

PYRAMID[®]

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ALTERNATE GURPS V



OPUS LONGA, PUGNA BREVIS

Sean Punch

THE FIFTH ATTRIBUTE

Christopher R. Rice

CONDITIONAL INJURY

Douglas Cole

DESCRIBING VEHICLES

David L. Pulver

STEVE JACKSON GAMES

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ARTICLE COLORS

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Pale Blue: In This Issue

Brown: In Every Issue

Green: Columnist

Dark Blue: GURPS Features

COVER ART

Abrar Ajmal

IN THIS ISSUE

Infinite possibilities wrapped around an easy-to-understand core, **GURPS** is a perfect system for tinkerers, like a cosmic roleplaying-game craft shop or home-improvement store. Sometimes you want to really experiment with what's possible. This issue is devoted to alternate **GURPS** – new ideas that push the envelope of what the system is and does.

When combat overlaps with long specialist tasks, there's always the danger of folks losing interest... but you can keep the excitement high for everyone with *Opus Longa, Pugna Brevis*. Sean Punch – mastermind of the **GURPS Action** series – shows you how to repurpose haste and chase rules to make sure everyone always has something to do. He also provides guidelines for using combat-style resolutions to deal with every situation, regardless of whether it involves fighting.

In this month's Eidetic Memory, David L. Pulver – author of the **GURPS Spaceships** series – provides a step-by-step process for *Describing Vehicles*. This feature provides all the information you need to assign **GURPS** stats to real-world vehicles, using the Lockheed SR-71 Blackbird as an example and including several tables loaded with samples.

When you want you a little more fine-tuning for your hero with extraordinary abilities – and you don't mind messing with a foundational element – consider adding *The Fifth Attribute*. Christopher R. Rice – co-author of **GURPS Dungeon Fantasy 19: Incantation Magic** – reveals the nature of Quintessence and how it can be used to measure a person's control over supernatural energies. You'll also get tips for combining it with any of several systems for magic and the paranormal.

The venerable Hit Points system is great for tracking abstract harm with numerical precision, but sometimes you want to shake things up with *Conditional Injury*. Douglas Cole – author of **GURPS Martial Arts: Technical Grappling** – demonstrates an effects-based system for tracking wounds. Learn about the new Robustness Threshold trait, how to determine damage and the effects of injury, and how to recover from wounds. You'll also get a few new ways to make this system even more interesting.

Finally, this month's Random Thought Table looks at how to shake up the concept of progress, replacing (or augmenting) the standard skill-progression system with a system of fluctuating skills. If you've ever wondered why a pulp hero can be a martial-arts master one month and barely above-average the next, this idea might be for you.

Whether you want to shake things up, unleash new magic, or give your campaign a new set of wheels, this issue has something to jumpstart your imagination.

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FROM THE EDITOR

SHELF CARE

A number of years ago, I decided to make a bookshelf for myself in our house. I found a plan online, which seemed relatively forgiving in terms of measurement, tools required, and skill level. Since I lacked all of those things and more, it seemed like a good fit.

That initial bookshelf used a power drill, hacksaw, and wood sawed by the hardware store we bought the lumber from. We managed to transport everything home in a small sedan. True to its word, the plans were sound, and I cobbled it together quickly and easily enough. There were many things I did wrong with it – uneven holes, strange slopes, unpainted wood, jerry-rigged parts – but it still stands today in the bedroom, functioning as a 5'-wide floor-to-ceiling custom bookshelf for my graphic-novel collection.

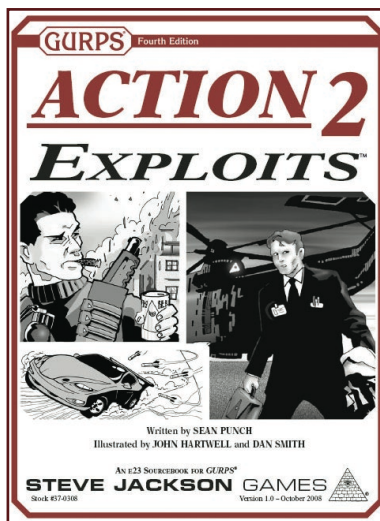
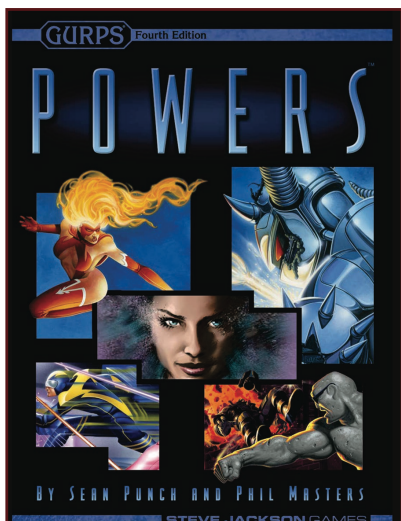
I took the skill I acquired from that process to make another bookshelf of the same design, this one in the entry hallway. I painted for the first time, and discovered many fascinating and incorrect ways to apply paint to wood. But the holes were straighter, the cuts more precise, and the whole thing came together well, looking like a built-in part of the house.

A year or so ago, I used what I learned to make a wall-sized “entertainment center” for my son’s redesigned bedroom. I used a drill press acquired in the intervening years to make perfect holes, and applied my hard-earned painting expertise. I rejiggered the plans to fit his television and video-game systems perfectly, added lots of storage options, and painted it jet black to match his new loft. It made his bedroom truly special.

I’m reminded of this process as I think about **GURPS**, and how fascinating it is to build something new and wonderful, based on pieces you already know, and experimenting with new and exciting bits. Each issue of *Pyramid* tries to provide some of those new bits for your own games, waiting to be put to good use. This month’s *Pyramid*, especially, is devoted to those doing strange and daring things to their games, all in pursuit of something amazing. I hope it finds a good home on your shelves . . . however you may design them.

WRITE HERE, WRITE NOW

How does *Pyramid* fit into your game-improvement plans? Don’t be *shelf-ish*; let us know! Write privately to pyramid@sjgames.com, or join the do-it-yourself community at forums.sjgames.com.



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OPUS LONGA, PUGNA BREVIS

BY SEAN PUNCH

In *GURPS*, heroes normally deal with rivals through either Contests (pp. B348-349) or series of discrete attack rolls, defense rolls, and rolls for effect (such as damage). By contrast, they most often handle inanimate dangers, puzzles, and obstacles by making a single, unanswered skill roll: disarm the bomb or trap, figure out the controls, open the lock, repair the gadget, etc. Making an *opponent* difficult involves giving that adversary higher attributes, skills, and active defenses, leading to longer and (with any luck) more dramatic encounters. Engineering a tougher *situation* mostly amounts to penalizing PCs' skill rolls.

Usually that's fine! Adventure games are traditionally about *teams*, with each member tackling specific kinds of tasks: the burglar disarms, the cleric or doc heals, the detective or scout investigates, the face talks, the whiz kid casts spells or does lab work, and so on. Speedy skill rolls let experts do their part without turning the session into a "mini-game" that's fun for one but boring for the others.

Combat is special because it directly engages and endangers *everyone* – not just the warriors – so it customarily enjoys extra time and detail. But what happens when combat or similar action (such as a chase) overlaps a specialist task? If the task requires a single-digit number of Concentrate or Ready maneuvers and/or a skill roll (e.g., casting a spell to unlock a door or heal a friend, exploiting a social skill to mislead the enemy, making a Tactics roll for the team, or completing one of the long actions listed on p. B383), it fits well enough into combat pacing to require no special treatment. If it takes longer – well, now it's the *expert* who's bored.

GURPS offers a couple of rules to address that: *Time Spent* (p. B346) and *Rounds* (*GURPS Action 2: Exploits*, pp. 31-32). Read on to learn how to repurpose those, and for a whole new option: *Life Is a Battlefield* (pp. 6-8).

HASTE

If a task is one for which working faster makes sense *and* involves a success roll, the heroes can voluntarily take penalties to *force* it into combat time; see p. B346. The feats players most often want to rush take minutes to an hour. Examples:

- One minute to attempt Escape (p. B192) or Lockpicking (p. B206), tie up a helpless foe (p. B401), or bandage (p. B424) or resuscitate (p. B425) an ally.
- At least one minute to cut a fence (*GURPS Action 2: Exploits*, p. 20).

- One minute to set a fantasy trap with the Traps skill (*GURPS Dungeon Fantasy 2: Dungeons*, p. 12), or 10-30 minutes to set a realistic trap using Survival (p. B223).

- For quick gadgeteers, 1d minutes to figure out strange technology, and then 1d×10 minutes to modify it (p. B477).

- Five minutes to defuse a cinematic bomb (*Exploits*, p. 28).

- Up to 30 minutes to render First Aid (p. B424).

- Half an hour for minor repairs (p. B484).

- An hour to fix a weapon with a mechanical or electrical malfunction (p. B407).

For a one-minute task, reducing time by 90% *might* suffice; after six turns, roll at -9. Longer actions – and possibly even one-minute feats, in desperate situations – take too long for that, and require the GM's permission to try instant use at -10.

If the task requires equipment – bolt cutters, first-aid kit, lockpicks, toolkit, etc. – *it still does*, unless the player wants to eat *Equipment Modifiers* (p. B345) on top of haste penalties. As well, the gear's user must be in reach of the person or thing being worked on (in the same hex or an adjacent hex, on a battle map). This can necessitate Ready maneuvers to dig out tools (see *Not-So-Long Actions*, p. 5) and Move maneuvers to get into place – and that's fine, because it gives the expert something to do!

Twist: That "Forever" Seemed to Last an Instant

Instant feats can overcorrect the problem, leading to too much happening in too little time, and to players trying to abuse such deeds as free actions (pp. B363-364). To curb this, the GM may rule that for anything that takes one minute or longer, "instant" is relative and actually one second: a Concentrate maneuver for IQ-, Will-, or Per-based tasks, a Ready maneuver for ST-, DX-, or HT-based ones.

If permitting haste for tasks that take hours, plural – e.g., realistic computer hacking and safecracking – bump "instant" up to one second *per hour*. Optionally, allow players to reduce even this incredibly short time, to a minimum of one second, at an extra -1 per second shaved off. For instance, if hacking The Computer takes an eight-hour workday, "instant" takes eight seconds and a Computer Hacking roll at -10; when The Computer is shooting death rays, you might try to do this in one second, at -17!

Twist: Not-So-Long Actions

The long actions on p. B383 rarely take a minute – but most don't specify a skill roll. Adventurers may opt to speed up tasks that take *at least two seconds* by making a haste-penalized DX roll or DX-based roll against any skill the GM agrees seems suitable; e.g., Artist (Calligraphy) or Writing to scrawl a brief note, Filch or Lifting to grab something, Holdout or Sleight of Hand to pocket an item, Search or Soldier to rifle through one's *own* gear, or Survival to strike a flame and light something. This is a great opportunity to dust off rarely used skills!

Reduce time in 10% chunks, dropping fractions; for variable-length tasks, the player may roll for time required before choosing the reduction. Genuinely instant results *are* possible – and are free actions at the *start* of a turn – for anything that normally takes less than one minute. Roll against skill at the end of the final Ready maneuver (immediately, for a free action), at the standard -1 per 10% time reduction.

Any success means the task is complete. Failure indicates that the Ready maneuvers were wasted, or if the task was instant, that the hasty hero's turn ends and is wasted; it's possible to start over. Critical failure *also* means the relevant equipment was dropped or damaged, preventing a repeated attempt.

Example: A dungeon-crawling hero needs 2d seconds to find a scroll in her backpack. The roll is a 7; dropping fractions, -1 is six seconds, -2 is five, -3 is four, -5 is three, -6 is two, -8 is one second, and -9 is truly instant. She has DX 14 and Search at Per+1, so DX-based Search is 15. She risks -5. After three Ready maneuvers, she rolls against $15 - 5 = 10$, gets an 8, and whips out the scroll. Had she rolled 11-16, she'd have wasted three seconds. On a 17-18, the GM could rule she also *tore the scroll in half!*

ACTING AT THE SPEED OF DRAMA

GURPS Action 2: Exploits runs chase scenes in abstract "rounds" that permit each participant to try something cool. Rounds have no fixed length; they're units of action, of drama. What's important is that each round, anybody who *isn't* involved in the chase or associated violence may attempt one task that takes at most one minute (e.g., picking a lock), at no penalty for haste.

The aim of those rules is to give everybody something to do: Those *in* the chase (or combat) are rolling to run around and do action stunts. Those *outside* are rolling for their specialist tasks. Nobody is left out.

The trick when adapting this to second-by-second combat, where turns are the natural units of action, is to use turns as

rounds and push all the fuzziness into what's possible in a mere second:

- Those attempting lengthy tasks choose Concentrate maneuvers for IQ-, Will-, or Per-based tasks, Ready for ST-, DX-, or HT-based ones.

- At the *end* of each turn, they roll against the relevant skill at the usual modifiers for task difficulty, equipment, etc. (Haste isn't normally allowed, but see *Improv!*, p. 6).

- Success adds margin of success, minimum 1 for success by 0, to a running total; failure subtracts margin of failure from this tally.

- When the running total reaches seconds equal to the time for the task, it's done!

Example: A **GURPS Action** infiltrator with Lockpicking-14 and fine-quality picks (+2) is working on a slightly fussy lock (-1); his effective skill is 15. He rolls each turn while allies hold off enemies. On average, he'll roll 10 and beat skill by five, adding five to his total each turn. A lock takes 60 seconds to pick, so the team must buy about 12 seconds.

Enemy action *does* matter. On any turn after using an active defense, taking injury, or otherwise being distracted, the hero must make a Will roll at -3; failure permits no skill roll that turn. Being knocked down or restrained means being in the fight – skill rolls are possible only after dealing with the problem.

Exception: The GM may permit someone who's *partially* restrained – e.g., grappled by the torso but not the arms, and not pinned – to roll for distraction each turn and, if successful, try a skill roll at -4.

Such interference doesn't *ruin* the effort – it just slows things down. In any case, the hero has something to do each turn, be that working on the task, resisting distraction, or hastily fighting off foes!

Twist: Everyone's a Critic(al)

If effective skill is high enough that the task would probably succeed out of combat, success is assured . . . eventually. The risk of remaining in a dangerous situation for long enough to try *many* rolls replaces that of instant failure on one all-or-nothing roll. Allies holding off the enemy are usually who's facing the risk, but that's fine – that means the rules reward teamwork, which is a good thing.

Still, critical success and critical failure also serve to heighten excitement, risk, and drama, and the GM might not want to lose that. Optionally, critical success can multiply margin of success: *quadruple* on a natural 3, *triple* on a 4, or *double* on any higher roll that's still a critical success.

