C.) and Empire (27 B.C.-476 A.D.).

In Nomine. Adaptation of SJ Games' ***In Nomine*** RPG. The PCs are angels and demons involved in the struggle between Heaven and Hell.

IOU. *Anything* goes at Illuminati University, as long as it's weird. The only entrance requirement is your sense of humor!

Mars. The planet Mars, in reality and as it appears in speculative fiction.

Middle Ages 1. England, 410-1485: the end of Roman rule to the death of Richard III.

Old West. The 19th-century American West. Cowboys, Indians, frontiersmen, and the Gold Rush.

Vikings. Scandinavia during the "Viking Age" of the eighth through 11th centuries.

WWII. A detailed and self-contained World War II game setting. Has several supplements which cover the nations, technology, and militaries of WWII; of special note for Infinite Worlds games is ***Weird War II.***

Y2K. An anthology of late 20th-century fatalism by noted ***GURPS*** authors.

LICENSES

These worldbooks are based on popular books, films, or other games. They can be used for standalone ***GURPS*** campaigns, for ***Infinite Worlds*** crossovers, or as source material for fans of the original property.

Alpha Centauri. Adaptation of *Sid Meier's Alpha Centauri,* a computer game from Electronic Arts Inc. "Transhuman" science fiction set on an alien world.

Blue Planet. Futuristic adventure on an alien water world. Adapted from the Fantasy Flight Games RPG.

Castle Falkenstein. A world of steampunk and sorcery. Adapted from the R. Talsorian Games RPG. Supported by a supplement on the Near East, ***The Ottoman Empire.*** Easily usable with Infinite Worlds.

Discworld Roleplaying Game. Based on the humorous fantasy of Terry Pratchett. Supported by ***Discworld Also.***

Hellboy Sourcebook and Roleplaying Game. Based on Mike Mignola's *Hellboy* comics. Defend the Earth from paranormal threats and evil Nazis! Prime material for an Infinite Worlds game.

Traveller. The ***GURPS*** version of the classic Game Designers' Workshop RPG. Space adventure at its finest! There are dozens of supplements; see our website for a list. ***GURPS Traveller: The Interstellar Wars*** will include ***GURPS Fourth Edition*** rules for the ***Traveller*** setting.

Lensman. Space opera on a galactic scale, set in the starkly astounding world of E.E. "Doc" Smith's Lensman novels.

Myth. High-powered fantasy in a world of never-ending conflict. Adapted from the *Myth* and *Myth II* computer games, from Bungie Software Products Corporation.

New Sun. Dark fantasy . . . in a futuristic world. Based on the award-winning novels of Gene Wolfe.

Planet of Adventure. Based on the works of Jack Vance. Classic science-fiction adventure on the planet Tschai.

Uplift. Far-future space adventure in the universe of David Brin's Uplift series.

Campaign Planning Form

GM: _____ Date: _____

Campaign name: _____ Starting year: _____ Rate game time passes: _____

Genre: _____ Realistic or cinematic? _____ Are there multiple planes of existence? _____

General theme of campaign: _____

Campaign Background

Campaign's base city, nation, empire, or planet: _____. (Suggestion: provide a map.)

Society/government type: _____ Control Rating: _____ Exceptions to general CR: _____

Tech level: _____ Exceptions to general TL: _____

Brief description of important neighboring powers, political/economic situation, etc.:

_____

Suggested or required reading for players: _____

Information for PCs

Starting point value allowed for PCs: _____ Disadvantage limit: _____

Especially useful/useless character types: _____

(Suggestion: provide character templates.)

Especially appropriate/inappropriate professions: _____

(Suggestion: provide job descriptions.)

PC races allowed: _____

(Suggestion: provide racial templates.)

Starting wealth: _____ Starting Wealth levels allowed: _____

Starting Status levels allowed: _____ Starting TLs allowed: _____

Languages available: _____

Cultural Familiarities available: _____

Required advantages, disadvantages, and skills: _____

Especially *appropriate* or *inappropriate* advantages, disadvantages, and skills: _____

_____

_____

Appropriate Patrons (and base value): _____

Appropriate Enemies (and base value): _____

Special Abilities Allowed for PCs

- Exotic/supernatural traits: _____

_____

- Cinematic skills: _____

_____

- Are PC mages allowed? _____ General mana level: _____ Do areas of higher/lower mana exist? _____