Variations of pace make the dramatic journey an exciting one for the audience. If the rhythm and speed of your work stay the same throughout, the performance will all be on one level and lacking in excitement.

– "Structure of a Play," Bitesize,
bbc.com/bitesize/guides/zcdhr82/revision/6

Example: That infiltrator with effective skill 15 scores a critical success on a roll of 3-5. On a 5, the margin is 10 but counts as 20. On a 4, it's 11 but counts as 33. And on a 3, it's 12 but counts as 48.

But if critical success matters, so should critical failure! That resets the tally to zero – and if the task is dangerous, like disarming a trap or bomb, the usual bad results occur. If that doesn't obviate the need for the task (say, by blowing up the hero), it's possible to restart from scratch.

This makes Luck *very* useful! Someone who's almost done might risk it to sprint for a critical success that saves a turn or two (rolling three times gives about a 6% chance of that at skill 14 or less, 13% at skill 15, or 25% at skill 16+), or reserve it to ensure against a last-minute screw-up (and possibly *still* get a critical success on a reroll).

Detective Stella Bonasera: This is in real time.

*Detective Lindsay Monroe:
I'll create a GUI interface using
Visual Basic . . . see if I can track
an IP address.*

– **CSI: NY** #4:20

Twist: Improv!

Players might ask, "Can I combine haste with this?" If the GM wants capable heroes to be even larger than life, why not? On turns when somebody wants to work faster, they can gamble. Roll at any penalty from -1 to -10. Any *success* adds margin plus *triple* the penalty's size; any *failure* subtracts the same.

Example: Defusing a bomb in **GURPS Action** takes five minutes (300 seconds), so even a demolition man with Explosives (EOD)-20, rolling on average a 10, needs about 30 seconds. Combat rarely lasts that long – especially when people are shooting near a bomb! The player decides it's worth risking -6 and rolling against skill 14. On average, that means a margin of only four, but +18 for taking -6 adds 22 to the tally. This reduces the probable time to just under 14 seconds.

If using this rule with *Everyone's a Critic(al)* (pp. 5-6), critical success modifies just the margin, not the bonus. For instance, if the demolition man in the previous example rolls a 3, that quadruples the *margin* from 11 to 44 and *then* adds 18, for a final 62; it doesn't quadruple (11 + 18) to 116! Critical failure still wipes the tally and possibly has other bad results.

LIFE IS A BATTLEFIELD

The previous rules best suit campaigns where the heroes boast masterful skill levels, allowing them to absorb large haste penalties and score impressive margins of success. They aren't all that fun when rolling against the modest skill levels of ordinary folks (p. B172) – say, 8-13. They're also unopposed; the real enemies are time and bad luck.

A radical option starts with the idea of gradually completing a task, as in *Acting at the Speed of Drama* (pp. 5-6), but treats the ordeal as an actual fight! Those facing challenges *attack* the problem, and mistakes are painful. This requires some willing suspension of disbelief, and is easiest to accept for *dangers*: acid, explosives, fire, poison, traps, out-of-control machinery, etc. The risk needn't be direct physical injury to the problem-solver, but the approach doesn't make much sense for, say, library research or data entry.

Defining the Problem

The trick in this system is to define problems in ways that make sense and – more important – make them *fun*. Four parameters describe each challenge.

Skill Required

The skills the heroes need don't change. They use Explosives to defuse bombs, Traps to disarm traps, Hazardous Materials to clean up toxic waste, First Aid to dress wounds, Lockpicking to open locks, Computer Hacking to hack computers, and so on. What's different is *how* they use these skills; see *Attacking the Problem* (p. 7).

Intricacy

Were the problem an opponent in a fight, how skillful would it be?

Intricacy should be comparable to combat skill levels for the campaign's NPC adversaries. Ways to lock it down include:

- Convert skill penalties into opposing skill levels as **GURPS Action** does with Basic Abstract Difficulty (BAD). Tasks in a given scene are at from 0 to -10, and when NPCs appear, their effective skill is 10 + the absolute value of this: 10 at 0, 11 at -1, 12 at -2, and so on. Thus, a trap disarmed at -5 has Intricacy 15.

- If someone specific deliberately creates a problem, use the troublemaker's skill; e.g., somebody with Traps-16 sets traps with Intricacy 16.

- If the PCs want to use skill rather than brute-force damage to overcome a random, *dangerous* obstacle not strongly linked to a scene or person, use object HT: Intricacy 12 in most cases, but as high as 13-14 for stout barriers. This works well for things like barbed-wire fences.

- If treating injuries, go with (25 - victim's HT), or Intricacy 15 for HT 10, 14 for HT 11, and so on. Rushing medical aid should always be *risky*.

If Intricacy is much lower than PC skill levels, take inspiration from "... *With Spikes*" (**GURPS Dungeon Fantasy 2: Dungeons**, p. 7): Each nasty qualifier or intensifier for a task gives +1 to Intricacy.

Durability

Were the problem an opponent, how much punishment could it sustain before giving up the fight?

Durability is depleted by “attacks” on the problem or obstacle – much as Hit Points are chipped away by actual physical attacks. It’s normally linked to the standard time to complete the task. A fair way to rate it is to double the time in minutes for the task out of combat, then consult the *Object Hit Points Table* (p. B558), use this figure as “Weight,” and read Durability from the “Homogenous/Diffuse” column. Thus:

Time	Durability	Time	Durability
1 minute	10	10 minutes	20
2 minutes	12	20 minutes	24
3 minutes	14	30 minutes	28
4-5 minutes	16	60 minutes	36
6 minutes	18		

It’s possible to use HP where that would makes sense and be higher (as for a robust trap). If so, DR doesn’t matter. That isn’t usually ideal, though – if whacking stuff with a sledgehammer would work, just use the standard combat rules!

The problem persists while *any* Durability remains. The task is complete at Durability 0. There are no in-between effects like stun, crippling, or unconsciousness – but the GM may opt to let Durability reductions provide partial benefits when treating wounds:

Gradual Healing: When treating injuries using these rules, maximum healing is equal to what first aid can accomplish (p. B424). It’s fun to restore HP gradually as Durability is reduced. For instance, TL3 first aid takes 30 minutes (Durability 28) and restores at most 3 HP, so the GM might have each 9 Durability correspond to 1 HP regained; TL8 first aid takes 10 minutes (Durability 20) and restores a maximum of 6 HP, so each 3-4 Durability might correspond to 1 HP.

Consequences

Were the problem an opponent, what would happen if it got the better of you?

Consequences are rarely worse than one point of damage to the problem-solver, if disarming a trap, extinguishing a fire, neutralizing poison gas, etc. This represents the result of a scant second of exposure at the remove of tools – a quick “Ouch!” – though *serious* dangers can do worse at the GM’s discretion. All-or-nothing traps don’t go off; they *almost* go off and the person disarming them sticks a hand in the way, gets a shock from the trigger circuit, absorbs a tiny amount of poison, etc. The goal is to build drama.

Damage *type* still matters because of damage effects: impaling damage from a toothy trap is doubled for injury, accumulated burning damage might set the victim aflame, and enough toxic damage can trigger side effects or symptoms. Note this! In all cases, DR is irrelevant.

Once again, medical treatment – if the GM chooses to handle it this way – presents an exception:

Harm Reduction: If it’s possible to heal just 1d-4 to 1d+1 HP with first aid, it’s only fair to use the same rules to set the maximum *harm* from medical tasks: 2 HP. Read this as direct HP loss at the rate of 1 HP per successful “counterattack.”

After 2 HP, interpret this as 1 FP per incident, due to blood loss. Harm is to the patient, not the medic.

Attacking the Problem

This system is intended to complement standard combat. It posits that those working on problems are *fighting* them. Each turn, they choose a maneuver:

Attack: Roll against the usual skill for dealing with the issue, as if it were a combat skill! Modifiers for shock, darkness, and anything else the GM thinks would make such work harder apply, as do *Equipment Modifiers* (p. B345). It’s possible to try Deceptive Attack (p. B369), at the standard penalty, to emulate an unorthodox approach; haste *isn’t* allowed, but Rapid Strike (p. B370), also at the usual penalty, allows faster work. There are no task difficulty modifiers – that’s what Intricacy, Durability, and Consequences are for. The problem makes a defense roll against 3 + *half* its Intricacy. If the attack succeeds and the defense fails, the hero rolls for Effect (below).

All-Out Attack: As Attack, but permitting one roll at +4 to skill (Determined) or +2 to Effect (Strong), an extra attack (Double), or even a Feint. This *does* mean the hero has no active defenses against not only “counterattacks” from whatever they’re working on, but also attacks from foes in the fight! This represents ignoring everything to focus on the problem.

Evaluate: To get around low effective skill when All-Out Attack (Determined) is too risky. Against inanimate problems, maximum bonus is the same as that for taking extra time out of combat: +5, after five turns.

Feint: To take extra time to work around the “defenses” of complex problems with high Intricacy.

Other maneuvers and combat options are irrelevant here, but remain possibilities in combat in general.

Critical Hits and Misses

In *Life Is a Battlefield*, a critical hit means no defense is possible and that the attack inflicts maximum Effect or Consequences (if variable). A critical miss has no special meaning when a problem rolls one . . . but if a problem-solver critically misses, they suffer a free hit that inflicts normal Consequences.

Many Hands Make Light Work

When using *Life Is a Battlefield*, if the GM agrees that several people could share a task, *each* person doing work may pick maneuvers in an effort to reduce its Durability. However, the problem can *always* defend at 3 + half its Intricacy. Likewise, it *always* gets a counterattack against each person who attacked since last turn, at full Intricacy and for full Consequences.

Rolling for Effect

If the person working lands an “attack,” they roll **Effect** and subtract it directly from the problem’s Durability (there’s no equivalent to DR or damage type).

And what is Effect? For technical work, “thrust damage” figured from IQ as though it were ST is a good start: 1d-2 for IQ 10, 1d-1 for IQ 11-12, 1d for IQ 13-14, and so on.

In a larger-than-life game, it’s fun to have skill matter for more than attacking and defending. Treat it like Forced Entry or Karate, and have relative skill give a bonus per die of Effect: +1 *per die* at a skill level of attribute+1, +2 *per die* at attribute+2 or better.

In a *really* over-the-top game, simply base effect on skill instead of IQ. Thus, a thief with Traps-18 rolls 1d+2 for Effect.

Good equipment affects skill when attacking but might also boost Effect. This could just be a matter of improving skill for one of the two options above. But in a campaign that makes much use of these rules, gear could be rated for skill bonus *and* Effect bonus, much as magic swords can give bonuses to hit or to damage.

Facing the Consequences

While a task’s Durability is greater than 0, it gets a chance to “counterattack” those working on it. It has Basic Speed 0.00 and acts last in the combat sequence. If nobody did any work on it since *its* last turn, it takes the Do Nothing maneuver. But if anybody took Attack, All-Out Attack, or Feint against it (Evaluate is safe!), it responds to that person with its own Attack. Roll this attack against Intricacy.

A target who didn’t All-Out Attack may defend at *half* the skill they’re using for the work, +3. The only modifiers of importance are those caused by afflictions, distractions, and stun. Shields, retreating, posture, facing, and other tactical considerations aren’t relevant. This counts as a parry with *both hands*, should that matter, which means previous parries against animate attackers inflict penalties for repeated parries, and *this* parry has the same effect on later ones.

If this attack succeeds *and* the PC’s defense fails, the problem inflicts Consequences (p. 7).

NONHAZARDOUS PROBLEMS

Some tasks – e.g., picking locks or hacking computers – aren’t likely to injure anyone or anything. *Life Is a Battlefield* isn’t ideal here but can work if *both* sides have something to lose. Assign the hero’s gear Durability equal to the task’s, on the assumption that it’s “up to the challenge”; if it has quality modifiers relative to normal equipment, apply them to Durability. Let the task’s counterattacks inflict thrust damage based on its Intricacy. If the gear hits Durability 0 before the task, it’s compromised and useless; say, a laptop computer has a virus, or lockpicks are bent.

Example: Picking a lock takes one minute. That’s a task with Durability 10, so lockpicks have Durability 10 to match. Fine lockpicks (+2) have Durability 12. If a thief fails to defend against a counterattack from an expensive Intricacy 15 lock, the lock does thrust damage for ST 15, 1d+1, to the Durability of the lockpicks. If they reach Durability 0 before the lock, they’re ruined!

ABOUT THE AUTHOR

Sean Punch set out to become a particle physicist in 1985 and ended up as **GURPS** Line Editor in 1995. He has written or developed some 150 **GURPS** releases, revised the game into its fourth edition (2004), and contributed regularly to *Pyramid*. Lead creator of the **GURPS** *Dungeon Fantasy* series, he designed the *Dungeon Fantasy Roleplaying Game*, released in 2017. Sean has been a gamer since 1979, but devotes most of his spare time to Argentine tango.

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EIDETIC MEMORY

DESCRIBING VEHICLES

BY DAVID L. PULVER

These guidelines are intended to help assign a modern or historical vehicle's basic statistics based on real-world information that is easily available in published books and online sources. They provide the information needed to *describe*, rather than design, the vehicle. The focus of this article is on the statistics of real-world vehicles, such as cars and airplanes. It doesn't spend much time discussing spacecraft, as *GURPS Spaceships* provides plenty of guidelines for those.

Example: For a black-ops/monster-hunter game, we want to stat up the Lockheed SR-71 Blackbird strategic reconnaissance aircraft, a supersonic spy plane famous as the world's fastest airplane, and also used in variant form by a popular mutant superhero team. Theoretically retired from CIA/USAF use shortly after the end of the Cold War, we assume a few examples were secretly transferred off the books for chasing UFOs and similar missions.

BASIC VEHICLE STATISTICS

A vehicle stat block, such as those found in the *GURPS Basic Set* and *GURPS High-Tech*, looks like the *Air Vehicle* table below. These rules describe how each of the headings and numbers were derived from readily available sources.

Example: For sources, we'll use the first ones that come up in an online search (in this case, Wikipedia).

AIR, GROUND, SPACE, UNDERWATER, OR WATER VEHICLE?

The first thing to decide is how the vehicle moves. In vehicle stat blocks, the movement type is usually fairly obvious, but it can be indicated by a heading such as "Air Vehicles."

There are five basic movement types:

Air: The vehicle flies in an atmosphere, like an airplane or helicopter.

Ground: The vehicle moves on the ground, like a car or wagon.

Space: The vehicle flies in vacuum, like a spaceship.

Underwater: The vehicle can move while submerged, like a submarine.

Water: The vehicle floats on the surface of water (or some other liquid), like a boat.

Some vehicles can operate in multiple environments. You need only specify the performance statistics for the primary environments the vehicle will operate in. For example, you do not need to list ground performance for aircraft that move on land only when they are taxiing on a runway.

Air Vehicle

For additional game details about this craft, see *Notes and Descriptions*, p. 19. Terms and notation are as defined in *Vehicle Statistics* (pp. B462-463).

TL	Vehicle	ST/HP	Hnd/SR	HT	Move	LWt.	Load	SM	Occ.	DR	Range	Cost	Stall	Loc.
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PILOTING/TL (HIGH-PERFORMANCE Airplane)

7	SR-71 Blackbird	163	-1/3	11f	5/1,075	76	2	+7	2PS	5	3,300	\$204M	86	gW3Wi
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If a vehicle operates in two or more environments, its performance will vary and the vehicle will need extra stat block entries (or notes) indicating how they've changed.

Example: The SR-71 is obviously an air vehicle.

SKILL REQUIRED

Air and space vehicles use Piloting (or Shiphandling, if a captain gives orders to a helmsman), ground vehicles use Driving (or for bicycles, Bicycling), water and underwater vehicles use, respectively, Boating and Submarine (or Shiphandling). Assign the relevant specialty based on the descriptions in the **Basic Set**. In some instances, you may wish to wait until you've determined statistics before assigning the specialty.

Example: The description of Piloting on p. B214 indicates aircraft flying faster than 600 mph use Piloting (High-Performance Airplane); we know the Blackbird fits that category, so use it.

*In the space age, man will be
able to go around the world in two
hours – one hour for flying and
the other to get to the airport.*

– Neil McElroy

TECH LEVEL (TL)

Determining the tech level for most vehicles is a simple task: Compare the date it was available for purchase to the tech-level eras on p. B511.

You should not be too rigid about this. If a vehicle appeared a few years before the start date of a TL, but its description suggests it incorporates significant new developments, treat it as belonging to the upcoming TL. Similarly, if it was a conservative design, you might bump it down to the prior TL.

Vehicles also often spend a couple of years, or even longer, in testing and development. In general, it's best to use the TL when the vehicle became *available*, even if the design date would place it earlier.

Example: Our source says the SR-71 entered service in 1966, so that makes it TL7.

STRENGTH AND HIT POINTS (ST/HP)

A vehicle's combined ST/HP statistic is based on how much it weighs (or more precisely, masses) while empty – that is, without any payload or fuel. Reference works that don't specify an empty weight often provide one of these statistics.

Curb Weight: The weight of the vehicle without any cargo or passengers, but with a full tank of fuel. Subtract the weight

of the fuel (e.g., 6 lbs. per gallon for gasoline or diesel) to get empty weight.

Operational Weight: Sometimes listed as “dry operating weight” or “equipped empty weight.” This includes the weight of the crew, provisions, hydraulic and lubricating fluids, and unusable fuel. Subtract 200 lbs. (0.1 ton) per occupant to get an approximate empty weight.

Now, figure out ST/HP. For small vehicles, you can use the “Unliving/Machine” column of the *Object Hit Points Table* (p. B558) to determine this value. For larger vehicles, use the following formula:

$$\text{ST/HP} = 4 \times (\text{cube root of empty weight in pounds}).$$

Round fractions up.

For a powered vehicle, this is both ST and HP. For an *unpowered* vehicle, double this score and mark it with a †; it represents HP only (ST is 0).

Injury Tolerance: Unpowered vehicles have Injury Tolerance (Homogenous). Others have the Machine meta-trait (p. B263), which includes Injury Tolerance (Unliving).

Example: Our source lists an empty weight of 67,500 lbs., so using the formula gives ST/HP 163.

Quick and Dirty

Another way to estimate ST/HP is to take a known length in yards and multiply by 5 if powered or 10 if unpowered. This is fairly accurate for many vehicle designs. For some historical vehicles where data is unavailable, such as ancient ships, this may be the only viable approach.

HANDLING AND STABILITY RATING (Hnd/SR)

These statistics aren't something easily derived from real-world data. Instead, they are game abstractions of how easy it is to operate the vehicle, so there is no right or wrong way to calculate them. The first number is always Handling; the second is Stability Rating. See *Control Rolls* (p. B466) for details on using these values.

In most instances you need to determine the values only for the vehicle's primary operating regime (e.g., air for aircraft).

Handling

This is a measure of maneuverability and ease of control. Handling modifies all control rolls, especially those made in potentially hazardous situations. A vehicle that tends to “fight” the operator will have a low Handling, while those that can turn on a dime possess a high Handling.

Assign a rating based on the guidelines in the table on p. 11. These are simply guidelines; a vehicle notably more or less agile than usual for its category should get +1 or -1.

Example: Reading a description of the SR-71 indicates it is a recon aircraft that also had an early interceptor version. It's designed for speed and altitude, not maneuverability. Looking at the descriptions on the table, it probably has Handling 0, -1, or -2. We'll go with Handling -1.

Descriptive Handling Table

<i>Hnd</i>	<i>Description</i>	<i>Example</i>
-5	Terrible	Movable arcologies; massive cargo vessels
-4	Bad	TL0-2 large ships; blimps
-3	Poor	TL3-6 large ships; horse-drawn wagons; many tanks
-2	Mediocre	TL7+ large ships; trains; stagecoaches; long buses; transport aircraft
-1	Inferior	Large trucks; old cars; many hovercraft; heavy bombers; armored cars
0	Average	Cars; early biplanes; attack aircraft; speedboats; other vehicles without notable characteristics
+1	Good	Many muscle-powered vehicles (such as bicycles, canoes, and surfboards); sports cars; WWII-era fighters; jet interceptors; vectored-thrust aircraft; gliders
+2	Superior	Air-superiority jet fighters and sports planes; light helicopters; racing motorcycles; jetpacks or rocket belts; hang-gliders; walking mecha
+3	Amazing	Battlesuits; contragrav-powered vehicles; purpose-built acrobatic aircraft
+4 or more	Superb	Flying carpets; inertialess spacecraft

Descriptive Stability Rating Table

<i>SR</i>	<i>Description</i>	<i>Example</i>
1	Poor	Unicycles, pogo sticks, surfboards
2	Inferior	Motorcycles, canoes and other small boats, jetpacks, hang-gliders, helicopters, mecha and battlesuits
3	Moderate	Most cars and jeeps, top-heavy ships, walking mecha, most aircraft, stagecoaches, medium-sized boats
4	Good	Trucks, top-heavy armored cars, small ships
5	Superior	Heavy tracked vehicles (such as tanks), specialized racing vehicles, medium ships
6	Excellent	Massive cargo vessels, carriers, giant zeppelins, big ships

Stability Rating

This is a measure of ability to quickly recover from operator error. Any vehicle that is likely to spin out of control at the slightest error and requires white-knuckle attention, moves on just one or two wheels or legs, or has a reputation as a “widow maker” or “lawn dart” might have a low Stability Rating. Meanwhile, those that seem to “drive themselves” even if the operator is distracted or inexperienced have a high Stability Rating. Vehicles that are big and stable enough that it’s hard to make dramatic course changes (large ships, for instance) also have high SRs. SR may never be negative, and rarely exceeds 6.

Assign a rating based on the guidelines in the table above.

Example: We’ll assign Stability 3, as this is standard for most aircraft.

HEALTH (HT)

Health is the vehicle’s ruggedness and reliability. A vehicle that is known for unreliability or poor structural strength, or is vulnerable to internal damage, will have a low Health, while

those that can function reliably even when shot full of holes and are easy to maintain have a high Health. TL8+ vehicles are built with zero-defects tolerance by major manufacturers. Finely made vehicles (such as luxury models) crafted at any TL are also more likely to have high HT. Any worn-out vehicle has reduced Health.

Assign a rating based on the guidelines in the table below.

Notes for Fragile Vehicles

Brittle: A vehicle is brittle if it is in danger of shattering or disintegrating when subjected to damage. This disadvantage is appropriate if the vehicle is extraordinarily delicate, has major structural flaws, or is made from materials such as crystal or ice. Designate this with a “b” noted after HT.

Combustible: A vehicle is normally classed as combustible only if it has a predominantly wood or cloth hull, armor, or decking, unless clad in an outer layer of non-wood armor that has an equal or higher DR. Designate this with a “c” noted after HT.

Flammable: A vehicle is flammable if it has a fuel tank or gas cells holding a flammable fuel such as gasoline, jet fuel, or hydrogen. Designate this with an “f” noted after HT.

Descriptive Health Table

<i>HT</i>	<i>Description</i>	<i>Example</i>
6	Terrible	More rust than metal
7	Poor	Old vehicle held together with duct tape and gum
8	Mediocre	Structural problems, mechanical issues, poor quality control
9	Inferior	Finicky high-performance engines, inadequate safety systems, cheap “export” model
10	Average	Most vehicles without notable characteristics
11	Reliable	At least one of excellent safety systems, redundant systems, rugged structure, fine workmanship
12+	Very Reliable	Combination of “reliable” features

Explosive: A vehicle is explosive if it has a fuel tank or bay holding an explosive fuel such as rocket fuel or antimatter, or compressed liquid hydrogen, or if its body contains vacuum cells. A vehicle is also explosive if it stores a significant quantity of large-caliber chemical-propellant ammunition without any provision for anti-blast magazines, or any large-caliber missiles and torpedoes, unless they're powered by reactionless propulsion. Designate this with an "x" noted after HT.

Example: The SR-71 was doubtless finely made (the USAF and CIA didn't want it breaking down over Russia) but pushed the edge of technology, and was also under a lot of stress; HT 11 seems reasonable. It's also full of jet fuel, so the Flammable designation is appropriate, giving HT 11f.

Move

In the "Move" column, 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 their 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).

Acceleration, Ground and Water Vehicles

Most sources do not list an Acceleration figure, or at least not one particularly useful for **GURPS** statistics. In that case, use the following formula:

$$\text{Acceleration} = (11,000 \times \text{Motive power} / \text{Top Speed}) / \text{Loaded Weight}.$$

Motive Power is the combined output of the vehicle's engines, in kilowatts (kW). Multiply horsepower by 0.745 to get kW. Motive power of humans (rowers, etc.) is about 0.16 kW/person, of horses is about 0.75 kW/horse, and of sailing vehicles is about 0.8 kW/square foot of sail area (1.25 at TL7+). Use the thrust-based formula under *Acceleration, Air and Space Vehicles* (below) for any ground or water vehicles propelled by jet or rocket engines.

Top Speed is the vehicle's Top Speed, in mph; see below for help in determining this number.

For **Loaded Weight**, in pounds, either use the value listed in the reference material or see *Loaded Weight* (below) for suggestions on finding this figure using other values; be sure to convert the value to pounds before using it in the formula.

"0 to 60 in X Seconds"

Many popular references for car and truck performance list acceleration as the time it takes to reach 60 mph. This can give a better figure than the formula above. To convert this into **GURPS** Acceleration, divide 30 by the time in seconds it takes to reach 60 mph, dropping fractions.

Acceleration, Air and Space Vehicles

Use the ground Acceleration formula for propeller aircraft or helicopters whose power is rated in horsepower rather than pounds of thrust.

For jet or rocket-powered vehicles, the basic formula is:

$$\text{Acceleration} = \text{Thrust} \times 11 / \text{Loaded Weight}.$$

Thrust is maximum engine motive thrust (with afterburners), in pounds.

For **Loaded Weight**, in pounds, either use the value listed in the reference material or see *Loaded Weight* (below) for suggestions on finding this figure using other values; be sure to convert the value to pounds before using it in this formula.

Round the final value up.

Example: Our sources say the SR-71 has two jet engines with a total of 68,000 lbs. of thrust, and a loaded weight of 152,000 lbs. That gives Acceleration of 4.92, rounded up to 5.

Top speed is the maximum speed under optimum conditions.

Top Speed

This is the vehicle's maximum speed under optimum conditions (including afterburners or boosters). Top speed can normally be taken directly from reference works.

For ground vehicles that move on wheels and are designed for ordinary highway use (such as most motorcycles, cars or trucks), append a * to indicate a road-bound vehicle; add a ‡ to indicate one that must follow rails. For quick reference:

$$\text{Speed in Knots} \times 0.56 = \text{Move}.$$

$$\text{Speed in MPH} \times 0.489 = \text{Move}.$$

$$\text{Speed in KM/H} \times 0.3 = \text{Move}.$$

$$\text{Speed in Mach}^* \text{ number} \times 323 = \text{Move}.$$

* Mach numbers for aircraft are normally at 35,000+ feet altitude, where the speed of sound is about 660 mph rather than the 761 mph (Move 372) of sea level.

Many jet aircraft list a maximum speed at sea level, and another when flying in the thinner upper atmosphere. Use the highest listed speed (or note both).

Example: The SR-71's top speed at high altitude is quoted at a blistering 2,200 mph, which is Move 1,075. So we have Move 5/1,075.

Spacecraft Top Speed

For spacecraft that use rockets or other reaction drives, Top Speed is equal to the delta-V. Most reference sources give a delta-V in kilometers per second or miles per second:

$$\text{Delta-V in km/s} \times 1,093 = \text{Move}.$$

$$\text{Delta-V in miles/second} \times 1,760 = \text{Move}.$$

GURPS Spaceships and **Transhuman Space** use a miles/second delta-V, so you may wish to just convert km/s to miles/second (multiply by 0.621) and use that for consistency with established **GURPS** vehicles.

For spacecraft using reactionless drives, Top Speed is usually near-light (simply abbreviated as *c*).

LOADED WEIGHT (LWT)

This is the loaded weight, in tons (1 ton = 2,000 lbs.), with *maximum* payload and a full load of fuel. Actual weight is often lower.

Loaded weight is usually available from reference material. Reference works that don't specify a loaded weight often provide one of these statistics that can be used to determine loaded weight:

Curb Weight is the weight of the vehicle without any cargo or passengers, but with a full tank of fuel. Add 0.1 ton per person the vehicle carries and (usually) about 0.01 ton per cubic foot of cargo capacity (if that is listed).

Empty Weight can be raised to loaded weight with the same calculation as given for curb weight, plus adding the weight of fuel. Reference sources typically list a fuel capacity; coal is usually given in pounds or tons, while liquid fuels are in gallons or liters. Multiply by the weight of the fuel per gallon or liter (usually about 6 lbs./gallon for gasoline, diesel, or jet fuel), convert this to tons, and add it to the weight.

Displacement in tons is usually provided for ships in reference works. If it's given in short tons, it can be used as the loaded weight. More commonly, it's in long tons (if unspecified) or metric tons. Multiply long tons by 1.12 or metric tons by 1.1. (Commercial vessels often list *gross register tons*. Don't use that: it's a measure of enclosed cargo capacity in units of approximately 100 cubic feet, rather than ship weight!)