  Are any of the spells from Chapter 5 off limits? _____

- Are PC psis allowed? _____ Are any of the powers from Chapter 6 off limits? _____
- Are PC gadgeteers allowed? _____ Are there special limits on gadgeteering? _____
- Unusual Background cost(s) for these abilities: _____
- Legal or social restrictions on these abilities: _____

Other Notes

Book 1 optional rules or variants (advantages, disadvantages, skills, etc.): _____

_____

Book 2 optional rules or variants (success rolls, combat, injury, etc.): _____

_____

_____

This form, those on the following pages, the Character Sheet, and other ***GURPS*** *forms and support material may also be downloaded at* **www.sjgames.com/gurps/resources/.**

GM Control Sheet

Character Name and Player	Reaction + or -	ST	DX	IQ	HT	Will	Per	Basic Speed	Move	DR	HP	Current HP

SPECIAL ABILITIES

Character	Abilities

Name: _____
Appearance: _____

____ **ST** HP: _____
____ **DX** Basic Damage
____ **IQ** *Thrust*: _____
____ **HT** *Swing*: _____
FP: _____
Will ____ Per _____
Basic Speed: _____ Move: _____
Encumbrance: _____
Dodge: ____ Parry: ____ Block: ____
Shield DB ____ Size Modifier ____

	Head	Torso	Arms	Hands	Legs	Feet
DR						

Reaction +/-: _____ Point Total: _____
Advantages, Disadvantages, Quirks: _____

Skills: _____

Weapon Statistics: _____

NPC Record Card

To make it easy to keep track of NPCs, all necessary data can be kept on a 3" × 5" card. A box-ful of foes is easy to use; you can even use a paper clip to fasten the appropriate ***Cardboard Heroes*** figures to each card.

Name: Dai Blackthorn
Appearance: Short; honest face

8 **ST** HP: 10
15 **DX** Basic Damage
12 **IQ** *Thrust*: 1d-3
12 **HT** *Swing*: 1d-2
FP: 10
Will 12 Per 15
Basic Speed: 7.00 Move: 7
Encumbrance: None (0)
Dodge: 10 Parry: 10 Block: N/A
Shield DB N/A Size Modifier 0

	Head	Torso	Arms	Hands	Legs	Feet
DR	0	0	0	0	0	0

Reaction +/-: 0, usually Point Total: 250
Advantages, Disadvantages, Quirks:
Absolute Direction, Danger Sense, Flexibility, Perfect Balance, Warp; Overconfidence (12), Sense of Duty; Dislikes deep water (quirk)

Skills:
Acrobatics-15, Body Sense-16, Fast-Draw (Knife)-15, Guns (Pistol)-15, Knife-17, Shortsword-15, Thrown Weapon (Knife)-17

Weapon Statistics:
Fine Large Knife: 1d-3 cut/1d-2 imp (thrown: 1d-2 imp, Acc 0, Range 6/12, Bulk -2)
Holdout Pistol: 2d pi, Acc 1, Range 125/1,500, RoF 3, Shots 5+1(3), Bulk -1, Rcl 3

Time Use Sheet

Character _____ Played by _____
Period of time covered _____

Time use:

Sleep: 56 hrs/week (+/-7 per level of Extra/Less Sleep)	
Meals, personal care, etc	20
Job: time spent depends on job (if unsure, assume 40 hrs)	
Travel (depends on adventure and situation)	
Religious observances, etc	
Entertainment	
Study of _____ skill	*
Study of _____ skill	*
Study of _____ skill	*
Study of _____ skill	*
Study of _____ skill	*
Study of _____ skill	*
Long Task: _____	
Long Task: _____	
Long Task: _____	
TOTAL: per week	168 hours

Automatic Cultural Familiarity and Language study: If you are in a foreign land and interacting with the locals in day-to-day life, you can claim an automatic 4 hours per day toward both the local Language and Cultural Familiarity with the local culture (see p. 23).
Hours of automatic Cultural Familiarity study (4/day): _____
Hours of automatic Language study (4/day): _____

Automatic study on the job: If your job involves a skill (and most do) you can count ¼ of the time spent on the job as "study." This time may be split between multiple, job-related skills.
Hours of automatic job study (¼ time spent at work): _____

Study bonuses for magical intervention, mechanical education, etc.:
Skill: _____ Study equivalent (hours): _____
Skill: _____ Study equivalent (hours): _____
Skill: _____ Study equivalent (hours): _____
Skill: _____ Study equivalent (hours): _____

Other notes:

* Every 2 hours of self-teaching, 1 hour of education, or 0.5 hour of intensive training counts as 1 hour toward learning the skill.

Purchaser may copy this form for personal use only.

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