Gross Vehicle Weight Rating (GVWR) and **Maximum Takeoff Weight (MTOW)** can also be used as loaded weight for ground vehicles and aircraft, respectively. However, if a vehicle lists a regular loaded weight and a maximum or gross weight, use the former.

Example: Our source lists a loaded weight of 152,000 lbs., which we convert to 76 tons.

LOAD

This is the average weight, in tons, of occupants and cargo (including ammunition and hardpoint loads). You may want to work out the Occupancy first, though.

A "generic" human crew member or passenger (see *Occupancy*, below) weighs 0.1 ton; this is the average weight of a human, plus an extra amount to cover personal gear and weight variations. Determine occupant weight as if the vehicle were fully manned, even if this is not typical. If different weights are used for the occupants, add a note.

Many vehicles list either an overall "cargo" capacity or a storage volume. In general, assess a weight of 0.01 ton per cubic foot (cf) of storage volume. This can range up to 0.05 ton/cf if the vehicle normally carries dense items in that space; make a note of this. (As pointed out above, commercial vessels often use gross register tons as a measure of cargo. That's equivalent to 100 cubic feet, or about 1 ton of cargo load. In the medieval period, the term "tuns" – often translated tons – had a similar meaning; a medieval ship rated as 30 tons will often be referring to its cargo capacity; the ship itself is likely at least twice as massive . . .)

Example: The SR-71 isn't a cargo vessel, but the source material says it had two crew, so we list 0.2 ton. It also carried a modular payload of 3,500 lbs. of cameras and spy sensors; we could treat this as load instead of assuming it's part of the vehicle's empty weight. That gives us approximately 2 tons for Load.

SIZE MODIFIER (SM)

The vehicle's Size Modifier can be estimated from its longest dimension, often length or wingspan, using the *Size and Speed/Range Table* on p. B550.

The standard SM applies for a humanoid or quadruped-like shape. That works fine for a walking machine, and is reasonably good for most aircraft, ships, and boats, but differently shaped vehicles require a modifier to their length-based SM.

Size of Target rules on p. B550 indicate that SM is adjusted based on shape: shorter, wider vehicles will have a higher SM, while very skinny ones will have a lower SM. Use the *Size Modifier Adjustment Table* (below) to determine the modifier to the length-based SM as suggested by its shape.

Example: The SR-71's longest dimension is its 107-foot fuselage (36 yards), which would be SM +8. It's clearly very slender, so we reduce that to SM +7.

OCCUPANCY (Occ.)

This is the number of occupants the vehicle can carry in reasonable comfort. It is recorded in the format "crew + passengers"; e.g., 3+7 means three crew and seven passengers. Usually you'll find this information in a vehicle's descriptive text.

If the vehicle is designed for short-term accommodation, the first number is the number of crew stations and the second number is the number of passenger seats.

If the vehicle is designed for long-term accommodation (generally taken to mean the crew and passengers have sleeping and eating quarters, and room to move about), total the accommodation space, subtract the crew requirement, and the remainder is the passengers. Append an "A." Many TL5 or earlier ships didn't have specific quarters or cabins, with people slinging hammocks between supports or sleeping on deck, and passengers in the cargo space as needed; if so, for the purpose of the stat block, just assume the accommodations are equal to vehicle's standard crew (usually described in source material), appending "A" if they sleep aboard.

If the vehicle affords the occupants special protection, there is an additional code: "F" for Filter Lungs (p. B55), "P" for Pressure Support (p. B77), "S" for Sealed (p. B82), or "V" for Vacuum Support (p. B96).

Size Modifier Adjustment Table

Shape	Adjustment to SM	Examples
Very slender	-1	Fighter aircraft, modern warships, most things with a length-to-width ratio of 10 to 1 or more
Slender	0	Race cars, wide-bodied aircraft, saucers, railway carriages, many boats and ships
Boxy or short cylinder	+1	Standard cars, trucks, barges, armored vehicles
Spherical or ovoid	+2	Balloons and some spacecraft

Filter Lungs plus Sealed is typical of TL7+ vehicles fitted with nuclear-biological-chemical filtration systems (common but not ubiquitous on modern armored vehicles and warships). Pressure Support is typical of vehicles that can operate at high altitudes or underwater without special masks and suits for the crew, such as submarines or aircraft with pressurized cabins. Manned spacecraft will normally be sealed, pressurized, and have vacuum support.

Example: Source material says the jet's cockpit seated two crew and no passengers, so we record Occupancy 2. The SR-71 can operate at very high altitudes where it's closer to vacuum than air. A description of the SR-71's life-support system indicates it is pressurized but the crew must wear suits when operating at its maximum altitude. This gives it Pressurized and Sealed (PS).

*Beneath this slab
John Brown is stowed.
He watched the ads,
And not the road.*

– Ogden Nash

DAMAGE RESISTANCE (DR)

This is the vehicle's ability to absorb or deflect damage, representing both actual armor and the thickness and material of its body. Some vehicles have different DR on various faces or locations. If so, the standard vehicle stat block should list the two most important DR scores – for ground vehicles, this is usually the front DR and the average of side and rear DR. Where more detailed information is available (e.g., for tanks having different values on their hull and turret) you can list more values as footnotes.

“Unarmored” Vehicles

Vehicles not known for their armor have DR based on the thickness and material of their skin.

Ground vehicles and small boats usually have an average DR 1-2 if made of wood, or DR 2-5 if made of metal or composite materials.

Wooden ships usually have DR 5-15. Iron- or steel-hulled ships are usually DR 15-150; bigger ships typically have thicker hulls. (SM squared × 5 is a reasonable general rule.) Superstructures on metal-hulled ships often have only 1/2 to 2/3 of body DR.

Aircraft usually have very thick skins of wood and fabric (especially at TL6), or aluminum. Use DR 1-2 for wooden aircraft and DR 2-5 for metal skins. This also applies to the gondolas on airships and balloons; the actual body is DR 0-1.

Example: The fuselage is said to be a mix of titanium and some heat-resistant composites. Most high-performance aircraft are pretty thin-skinned, so DR 3-5 seems logical. As the SR-71 is also designed to withstand high temperatures, we'll assume DR 5.

Armor Materials

Military vehicles often list their armor material and actual or equivalent thickness in millimeters or inches (25mm per inch). Multiply the armor thickness in inches by the DR/inch of the armor material (see p. B559 or the *DR/Inch of Common Materials* table, below).

Rolled Homogeneous Armor (RHA)

Armored-fighting-vehicle reference works often describe vehicular armor as offering protection *equivalent* to a given thickness of rolled homogeneous armor (a standard for high-quality steel) in millimeters, even though the armor is made of other materials or sloped (see below). If so, DR can be derived directly from this equivalent. To convert this into DR, multiply thickness (in mm) by 2.75. Round to the nearest even number.

Sloping

Many military vehicles that list an RHA value take into account armor sloping, but sometimes they don't. For those that do not, a quick-and-dirty conversion is to multiply the armor DR by 1.5 for slopes of up to 30° and by 2 for slopes of up to 60°.

DR/Inch of Common Materials

For a greater range of materials, see the “DR/inch” columns in the *Armor Material Tables* in *Pyramid* #3/52: *Low-Tech II*, *Pyramid* #3/85: *Cutting Edge*, and *Pyramid* #3/96: *Tech and Toys IV*.

Material	DR/inch	Examples
Wood	1-2	
Cheap iron	46-52	
Mild steel	56	Cars, trucks, TL6+ ships
Steel	60	Warship hulls
High-strength steel (or RHA)	70	Tanks, some warship armor
Hard steel	80-83	Battleship plate, superior armored vehicles
Superalloy steels and very hard steels	90-120	Some aircraft, TL8+ AFVs
Aluminum	28-35	Ships, aircraft
High-strength aluminum	35	Armored vehicles, jet aircraft
Wood composites	2-3	
Structural plastics or fiberglass	12-19	
Titanium	57-66	Some submarines, aircraft, or fighting vehicles
Aluminum composites	50-60	
Polymer composites (carbon fiber, etc.)	28-35	
Composite laminate armors	55 (late TL7) to 111 (late TL8)	

Protection Levels

Armored cars, helicopters, and AFVs usually have DR sufficient to resist the *average* damage from a typical threat; sometimes you'll find this in reference sources – e.g., armor being described as “resistant against 7.62mm rifle fire.” To find the suggested DR, multiply the threat weapon's dice of damage by 4, add or subtract any damage modifiers, then multiply by the armor divisor. Only half the suggested DR will be needed to defeat kinetic energy threats at long range (beyond 1/2D). Remember to factor in spaced or laminate armor if shaped charges are the primary threat weapon (use threat dice $\times 2$ for laminate armor, and $\times 2.5$ for spaced).

RANGE

This is the travel distance, in miles, before the vehicle runs out of fuel, usually while operating at cruising speed. Many vehicles list a basic range that reflects standard operation but does not account for unusual activities (extensive afterburner use, loitering above a target, or climbing steep grades for extended periods, for example). Range for ships or aircraft are often given in nautical miles; multiply by 1.15 to get miles.

Example: Range is specified in the data as 2,900 nautical miles; we convert that to 3,300 miles.

Powered Ground, Air, and Water Vehicles

For powered air, ground, underwater, and water vehicles, the reference material should list a range in miles or kilometers before any refueling is needed.

Reference data for military ground vehicles and for most watercraft typically provides a linear cruising range in miles. Note that watercraft sometimes list range in nautical miles (equal to about 2,000 yards), so the provided number should be multiplied by 1.15 to get standard miles.

References for civilian aircraft usually give a linear range in miles, since they're typically concerned with airport-to-airport travel. Use that as the Range.

References for military aircraft may give both a “combat radius” and a “ferry range” (usually with limited weapons and maximum fuel). For **GURPS** stat-block purposes, it's generally best to *triple* a military aircraft's combat radius – which is usually assumed to allow for travel to and from an objective, plus some time spent at maximum speed or maneuvering around the target area – to get Range.

Cruise Range: If a range is not listed but fuel endurance is, the range in miles is $2.8 \times \text{Top Speed (yards/second)} \times \text{fuel or energy-bank endurance (in hours)}$. This represents the vehicle cruising at 70% of top speed at 50% of fuel consumption. For vehicles powered by reactors or other systems with endurance measured in years, instead note *ny*, where *n* is the number of years it operates for; e.g., 20y.

Miles per Gallon (mpg): Many sources list a civilian vehicle's average fuel consumption as the number of miles it can travel on a gallon of gas (which assumes fairly ideal conditions). Such sources commonly tell you the size of the fuel tank in gallons or liters (about 15-20 gallons for most cars). In this case, simply multiply the total fuel-tank capacity of the vehicle in gallons by the mpg rating to get range in miles.

Unpowered Vehicles

Unpowered vehicles – such as sailing, animal-drawn, or human-powered craft, or those that never run out of fuel or energy – don't have a specific Range figure. Record “–” if only provisions (food and water) limit range. Use “F” if the vehicle relies on muscle power: it means the FP of the rowers or draft animals, plus stored provisions, limit range.

Spacecraft

Spacecraft operating in vacuum continue to cruise until something decelerates them, so Range is omitted; record “–.” Alternatively, the Range entry can rate faster-than-light stardrive capabilities. FTL drives are highly campaign dependent, but if their performance varies in a uniform fashion, “Range” can be expressed as a multiplier to default FTL performance; e.g., $\times 1$ for a stardrive with normal range, $\times 3$ for one with triple normal range, and so on.

COST

Record the cost of the vehicle when it was new, in inflation-adjusted present-day U.S. dollars. Cost does not include ammunition or fuel. If the vehicle price is from a different time period, or fictional, some guesswork is needed. This is never an exact science, and results will vary depending on the country and currency that is used. Various exchange rates and inflation-calculator formulas and programs can be found online and in textbooks. A rough fudge based on U.S. dollars for a number of ranges in the TL6-8 period is shown in the table below. You may wish to record the original price in a note for historical games.

Currency Conversion Chart

TL and Date	Conversion
Early TL6 (1880)	20 to 1
Mid TL6 (1910)	20 to 1
Early TL7 (1940)	12 to 1
Mid TL7 (1965)	6 to 1
Early TL8 (1980)	2 to 1
Mid TL8 (2000s)	1 to 1

Example: Cost is stated at \$34 million. Presumably that was in 1966 dollars, so we'll use the conversion to find the inflation-adjusted cost of \$204M, with a note “(\$34M in 1966).”

Estimating Prices

If no price is available in reference sources, one will have to be estimated. One way to do that is just to pick a vehicle of comparable size and capability from another **GURPS** book and assign a similar price.

Another method is to estimate the price based on the vehicle's weight and capabilities. As a general rule, a heavier vehicle is packed with more stuff (armor, machinery, equipment, weapons) and a faster vehicle has had more effort put into designing it and its propulsion systems. A guideline is that a vehicle's cost is therefore roughly proportionate to its top speed times its empty weight in tons.

Air, ground, water vehicle cost = Top Speed \times Empty Weight \times \$500.

Underwater vehicle cost = Top Speed × Empty Weight × \$1,000.

Spaceship cost = Acceleration × Empty Weight × \$20,000.

For *Top Speed*, see p. 12. For *Acceleration*, see p. 12. *Empty Weight* can often be found in the reference material; otherwise, see *Loaded Weight*, pp. 12-13, for help in determining this.

Double the price of aircraft with stall speed 0 (such as helicopters or vertical-takeoff aircraft). For vehicles that can perform in multiple roles (e.g., a winged spaceship that can also function as an aircraft), determine each function's cost separately and then add them together.

Feel free to adjust numbers if they don't feel right! The specific equipment installed, government subsidies, and cost overruns can radically alter any "real" price.

Civilian Cars

Civilian cars and trucks often realize savings due to their large production runs, much of which are passed along to the buyer in the form of lower sticker prices, rebates, and package deals. As new models of civilian vehicles are constantly being produced, the value of used vehicles is often quite low – even if the cars are functionally identical. It may be realistic to reduce the estimated price by up to 30% for mass-produced vehicles.

Military Vehicles

Typically built with limited production runs and orders spread out over an extended period of time, military vehicles cost the government top dollar to acquire. This means that even the simplest craft may cost into the millions; this is not a "sticker price," but reflects total cost from conception to actual production – for research and development, tooling up production plants, profit margin, redesigns, and simple inefficiency and graft. Use the cost-estimate formulas given above, and multiply the results by 10 for limited-production runs (most tanks, submarines, ships, etc.). However, old military vehicles are often available for dirt cheap because they are effectively useless on the battlefield and have few buyers in the civilian world.

ADDITIONAL STATISTICS

Draft (for watercraft) and Stall (for air vehicles) may also need to be calculated.

Example: The SR-71 needs a Stall statistic.

Draft

Water and underwater vehicles only

Draft is normally the depth of the hull below the waterline. The more a watercraft weighs relative to the volume of its hull, the lower its hull sinks into the water. Draft also represents the bare minimum depth of water, in feet, in which the vehicle

can safely operate without running aground or damaging any marine propellers or paddle wheels that it uses.

Estimating Draft

Draft for boats or ships is usually listed in reference works, and can be used directly. In rare instances where no information is available, a workable estimation is:

Draft = (cube root of loaded weight in tons) × Vehicle Type.

Vehicle Type is 1 for lightly built coastal craft (like small boats or oared galleys), or 1.5 for dense vessels such as amphibious tanks, armored warships, subs, or ocean liners.

Stall

Air vehicles only

This the minimum speed, in yards/second, that the craft must maintain to take off and stay airborne. A stall of "0" means it can hover. Stall speed is sometimes called "minimum speed."

Airships, balloons, and helicopters all have a stall speed of 0. So do other, more exotic vehicles that can take off and land vertically, such as jetpacks and air-cars, and any ultra-tech or fantasy design that uses vectored thrust or contragravity.

Airplanes (winged aircraft) have a stall speed, unless their propulsion system uses tilt rotors, vectored thrust, lift jets, or some other means that lets them perform a vertical takeoff and landing. Even then, a stall speed may be a useful number to list, since it will apply if the engines fail and the vehicle must resort to gliding. If a "takeoff speed" is quoted, multiply it by 1.42 to get stall speed.

Stall Formula

If you can find stall speed in mph, kph, or knots, convert it to a Move in yards per second (e.g., mph × 0.489 = yards per second). However, many reference works omit stall speed, so it will often have to be estimated (see below). Fortunately, references usually list the most important numbers that determine stall speed: *wing area*, *wingspan*, and *loaded weight* (or takeoff weight). This permits a ballpark figure for stall speed to be calculated.

First, find the aspect ratio of the wing and the wing loading. Many references list it, but if not, both are easily calculated from wing area, wingspan, and loaded weight. Then calculate the stall speed.

Wing Loading = (Loaded Weight in pounds)/(Wing Area in square feet) *or* (Loaded Weight in tons × 2,000)/(Wing Area in square feet)

Aspect Ratio (AR) = (square of Wingspan in feet)/(Wing Area in square feet).

Stall (yards/second) = square root of [(2/AR)+1] × 40 × Wing Loading}. Apply modifiers described below.

Seventeen years, and fourteen billion dollars of the taxpayers' money, to design and build one armored vehicle.

– Madame Chairwoman, in The Pentagon Wars

Wing Area is the surface area of one side of the wing and can be found in most reference works. For *Loaded Weight*, see pp. 12-13. Round up the Stall result.

Most modern aircraft at TL7+ incorporate various sophisticated lift devices (advanced flaps, for example) that reduce the stall speed. For all but the simplest civilian light aircraft, multiply by 0.9 or 0.95 at TL7+. An aircraft specifically designed as a “short takeoff and landing” (STOL) machine, or one that incorporates limited thrust vectoring (like the F-22 fighter) to shorten the takeoff run would multiply by 0.7 or 0.8.

Takeoff speed is about 70% of the stall speed.

Example: The reference doesn’t list the stall speed; we could find some more technical works, but instead we’ll just estimate it. References do list a wing loading of 84 lbs./square foot, and an aspect ratio of 1.7, so we get stall speed 86 yards/second (about 175 mph). The SR-71 was designed for operation on long runways, so we’ll leave it at that. (Digging into some pilot accounts, the slowest airspeed seems to be 180 mph.)

*All right, you get a
description of the vehicle?
License plate, something?
– James Gordon,
in Gotham #1.5*

LOCATIONS (Loc.)

The vehicle’s hit locations (besides its body) can usually be judged by looking at photographs or pictures of the vehicle in conjunction with the guidelines below.

If a vehicle has multiple instances of a location, a quantity precedes the abbreviation; e.g., “3W” for three wheel assemblies, or “8X” for 8 exposed weapon mounts. A vehicle’s hit locations determine both how it moves (pp. B466-467) and what parts can be hit in combat (see *Vehicle Hit Location Table*, p. B554).

Example: The SR-71 has wings and three sets of retractable wheels. The cockpit canopy is pretty small compared to the vehicle size, so we’ll call it small glass windows. Thus, the hit locations are g3WWi.

Arm (A)

One arm location for every arm-like manipulator that it possesses.

Caterpillar Tracks (C)

Vehicles with tracks (such as tanks and bulldozers) have this location. So do vehicles that use both tracks and wheels or runners, such as halftracks and snowmobiles.

Most tracked vehicles have two track locations, written 2C. A few unusual very large vehicles, such as Ogre cybertanks, have more sets of tracks; e.g., four tracks are 4C.

Draft Animals (D)

Animal-drawn vehicles such as chariots and wagons use draft animals. Prefix the location abbreviation by a number that indicates how many animals are harnessed externally to the vehicle, if more than one. For example, a two-horse chariot is 2D.

Exposed Rider (E)

This entry means that one or more of the vehicle’s occupants ride astride, are strapped onto, or hang onto the vehicle, usually in a cycle-style seat or a saddle, rather than sitting or standing inside it.

“Exposed rider” is used instead of the similar “open cabin” if the occupants can’t claim *any* cover from the vehicle. Bicycles and motorcycles, jetpacks, and hang-gliders are examples.

Large Glass Windows (G)

This location entry means the vehicle has one big or many small transparent windows that cover a significant portion of its total surface area.

These may be a couple of large windows (as on a typical car or truck) or a row of many smaller windows (as on a passenger airliner or cruise ship). The large, glassed frontal bubble canopy used by many civilian helicopters is another example of a G location.

Small Glass Windows (g)

This location entry means the vehicle has a few transparent windows or canopies that provide the occupants with a good view, but they don’t cover a large portion of its total area.

The canopy or windows on a combat aircraft with an enclosed cockpit are an example of small glass windows. So are the bridge windows and multiple portholes on most boats and ships. Tiny armored vision slits, like those found on tanks, are not included as windows.

Don’t assign this location if the vehicle already has large glass windows.

Helicopter Rotors (H)

Rotary-wing vehicles such as helicopters and autogyros have this location. Use H for helicopters with a single main rotor assembly (and a small tail rotor or fan). Use 2H for helicopters with two main rotors, and for tilt-rotor vehicles.

Leg (L)

This means the vehicle has on one or more legs. If it has more than one leg, prefix the abbreviation with the number of legs. For example, a bipedal vehicle is 2L.

Masts and Rigging (M)

Assign this location if the vehicle has masts and rigging that support sails. (It does not apply to masts used for radio or sensor antenna.)

Where the vehicle has two or more masts, prefix the abbreviation with the number of masts. For example, a three-masted ship would have the location notation 3M.

Natalya Simonova: Do you destroy every vehicle you get into?
James Bond: Standard operating procedure. Boys with toys.

– **GoldenEye**

Open Cabin (O)

This means that the vehicle's crew and/or passengers are partially enclosed in the vehicle, usually seated, but their upper bodies are exposed to the elements.

Use this for open boats, aircraft with open cockpits, and ground vehicles with open tops (such as a jeep). A vehicle with a light fabric top such as a convertible or a covered wagon also counts as having an open cabin.

Runners or Skids (R)

Assign this location if the vehicle has landing skids (like those on some helicopters) or ski- or sled-like runners (like sleds, aircraft with ski landing gear, or snowmobiles).

Where the vehicle has two or more runners or skids, prefix the abbreviation with the number of skids/runners. The most common arrangement is two, written as 2R.

Retractable (r)

This isn't a location, but rather a modifier that indicates a location can fold flush or retract into the vehicle. Add a small "r" prefix to a location that can fold or retract. (*Exception:* There's no need to do that with windows, open cabin, or exposed rider.)

Large Superstructure or Gondola (S)

This entry is used if there's a large distinct structure attached to the vehicle's main body. "Large" means it should be at least 10% of the volume of the main body, or smaller but vital to the vehicle's functioning, such as the gondola of an airship or balloon. The collection of structures that includes the deck houses, bridge, and funnels on a modern ship can, for simplicity, be collectively considered a single "large superstructure." Vehicles usually have no more than one large superstructure, although there is sometimes room for two. If there's more than one, add a numerical prefix.

Small Superstructure or Gondola (s)

This location is assigned to any superstructure that is too small to be considered a large superstructure. Where the vehicle has two or more small superstructures, prefix the abbreviation with their number.

Small superstructures can also be used to represent engine pods attached to the wings or body of multi-engine aircraft. For example, an aircraft with four engine pods is 4s.

Main Turret (T)

This location refers to a large rotating turret, such as that of a modern tank, or possibly the head of a robot. A main

turret should be at least 10% of the body volume. Vehicles usually have no more than one main turret, although there is sometimes room for two. If there's more than one, add a numerical prefix.

Independent Turret (t)

This location refers to a rotating turret that is relatively small in proportion to the size of the vehicle it is mounted on. For example, the giant gun turrets on a battleship are independent turrets, since they're small in comparison to the battleship's huge size.

The turrets on TL5+ warships and TL6-7 bomber aircraft are other examples of independent turrets. So are the chin turrets on attack helicopters. Some small turrets on ground vehicles may also be classed as independent, especially if unmanned or designed for only one person. Independent turrets can also represent rotating sensor domes.

If a vehicle has multiple independent turrets, prefix the abbreviation with their number; e.g., a cruiser with three turrets is 3t.

Wheel (W)

Assign this location to wheeled vehicles such as cycles, cars, and trucks. It also represents features such as the wheeled landing gear on aircraft.

If there's more than one wheel, prefix the abbreviation with a number indicating how many wheels are attached to the vehicle. For example, a motorcycle or a chariot is 2W, an airplane with "tricycle" landing gear is 3W, and a typical automobile or wagon is 4W.

Where the same axle has more than two wheels, treat it as a pair of wheels. Thus, a truck with three axles but two wheels on the rear axle has six rather than eight wheels.

Wing (Wi)

This represents an airplane-style wing that is used to generate lift. Each "wing" location is assumed to include both the right and left wing sections. Ordinary monoplane aircraft are Wi. Biplanes have 2Wi, triplanes have 3Wi, and so on.

Wings can represent hydrofoil subassemblies. For location purposes, hydrofoils are treated as functionally equivalent to biplanes and use the designation 2Wi.

Exposed Weapon Mount (X)

This indicates a simple post, rail, deck, flexible mount, or pintle for a weapon or set of linked weapons that is outside the vehicle proper. The most common example in modern vehicles is a machine gun mounted on a vehicle's top or deck.

In addition to weapon mounts, an exposed mount location can represent a mast on which equipment is mounted which too fragile to be a small superstructure. However, it's usually too much trouble to list every radio or radar mast on a modern vehicle in this way, so it's best to reserve this for situations where major equipment is so attached.

If more than one exposed mount is installed, add a prefix showing the number present.

NOTES AND DESCRIPTIONS

Finally, be sure to list any special capabilities or problems the vehicle has. It's possible to use a vehicle with just its stat block, but additional detail can add color and describe further capabilities.

The most important description is that of additional equipment or weapons built into the vehicle. Covering how to put game stats to these is beyond the scope of a brief article like this one. In broad strokes, simply assign whatever weapons or equipment from *GURPS Low-Tech*, *GURPS High-Tech*, or *GURPS Ultra-Tech* most closely resemble the described gear. You can also describe things like radar or radio in terms of advantages, if no equipment matches. There's no need to record the exact weight, volume, cost, or power requirement. Just note the type of equipment or weapon and any statistics of importance to use in encounters, such as a radio's range or a weapon's combat statistics.

If the vehicle has superstructures, turrets, or wings, it's possible that some or all of the occupants, equipment, or weapons goes in these locations rather than in the body. If so, it can be useful to note which crew, passengers, or equipment are where; this makes it easier for the GM to determine who is hurt or what is damaged if a hit location is disabled. For example, "eight 7.62mm machine guns with 1,000 rounds each (in wing)" or "the crew consists of a driver (in body) and a commander, gunner, and loader (in turret)." If vital systems like engines are located in superstructures, this should also be mentioned. Vehicles presented in *GURPS High-Tech* provide a good model for doing this.

Example: The SR-71 incorporated some early stealth capability (probably -2 or so to radar detection). Its onboard electronics included secure radios, inertial and celestial navigation systems (Absolute Direction), a wide array of ground-mapping radar and telescopic cameras, and sophisticated electronic countermeasures for jamming missiles and radars, most of them classified. Let's keep this simple

and say it can take detailed images of whatever it flies over at high altitude, and radar-homing weapons or missiles attack it at -4. The capability to map the ground from 80,000' would amount to a multi-mode radar with a 15-mile range.

ABOUT THE COLUMNIST

David L. Pulver is a Canadian freelance author. An avid science-fiction fan, he began roleplaying in junior high with the newly released *Basic Dungeons & Dragons*. Upon graduating from university, he decided to become a game designer. Since then, David has written over 70 roleplaying game books, and he has worked as a staff writer, editor, and line developer for Steve Jackson Games and Guardians of Order. He is best known for creating *Transhuman Space*, co-authoring the *Big Eyes, Small Mouth* anime RPG, and writing countless *GURPS* books, including the *GURPS Basic Set, Fourth Edition*, *GURPS Ultra-Tech*, and the *GURPS Spaceships* series.

Special thanks to Kenneth Peters for useful suggestions.

GURPS

Fourth Edition

ALL THE GEAR IS HERE!



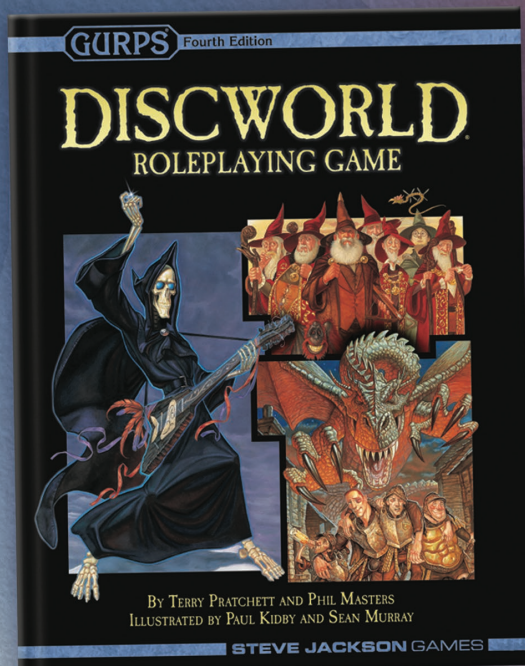
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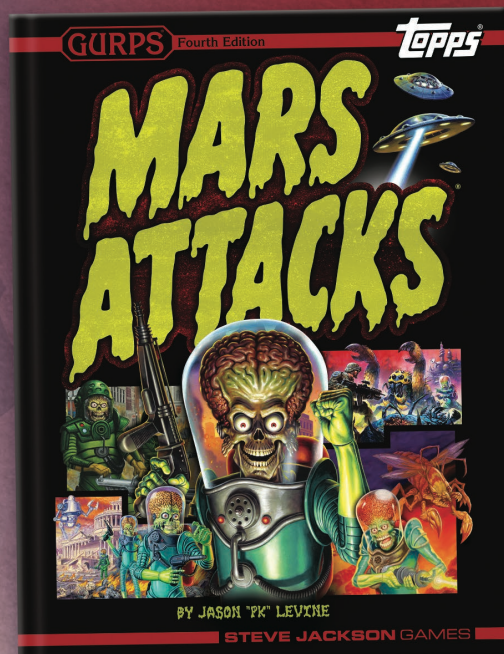
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THE FIFTH ATTRIBUTE

BY CHRISTOPHER R. RICE

GURPS has four basic attributes (Strength, Dexterity, Intelligence, and Health), each representing a physical or mental aspect of a given character. Other games have a statistic measuring supernatural or paranormal power, which doesn't precisely map to any one **GURPS** attribute. There are numerous examples: Palladium's *Rifts* roleplaying game has "PPE" (Potential Psychic Energy), *Shadowrun* has "Essence," *Big Eyes/Small Mouth* has "Soul," and so on. **GURPS** lacks such an attribute, but one could easily be added. Including a separate trait to measure paranormal resources allows creation of an even greater range of characters, so you can

design, for example, a physically weak and mentally average hero who can tap into incredible internal power. It works best in campaigns where protagonists can expect to be attacked regularly by mages, demons, or other beings with abilities for controlling minds or inflicting psychic damage.

This article adds the *Quintessence* attribute and provides guidance in applying it to select existing **GURPS** systems for supernatural abilities. (This version of Quintessence is distinct from those mentioned in other **GURPS** supplements, such as *GURPS Alphabet Arcane* and *GURPS Powers: The Weird*.)

THE QUINTESSENCE OF POWER

This system introduces a new attribute and a new secondary characteristic. The first measures the raw paranormal power the character possesses, and is called *Quintessence*, or *QN*. The second measures the person's ability to use supernatural powers, and is called *Quintessence Points* or *QP*. Quintessence Points *also* represent how on guard the character is against supernatural forces. At low QP, natural barriers degrade, just as the person would grow tired and less physically capable with lost FP. While everyone with supernatural powers benefits from above-average Quintessence, those who practice magic tend to learn how to store ambient paranormal energy within themselves, providing an in-game excuse to purchase more Quintessence or Quintessence Points.

For the purposes of this article, it's assumed that *Quintessence* is the power underlying superhuman and paranormal abilities, and is entirely decoupled from intelligence or physical strength. Where a power would normally use Fatigue Points (in **GURPS**, that's most of them), it now taps the person's pool of Quintessence Points – but "fatigue of the soul" can be just as debilitating as fatigue of the body! If you're running low on QP, you are less resistant to non-mundane attacks, much as a fighter finds it harder to lift their shield when they're tired. Lose too many QP, and you risk unconsciousness or death.

Quintessence (QN)

±10 points/level

Quintessence measures a combination of supernatural capability, raw mystical power, and

innate talent with paranormal abilities. It also represents your resistance to those abilities. A Quintessence of 10 is *free*, and is considered the human average. Higher-than-average scores represent mystical training, honing chi, highly developed "internal mana," and so on. Lower scores represent spiritual degradation, improperly aligned chakras, refracted internal mana, etc.

Even without training, Quintessence is an *attribute*, just like Dexterity or Strength. It gives the following two benefits to *everyone*.

- *Quintessence Points*: QN determines base Quintessence Points (p. 22).

- *Supernatural Resistance*: When resisting a supernatural ability, Quintessence is used in place of any other attribute, skill, etc. Alternatively, the GM can decide that a higher or lower Quintessence instead affects the standard roll. If so, someone with a Quintessence of 10 or greater adds +1 to their roll per three full points that Quintessence is above 10. Conversely, if the person has a Quintessence of 9 or less, when resisting supernatural abilities, they either roll against

Quintessence or suffer -1 per two full points that Quintessence is below 9.

Those without much exposure to the supernatural will probably not have extremely high or low Quintessence!

*Quintessence is
a new way to express
paranormal power.*

They haven't had reason to push themselves (as an athlete would train Strength and Dexterity), nor have they endured metaphysical assaults that could result in "damaged" (low) Quintessence. The GM may wish to limit QN to a range of 7 to 13 for supernaturally "average" characters, and have 20 be the top end. Depending on the setting, nonhumans (PCs or NPCs) might count as "average" – or might not!

Quintessence Points (QP)

±3 points per ±1 QP

Quintessence Points represent your "spiritual energy." They are used by many abilities instead of Fatigue Points. By default, you have Quintessence Points equal to your Quintessence attribute. Starting QP cannot be less than 1. There is no limit on how much QP someone has. Buy as much as you can afford!

HOW QUINTESSENCE POINTS WORK

Quintessence Points power supernatural abilities, and nearly *all* of those require at least one QP to activate. Those with Trained by a Master or Weapon Master can spend QP to fuel extra effort (see p. 24).

Quintessence Points also serve as a buffer against supernatural effects. Should expenditures or losses leave you with less than 1/3 of your Quintessence Points, you become more vulnerable to supernatural abilities. Halve effective Quintessence (QN) when calculating the benefits of supernatural resistance (see p. 21). At 0 QP, you are supernaturally "exhausted," making you more vulnerable to other supernatural abilities and attacks – quarter your Quintessence when determining supernatural resistance. When QP drops below 0, you risk falling unconscious; see *Live Like You Were Dying* (p. 26) for more on this.

Obviously, where there's a form of supernatural energy, there will be ways to drain or replenish it; many abilities that affected someone's Fatigue Points could affect their QP instead. Replenishing QP faster than normal (see below) may require inventing a parallel ritual – e.g., Recover Energy (QP) *as well as* Recover Energy (FP) – or deciding whether a skill (such as Breath Control) can affect Quintessence Points as well as Fatigue

Points when used by a paranormal-trained individual. Some attacks will affect both QP *and* HP or FP! If those are common, then there should also be healing abilities that address both at once.

Recovering QP

By default, Quintessence Points are recovered at the rate of 1 per 10 minutes, whether or not you're resting. The Resilient Quintessence advantage (below) can modify this, and it's recommended that Breath Control (or a similar meditative skill specifically designed for QP) increase the rate to 1 QP per five minutes. Any other setting-specific abilities for recovering energy will behave normally, substituting Quintessence for Fatigue Points, Health, etc.

QP as a Variable

Finally, some formulas may include QP as a variable; e.g., 2×QP or QP/2. In such cases, use the character's *basic* QP score, not their *current* QP. If a formula affects someone's current levels – such as losing half of the current Quintessence Points – it will say so specifically.

ADDITIONAL CHARACTER TRAITS

Power Talents that cost 10+ points/level are less attractive when using these rules; it makes better sense to raise QN. As with any other attribute, though, Quintessence doesn't enable one to purchase powers later on (as power Talents do) or give a discount when using *Improvement Through Study* (p. B292).

NEW AND EXISTING ADVANTAGES

If Quintessence is effectively "supernatural muscle," clearly a corresponding trait should represent "supernatural fitness."

Resilient Quintessence

5 or 15 points

You have a stronger inner spirit than your QN would indicate. This trait comes in two levels.

Resilient Quintessence: You get +1 to all QN rolls (to go into QP debt, to avoid injury when going into QP debt, when resisting involuntary QP loss, etc.). This does *not* improve your QN attribute or QN-based skills! You also *recover* QP at twice the normal rate. *Prerequisite:* Quintessence 10+. 5 points.

Very Resilient Quintessence: As above, but the bonus to QN rolls is +2. In addition, whenever you *lose* QP to draining effects (but not when you *voluntarily* spend it), you lose it at only half the normal rate. *Prerequisite:* Quintessence 12+. 15 points.

Telekinesis

see p. B92

Some abilities in fiction allow people to use their inner power to perform amazing physical attacks despite frailty or infirmity. This could be represented as Telekinesis (Based on QN, +20%; Cannot Affect Self, -20%) [5/level].

NEW AND EXISTING MODIFIERS

Limitations represent flawed training when using magic. They could stem from an improper understanding of how magic functions, not grasping the particular style of a given tradition, or some form of “mystical blockage.”

In a campaign where everyone has the *potential* to use a supernatural ability (usually a form of spellcasting), the GM would normally give everyone Magery 0. With Quintessence, the GM bases spells or abilities on QN. Those who have a knack should purchase additional levels of Magery or power Talent.

However, some people have the equivalent of “no fine manipulators” when it comes to the energies of the soul! If you *cannot* use your QN except in the crudest ways (e.g., resisting supernatural attacks), you may purchase QN more cheaply, at -40%. If you can use your Quintessence with finesse under certain circumstances (such as while dancing, after dark, if alone, etc.), you may take one of the Magery-themed special limitations (p. B67) and apply *half* that limitation’s value when purchasing Quintessence. (In a campaign with universal magic, being able to cast spells only during the day is not as limiting as being unable to cast spells at all!). A total of -40% in modifiers (equivalent to ST and DX’s No Fine Manipulators limitation) is the largest discount on purchasing Quintessence.

The GM may also allow you to limit *some* of your Quintessence – say, to be able to cast spells with an effective QN of 12 during the day, but QN 14 at night. That would cost 20 points for QN 12 (normal cost to raise the attribute), and another 16 points (normal cost with a discount equal to half of the Magery modifier value, or -20%) for Night-Aspected QN +2.

If you take any limitations on your Quintessence, you are treated as a non-mage for all purposes (and thus may incur additional penalties or restrictions when using supernatural abilities). If only *some* of your Quintessence is limited,

you’re treated as though you had reduced Quintessence for all purposes.

Ritual Path Magic Users: When you are not following the rules of your limitation(s), your skills are limited *and* you lose access to that chunk of your mana reserve. This limit does not affect your conditional spells unless the GM feels you are abusing your limitation.

Based on (Different Attribute), Requires (Attribute) Roll

See p. B102 and *Powers*, p. 112

Quintessence is a viable option for these modifiers – particularly for nasty supernatural powers. For Based on Quintessence, use the *lower* of a target’s QN and the normal resistance score as per *GURPS Powers*, p. 100.

Other Modifiers for Quintessence

Many limitations are appropriate for purchasing Quintessence more cheaply! Certain enhancements are also suitable. Here are some obvious examples, but the GM may allow anything that fits the campaign and character concept – or forbid anything that doesn’t.

Limitations on Magery (p. B67): Dance (-20%), Dark-Aspected (-25%), Day-Aspected (-20%), Musical (-25%), Night-Aspected (-20%), One College Only (-20%), Solitary (-20%), and Song (-20%). The values listed here are *half* the usual ones.

Other modifiers for Magery (*GURPS Thaumatology*, pp. 23-29): Cyclical Magery (variable), Easily Resisted Magery (-5%/level), Easy Casting (+40%/level), Radically Unstable Magery (variable), Stable Casting (+40%/level), and Subtle Aura (+20% or +40%).

Limitations suitable for psionic powers (as per p. B255): Emergencies Only (-30%, p. B112), Nuisance Effect (varies, p. B112), and Unreliable (varies, p. B116).

CAMPAIGN FEATURE OR ALTERED MECHANICS?

Much of this system assumes that the GM will simply drop Quintessence into their campaign and declare that all supernatural powers use it, regardless of what an ability normally is based on. This is the easiest solution and removes much of the workload from the GM. Where the GM *shouldn’t* apply this is for most *attacks* – most attack mechanisms in *GURPS* assume an agility or finesse component. In such cases, Quintessence becomes the *fuel* for the ability, via QP, and DX is how well the attack is *aimed*. The exception is Malediction-based attacks, which should be based on Quintessence. A classic trope is to overpower a target’s inner mystical strength with one’s own.

Optionally, the GM may decide to tinker with their campaign’s supernatural powers. For advantage-based paranormal abilities, this is straightforward: Add “Based on Quintessence” (+20%) to the ability. Skills can get more complicated, though. Basing a *supernatural* skill on Quintessence is simply the Attribute Substitution perk

(see *GURPS Power-Ups 2: Perks*, p. 15), but the GM should remove the normal restriction of having no more than four such perks. If this applies to *all* supernatural skills (e.g., spells), then note it as an Unusual Background with a cost of 5 points.

The GM might even allow mundane skills to be based on Quintessence. In such cases, the skill becomes mildly supernatural! For most physical skills, this makes no sense – you don’t swing a sword with your QN. For mental skills, this might mean you have a preternatural instinct for remembering details, finding problems, or discovering solutions. In some settings, this option might be limited to those with certain powers. For example, in a game with psionics, “Attribute Substitution (Intimidation based on Quintessence)” could permit a telepath to unconsciously use the Instill Fear ability, while “Attribute Substitution (Gambling based on Quintessence)” could be permitted for those with *any* Probability Alteration power.

Pact (p. B113): While a Pact is appropriate for purchasing increased Quintessence more cheaply, the GM may wish to include it with a separate advantage instead: Use Magery (if that gives its level as a bonus to Quintessence) or create a Talent (p. B89) for the character's Pact-granted abilities, and apply the Pact limitation to *that*. Either one of these modified advantages would add an appropriate bonus to all uses of Quintessence (including providing additional Quintessence Points), but if the person breaks the Pact, they drop to their normal level of QN and QP until they've patched things up with the source of their supernatural boost.

EXISTING SKILLS

The following skill needs extra detail for use with Quintessence.

Breath Control

See p. B182

Those with this skill can quickly recover Quintessence Points. On a successful roll at skill level 19 or less, the person recovers one QP per five minutes; at skill 20 or more, the character recovers one QP per *two* minutes.

QUINTESSENCE AND EXISTING SYSTEMS

While the rules above are generic enough to be used for any campaign's supernatural powers, here are a few useful guidelines for existing systems.

CHINESE ELEMENTAL POWERS

GURPS Thaumatology: Chinese Elemental Powers can easily utilize Quintessence – simply apply the Based on (Different Attribute) limitation (in this case, “Based on Quintessence”) as appropriate. Those with Trained by a Master or Weapon Master have more latitude when it comes to cinematic skills (below). Additionally, all rolls for extra effort use the better of Will or Quintessence. Meditation's controlling attribute can be moved to Quintessence for supernatural uses.

A few powers require additional notes (all page references in this section are to **Chinese Elemental Powers**).

- *Flame Breath* (p. 24): Cost remains the same, but “Costs Fatigue, 1 FP” becomes “Costs Quintessence, 1 QP.”
- *Touching the Liver* (p. 29): Cost becomes 17 points, and uses the *lower* of the target's HT or QN.
- *Touching the Lungs* (p. 25): Cost becomes 13 points, and uses the *lower* of the target's HT or QN.
- *Touching the Spleen* (p. 22): Cost becomes 15 points, and uses the *lower* of the target's HT or QN.

CINEMATIC SKILLS

Quintessence can be used with extraordinary skills.

Trained by a Master, Weapon Master

pp. B93, B99

The following modifications apply to cinematic skills:

- When determining a cinematic skill's level, use the average of the skill's controlling attribute and the martial artist's Quintessence attribute, if better. For example, a martial artist with IQ 10 and QN 14 is treated as having an IQ of 12 for IQ-based cinematic skills. Certain cinematic skills are instead based on QN alone for specific aspects of skill use; see *Specific Applications* (below) for more details.

- When using extra effort (pp. B356-357), a martial artist with Trained by a Master may substitute Quintessence for their regular score. Furthermore, they may pay the FP cost out of their FP *or* their QP. However, only one source can be tapped at a time; for example, a martial artist with Trained by a Master could pay the cost of Flurry of Blows with two attacks out of their FP *or* their QP, but not spend one point of each. Optionally, the GM may allow use of both in a single turn by making a Quintessence roll at -5 (*plus* any relevant Talent used in the campaign; e.g., Inner Balance or Forceful Chi).

The GM may also wish to allow Gunslinger (p. B58) to give similar benefits in campaigns that rely on **GURPS Gun Fu**.

New Special Limitation

Disharmonious Chi: For whatever reason, your chi is blocked, improperly aligned, or otherwise “out of whack.” Because of this, you cannot acquire *any* cinematic skills, chi powers, or other advantages or skills with Trained by a Master or Weapon Master as a prerequisite. (You can still obtain cinematic skills by substituting an appropriate power Talent, as described in **Chinese Elemental Powers**.) Furthermore, you cannot spend QP on extra effort. The other benefits of Trained by a Master and Weapon Master remain; in particular, your martial capabilities (e.g., halved Rapid Strike penalties) are otherwise unimpeded. -30%, or -25% in campaigns that don't use Quintessence.

Specific Applications

Anyone who obtained the following skills because of a power Talent and who does not have Trained by a Master or Weapon Master may not use their Quintessence attribute to benefit these skills. Anyone who has these skills because of a power Talent and who *has* Trained by a Master or Weapon Master (even if it's limited by Disharmonious Chi) may gain any Quintessence-based benefits.

- *Body Control* (p. B181): As suggested in the **Basic Set**, this skill can be used in place of HT rolls to resist afflictions (pp. B428-429) regardless of their origin. Use the rules for flushing poison to end enduring effects.

- *Breaking Blow* (p. B182): As a special effect, those with Trained by a Master or Weapon Master may substitute their QN attribute for their ST if this would benefit the attack making use of this skill.

- *Flying Leap* (p. B196): Replace ST with QN when using Flying Leap to attack someone, or replace ST with QN when using Jumping skill to determine the jumping distance during use of a Flying Leap.

- *Kiai* (p. B203): The attacker may declare they are overpowering their target's *chi* instead of their willpower. Attacking *chi* gives -5 to the *Kiai* skill, but if successful, the target must roll against the *lower* of Will or QN to resist.

- *Light Walk* (p. B205) and *Lizard Climb* (**Martial Arts**, p. 61): Substitute your Quintessence/2 for your Move (if better) to determine your maximum Move while using these skills.

- *Power Blow* (p. B215): Substitute QN for ST to determine your effective ST when using this skill. You may optionally roll against your Power Blow skill to use your QN score instead of your ST for *one* attack. This use costs 1 QP but can be done instantly without the usual -10. You can still take appropriate skill penalties to double or triple your effective ST when substituting your QN.

- *Pressure Points* (p. B215): Substitute your QN for IQ during the Quick Contest with your victim. Furthermore, your victim rolls against the *lower* of their HT (or IQ for attacks to the face) or QN to resist this skill.

- *Pressure Secrets* (p. B215): Substitute your QN for your ST (if better) to determine your effective ST when using this skill.

- *Push* (p. B216): Substitute your QN for your DX to determine skill level, and use the *higher* of QN or ST to determine your effective ST when using this skill.

Quintessence can benefit
cinematic skills, psionic powers,
and more!

PSIONIC POWERS

GURPS Psionic Powers offers one of the most comprehensive, self-contained power systems to date. In it, Fatigue Points are heavily utilized to allow psis to perform extraordinary, albeit temporary, feats of mental ability. When using the rules in this article, replace all FP costs with QP costs. Using extra effort requires 2 QP and a Quintessence- or Will-based skill roll, whichever is better. The GM may want to have all non-attack powers that require resistance rolls be based on Quintessence; if so, replace the existing "Based on (Different Attribute)" enhancement with "Based on Quintessence" (+20%) – or add this enhancement if necessary – and adjust costs accordingly.

The GM might rule that all psionic skills use a derived base, which is equal to the average of the controlling attribute and Quintessence.

Quintessence also becomes an available attribute for Drain (Attribute) (**Psionic Powers**, p. 50); treat it as HT or ST to determine how much is drained. Additionally, the following ability is available to psychic vampires.

Steal Quintessence

65/68/70/73/75/78 points for levels 1-6,
plus 13 points for each additional level

Skill: Steal Quintessence (QN/Hard).

You can steal the paranormal vitality (Quintessence Points) of other beings, replenishing your own and possibly healing yourself. You must win a Quick Contest of skill vs. your target's Quintessence. You are at -1 per yard of distance between you; if the subject moved, use the *worst* distance penalty in that timeframe.

If you win, you drain 1 QP from your victim and may apply it to your own reserves of either Quintessence Points or Fatigue Points. If you apply it to *neither* (or both are full), but continue to drain QP (see below), each full 3 QP from your target heals *one* of your Hit Points. If you're undamaged, unfatigued, and have all your Quintessence Points . . . you can still drain the subject, but get no benefit. Draining more QP requires another Quick Contest that takes the usual amount of time.

At level 1, you must concentrate for 30 seconds before rolling. At level 2, it takes 15 seconds to steal 1 QP. This drops to eight seconds at level 3; four seconds at level 4; two seconds at level 5; and one second at level 6. At level 7 and above, you can drain (level-5) QP from the victim every second; roll a new Quick Contest per *second* instead of per QP stolen.

If your victim ever successfully resists, you cannot affect them again for 24 hours. The Far Theft psi technique (**Psionic Powers**, p. 51) is available for this skill.

Statistics: Leech 1 (Accelerated Healing (Only for drained QP, -20%), +20%; Based on Quintessence, +20%; Based on Quintessence, Own Roll, +20%; Increased Immunity 3, -30%; Malediction 1, +100%; Psychic Vampirism, -10%; Ranged, +40%; Steal QP, +50%; Takes Extra Time 5, -50%) [65]. Further levels reduce Takes Extra Time, one level at a time [+2.5/level], and then add further levels of Leech [+13/level].

Bloodsucker

Hard

Default: Steal Quintessence-1. Cannot exceed Steal Quintessence.

You regain HP for *each* QP you steal if your QP and FP are already at maximum, instead of at a reduced rate.

RITUAL PATH MAGIC

GURPS Thaumatology: Ritual Path Magic is perhaps the *easiest* switch when using Quintessence. That system's version of Magery already assumes two things: (1) you have an energy reserve; and, (2) Magery acts as a cap on your Path skill levels. When using Quintessence with Ritual Path magic, apply the following:

- No Path skill can exceed the lower of the core skill or (Quintessence + 2).

- Mana reserves no longer exist; use QP instead. While this may not seem fair at first, there are benefits: The mage can use Path of Magic to refill QP, and can tap into extra reserves by going into QP debt (see *Live Like You Were Dying*, p. 26).

LIVE LIKE YOU WERE DYING

A desperate person may tap into “deeper” reserves. Doing this is *dangerous*. The character must have a current QP of 0 or less and take a Concentrate maneuver (optionally, the GM might allow a QN-4 roll to do this *instantly*). Tell the GM how many multiples of your base QP you want to access, up to five *total* if you want to stay conscious. You may access more, but you fall into a *Coma* (see p. B429) two turns after you gain access to the extra QP, with all that the condition entails.

Two turns after you get the extra Quintessence Points, you must make a Quintessence roll, at -2 per full multiple of your base QP you’ve accessed. Critical success means you take no damage, success means you lose 1d FP, failure means you take 1d points of injury, critical failure means you take 3d points of injury and must make another QN roll or fall unconscious until your QP is above 0 (see *Recovering QP*, p. 22). These “extra points” are used like standard QP.

The GM who deems this technique too powerful for the campaign can forbid it or limit it. Perhaps going into debt *also* causes Corruption (*GURPS Horror*, pp. 146-148) . . .

Everything else functions normally according to the rules in that supplement.

SORCERY

Like other systems that utilize advantage-based builds, *GURPS Thaumatology*: *Sorcery* can easily incorporate Quintessence – simply apply the “Based on Attribute” modifier as appropriate. *All* Buff spells add “Based on Quintessence, Own Roll” (+20%), increasing their total cost by 2 points. This means the caster makes a roll vs. their Quintessence score when casting Buff spells. Do *not* add this modifier for non-Malediction type attacks. Additionally, the Sorcery power modifier costs QP instead of FP; this is a feature and has no effect on the modifier’s value.

STANDARD MAGIC

All spells are now based on the mage’s QN, and all FP requirements become QP requirements. This allows for mages who are gifted with magic without being towering intellects, competent diplomats, and so on. Not all powerful wizards live in high towers of ivory!

Quintessence effectively replaces Magery higher than level zero. Magery 0’s ability to notice magical phenomena is now based on a character’s (Perception + Quintessence - 10) instead of (Perception + Magery). See p. 23 for direction on adding modifiers that would normally be added to Magery. Casters still need to buy Magery 0 to cast spells in areas of less than high mana!

If multiple supernatural abilities exist in the same campaign, the GM may wish to continue using Magery. If so, use the rules for *Accessibility* (*GURPS Powers*, p. 99) and modify Magery as appropriate. Quintessence still remains the base attribute, but Magery adds to it for its purpose of learning and casting spells.

ABOUT THE AUTHOR

Christopher R. Rice is pretty sure the fifth attribute (element?) is not love, but hey, it could be. Multi-Pass. From Portsmouth, Virginia, he’s spinning words and whimsy into gold. Of course, if he’s not writing about *GURPS*, he’s blogging about it. Visit his site “Ravens N’ Pennies” (www.ravenspennies.com) for more *GURPS* goodies. He’s the co-author of *GURPS Dungeon Fantasy 19: Incantation Magic* and *Dungeon Fantasy Traps*. He wishes to thank L.A., his own personal muse, as well as the rest of his gaming group (the Headhunters); Elizabeth “Archangel” McCoy, the “Sith Editrix”; and Emily “Bruno” Smirle, for being most excellent sounding boards. The rules for the *Live Like You Were Dying* rules above were inspired by the *Chaos and Ritual* article by Elizabeth McCoy in *Pyramid* magazine, Volume 2.

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CONDITIONAL INJURY

BY DOUGLAS COLE

Roleplaying games have used the mechanic of “hit points” for a long time. It was borrowed from the fantasy miniatures wargame *Chainmail* and incorporated into the first versions of *Dungeons & Dragons*. *GURPS* has also used Hit Points since before it was *GURPS* – HP were (and are again!) in *The Fantasy Trip*, based on the Strength attribute. In any system, they serve as a useful abstraction for the state of a character’s health, endurance, fate, luck, and skill.

In many wargame rules – much like those for the mundane units and subassemblies in Steve Jackson Games’ *Ogre* – a successful hit *eliminates* the target. Boom. Dead. Remove the piece and keep playing with whatever forces you have left. That’s obviously unsatisfactory if you’re playing a single hero.

However, with all of the various disadvantages, afflictions, incapacitating conditions, and flat-out penalties that are part of the *GURPS* rules lexicon, Hit Points are not necessary. This article removes Hit Points from the game as the basis for wound tracking, and replaces them with an effects-based method for injury. It does not alter the Fatigue Points system – depleting a store of energy as someone exerts themselves provides the right verisimilitude and is based on a real-world phenomenon.

This system creates a “chunkier” level of abstraction at the game table. This is a design goal for the system, but might not be to everyone’s taste.

CONDITIONAL BASICS

In this system, injury is compared against a threshold to determine how severely wounds are impairing someone. This is how *GURPS* mostly quantifies injury anyway, with special effects occurring based on certain fractions of HP (such as HP/2 for a major wound, HP/3 to cripple an extremity, or instant death at 5×HP). At its simplest, only the cumulative effects of received wounds are tracked, applied as conditions or afflictions.

*Replacing Hit Points with
an effects-based method for injury.*

TARGET ROBUSTNESS

Although Hit Points go away as a measure of incremental injury, *something* needs to set the scale. Thus, determine a creature’s ST and HP as normal. Then look up the creature’s HP on the *Robustness Threshold Table* (p. 28) and note the corresponding Robustness Threshold (RT).

Example 1: An average ST 10 mook with no HP adjustments looks up 10 on the table to get a RT of 4. A warrior with ST 14 and HP 17 looks up 17, so RT is 5.

Example 2: A 1,000-ton (two-million-pound) Age of Sail frigate has $4 \times (\text{cube root of } 2,000,000) = 504$ HP, giving RT 14.

Example 3: A smaller creature, with ST and HP of 1, looks up 1 on the table and finds the Robustness Threshold is -2. A wound that is a scratch for an RT 4 adventurer has a chance of rendering the RT -2 creature unconscious!

Robustness Breakpoints

Many character types permit purchasing Hit Points to a higher or lower level, with +/-30% allowed even for mundane creatures. The knight in the *Dungeon Fantasy Roleplaying Game*, for example, can add up to 7 extra HP, or 50% of their recommended starting ST.

Using Robustness Thresholds, all the increments on the *Robustness Threshold Table* represent a 50% change in the center of the range per level. In general, allowing an adjustment of one Robustness Threshold level up or down meets the guidance for limiting HP relative to ST. Thus, a knight with HP 14 starts at RT 5 and could purchase RT 6 by spending enough character points on additional HP to hit the breakpoint for RT 6 at HP 19, costing 10 points (5 extra HP normally cost 10 points). A giant creature with HP 38 (RT 8) wishing to increase to RT 9 would have to pay as if to buy up to HP 61, costing 46 points.

Robustness Threshold Table

HP	Robustness Threshold	HP	Robustness Threshold
1	-2	85-120	10
2	0	121-180	11
3	1	181-240	12
4-6	2	241-360	13
7-8	3	361-600	14
9-12	4	601-840	15
13-18	5	841-1200	16
19-24	6	1201-1800	17
25-36	7	1801-2400	18
37-60	8	2401-3600	19
61-84	9	etc.	etc.

The table is built by taking each step on the *Size and Speed/Range Table* (p. B550) and extending the RT for that value to 1.2 times that value. So, the next entry, for 5,000 HP, goes up to ST/HP 6,000. The range, of course, starts where the previous range left off: RT 20 is from ST/HP 3601 to 6,000, and RT 21 picks up at ST/HP 6,001 and extends to 1.2×7000 , or 8,400.

Option: Heavily Robust

GURPS has an uneasy relationship with mass for characters, but an alternate way to determine RT is to base it all on mass, as is done for objects. A normal creature (not Unliving, Homogeneous, or Diffuse) determines HP as two times cube root of weight. This collapses most common character weights into only a few bands (see below). For humans of average build, a PC should have at least ST 14 before RT 5 is justified. Even bucketloads of extra HP are a tough justification to push RT beyond 5 on this scale – though as always, with GM permission, a proper demigod might well be as robust as a horse! Instead of adjusting someone's Robustness Threshold by buying extra HP, use alternate boosts to survivability: High Pain Threshold, Hard to Kill, Fit/Very Fit, and the like.

Weight	RT	Weight	RT
8-26 lbs.	2	244-669 lbs.	5
27-76 lbs.	3	670-1,952 lbs.	6
77-243 lbs.	4		

Determine the cost of changes in RT by taking the difference between the highest HP listed for the original and final RT values on the *Robustness Threshold Table* (above). Then multiply the difference by 2 points to raise RT, or by -2 points if lowering it. Any more than a +/-2 change in RT level is discouraged.

Example: A gnome is normally about 80 lbs., which is RT 4. The game calls for them to be particularly frail, so RT is bought down. The HP value baseline for RT 4 is 12; RT 3 is 8 and RT 2 is 6. It would therefore be a -8-point disadvantage to lower to RT 3, and -12 points to RT 2. A human who is normally RT 4 due to weight and size would spend 12 points to obtain RT 5 and 24 points to purchase RT 6.

A hero is an ordinary individual who finds the strength to persevere and endure in spite of overwhelming obstacles.
– Christopher Reeve

REPRESENTING DAMAGE

The potential to cause injury is described as *damage* in **GURPS**. In this system, the initial steps are handled normally: roll basic damage on a hit and subtract DR; the result is the *penetrating damage*. If this is greater than zero, look up its value on the *Wound Potential Table* (below) and read off the associated *Wound Potential* level, which is on the same scale as Robustness Threshold.

Wound Potential Table

Penetrating Damage	Wound Potential	Penetrating Damage	Wound Potential
1	-2	85-120	10
2	0	121-180	11
3	1	181-240	12
4-6	2	241-360	13
7-8	3	361-600	14
9-12	4	601-840	15
13-18	5	841-1200	16
19-24	6	1201-1800	17
25-36	7	1801-2400	18
37-60	8	2401-3600	19
61-84	9	etc.	etc.

This table is *identical* in values to the *Robustness Threshold Table* (above) and is extended the same way.

INJURY AND SEVERITY

The extent of a new wound (its *Severity*) equals the Wound Potential minus the Robustness Threshold plus Severity modifiers (see p. 29) based on the type of attack and nature of the target. Severity levels with effects are rated from -6 (which will always be 1/10 of a target's equivalent HP or lower) to 6 (damage equal to 10x or more of the target's HP). Severity levels below -6 generally have no effect on the target (but see *Penetrating Injury*, below, for one exception).

Example: A 3-HP wound (Wound Potential 1) compared to an adventurer's Robustness Threshold of 4 produces a Severity -3 injury.

The purpose of Severity is to provide a single effects-based chart that, by virtue of being compared to the HP-based Robustness Threshold, is already scaled to the creature's toughness, size, or strength. All 10-HP wounds are not created equal . . . but all Severity 2 wounds are treated the same way.

Penetrating Injury: Regardless of whether an injury is severe enough to impose a wound-based condition, if *any damage at all* gets through DR, follow-up effects such as poison apply. A bee sting without venom, or an injection from the thin needle used to deliver an influenza vaccine, is essentially unnoticeable. Both attacks are delivery vehicles for after-penetration effects: potentially lethal allergic reactions in the case of the sting, or beneficial Immunity or Resistance to a disease for the vaccine.

Severity Modifiers

After determining the basic Severity, modify that number based on the nature of the attack and the target. Given the scope of **GURPS** material, the following lists are not exhaustive!

Damage Type Modifiers

For all targets except Diffuse, Homogeneous, or Unliving ones: small piercing, -2; cutting/large piercing, +1; impaling/huge piercing, +2.

Hit Location Modifiers

Severity modifiers for hit location replace, rather than augment, certain damage type modifiers: neck, +1 (crushing and corrosion), +2 (for cutting); vitals, +3 (+2 for tight-beam burning); skull, +4; face, +1 (corrosion only; see p. B399). The wounding modifiers for large piercing, huge piercing, and impaling are reduced to 0 on arms, legs, hands, and feet.

If the rules in the **Basic Set** (pp. B398-399) say that you cannot specifically attack a location (say, the eye with a crushing attack), those rules still hold with this system.

Target Composition

If the target is *Unliving* or *Homogeneous*, use these Severity modifiers *instead*:

- Unliving: impaling/huge piercing, 0; large piercing -2; piercing -3; small piercing -4
- Homogeneous: impaling/huge piercing -2; large piercing -3; piercing -4; small piercing -6

Wounds to *Diffuse* targets suffering potential injury from piercing or impaling attacks have Severity level -6 (a scratch, according to the *Conditional Effects Table*, below), regardless of the extent of penetrating Wound Potential. Other attacks are treated as having a wound Severity of -4, unless they fall into the exceptions listed on p. B380; thus, area effect, cone, and explosion attacks are treated normally. Combined with the rules for *Multiple Injuries* (p. 32), this means it will be even more challenging to defeat a swarm or other Diffuse attack by opening up on it with an arrow storm or machine gun – scratches no longer provide 1 HP of guaranteed ablation per hit!

Severity Effects

Wound Severity determines what conditional effects the target experiences. Wounds with Severity of 0-1 inflict the equivalent of between 1× and 2× a creature's full HP. Wounds to the torso or head with Severity 2 or higher are *potentially lethal*.

Look up the wound Severity on the table below to determine the conditional effects of the injury. *Gross effects* are described below. The *shock* penalty applies for the next turn only and works the same as in the **Basic Set**; see p. B419. Alternatively, instead of the shock penalty, use the "Pain" column to determine the painful affliction the victim experiences; see p. B428 for effects.

A wound that is Severity -6 or higher produces a shock penalty and may cause other gross effects. Upon receiving a Severity -2 wound or *higher*, make an immediate HT roll for knockdown and stunning.

EYE HITS

The eye presents minimal resistance to damage. Any attacks on the eye must be examined twice, just as in the regular rules. The first time is to determine if there's enough damage to blind the eye, and the second time is treating all penetrating damage as a skull hit.

The gross effects to the eye are determined by adding +6 to the wound's Severity. Any effects greater than crippling (blinding) are ignored.

Next, an eye hit is also a skull hit. To get the wound's final Severity, modify the basic Severity by +4 (do not include the damage type modifier).

Wounds to Extremities

Arms, legs, hands, feet, and eyeballs are easier to wound than the torso. If using the rules for hit location, modify the Severity of the wound as follows when determining gross effects only (but not shock or pain): arm or leg, +2; hand or foot, +3. For hits to the eye, see *Eye Hits* (above). The wound's basic Severity stays the same for healing purposes.

Conditional Effects Table

Severity	Gross Effects	Shock	Pain
-7 or less	None	–	–
-6	Scratch	-1	Mild Pain
-5	Minor Wound	-1	Mild Pain
-4	Minor Wound	-2	Moderate Pain
-3	Minor Wound	-3	Moderate Pain
-2	Major Wound	-4	Severe Pain
-1	Reeling	-4	Terrible Pain
0	Crippled	-4	Agony
1	Crippled	-4	Agony
2	Mortal Wound	-4	Agony
3	Mortal Wound	-4	Agony
4	Instantly Fatal Wound	-4	Agony
5	Instantly Fatal Wound	-4	Agony
6 or more	Total Destruction	–	–

Gross Effects

None: The attack does not harm the opponent, but see *Penetrating Injury*, p. 28, for one exception.

Scratch: This category indicates a near-negligible wound, but a wound nonetheless. Scratches are not subject to wound accumulation.

Minor Wound: This trivial wound produces only a small shock penalty for the conditional effect, but may cause mild or moderate pain (if using those rules). Minor and higher wound levels may be subject to wound accumulation; see *Multiple Injuries*, p. 32.

Major Wound: A major requires a HT roll to avoid knockdown and stunning (see p. B420 for modifiers).

Reeling: You have received a wound dreadful enough to impair your mobility. In addition to checking for knockdown and stunning per a major wound (p. B420), your Move and Dodge are halved (round up).

Crippled: The body part struck is severely damaged and does not function properly. Crippling damage requires an instant HT roll to remain conscious. If successful, the victim must check for knockdown and stunning per a major wound (p. B420). Extremities automatically suffer the effects on p. B421 for crippling injuries; see p. B422 for how long they take to heal.

Mortal Wound: A hit to the head or torso of this Severity calls for a HT+2 roll, at a penalty equal to the wound Severity level (thus, a Severity 3 wound rolls vs. HT-1). Failure results in death. This roll is repeated after one minute, again after an hour, and then again each 12 hours thereafter. (This is a *slight* tweak to the roll frequency on p. B423.) If the victim doesn't die, check for unconsciousness, knockdown, and stunning at a penalty equal to the wound Severity. Limbs and extremities are destroyed (mangled or severed, depending on damage type) at this level or higher. Spells or modern medicine may be able to revive you.

Instantly Fatal Wound: You die on the spot, without the benefit of a HT roll. Many types of ultra-tech and magical healing will not work on instantly fatal wounds. Great Healing (**GURPS Magic**, p. 91) and Resurrection (**GURPS Magic**, p. 94) will work on Severity 5 and lower, but – among non-magical solutions – only the regeneration tank, chrysalis machine, and the regeneration ray from **GURPS Ultra-Tech**, pp. 201-202, have a chance of treating Severity 4-5 wounds.

Total Destruction: You die, and your body is completely destroyed, Friedrickburger style (p. B419). Wounds at the level of total destruction are by definition untreatable by magic or science unless special circumstances exist (Unkillable 2+, for example, or reality-altering magic such as Great Wish).

Example: A dragon with Robustness Threshold 7 is hit by a crossbow bolt to the eye for 7 damage after DR (Wound Potential 3). This results in a basic wound Severity of -4. It's an eye hit, and so is a special situation; see *Eye Hits* (p. 29). To determine the gross effects to the eye, add 6 to the base Severity, for Severity 2; the eye suffers a "mortal wound," but any effects greater than crippling (blinding) are ignored. The crossbow strike is also a full-power skull hit, so the +4 Severity for the skull location replaces the +2 Severity for the impaling damage type, resulting in a Severity 0 wound to the skull. This is bad news: The dragon has taken a major wound to the skull, and must roll instantly to remain conscious. Even if successful, the creature must check for knockdown and stunning at -10 due to the effects of the eye hit location.

HEALING

A character who is wounded has important story effects, as their impairment impacts their effectiveness until they heal. Note the Severity of the most grievous wound (alternatively, note the Severity of the most serious torso wound, plus the Severity of wounds to the limbs, which cripple more easily).

Wounds can heal naturally, or you can help them along through medicine or magic.

Natural Healing

To find out how long it takes for a wound to heal, look up the Severity on the *Natural Healing Table* (below). Note that while the injury itself heals over time, the effects of *crippling*

injury take months to heal if lasting, and never heal if they are permanent (p. B422). If it's useful to the adventure to know when wound levels decrease over time, take the difference between the healing time of the original wound and next lower level.

Example: A knight who suffers a Severity -2 major wound (seven days to fully heal) has that wound reduced to Severity -3 (five days to completely heal) in two days. If modern medicine can revive and sustain a character with a Severity 4 wound (which is usually instantly fatal), it will take 10 weeks to heal completely.

Natural Healing Table

Severity	Time	Severity	Time
-6	1 day	0	2 weeks
-5	1.5 days	1	3 weeks
-4	2 days	2*	5 weeks
-3	5 days	3*	7 weeks
-2	7 days	4†	10 weeks
-1	10 days	5†	15 weeks

* Only possible if the person was first stabilized; see *Stabilizing a Mortal Wound*, p. 31.

† The person must first be resuscitated or revived and then stabilized before natural healing can begin.

For an overhaul of the Fatigue Points system, see "The Last Gasp" in Pyramid #3/44: Alternate GURPS II.

Medical Skills

While many folks get better on their own over time, adventurers may get help from (mostly) trained professionals or (presumably) talented amateurs.

First Aid

see p. B424

First Aid is used for bandaging and mild healing (by treating shock). *Bandaging* normally arrests bleeding on a successful roll if done within one minute of the injury, which is pretty forgiving for sucking chest wounds; under this system, subtract the wound Severity from First Aid skill (wounds with negative Severity provide a bonus).

After bandaging, the aid-giver may put in the requisite time and effort for treating shock. The most serious wound that can be treated by TL is given in the *Threshold First Aid Table* (p. 31). If the wound is treatable at all, then a successful First Aid roll (penalized as per bandaging, above) reduces the Severity of the wound by one level on a success, or two levels on a critical success. A critical failure makes the wound one level worse! If a wound's Severity drops lower than -6, it's effectively cured, and doesn't impair adventuring activities at all. Only one attempt is permitted per wound. First Aid cannot improve the Severity of old wounds, only adjust the Severity of fresh injury. The best case for First Aid is that you don't get worse than you started after adjusting for the effects of a new injury!

Threshold First Aid Table

TL	Time	Maximum Treatable Severity Level
0-1	30 minutes	-4
2-5	30 minutes	-3
6-8	20 minutes	-2
9+	10 minutes	-1

Stabilizing a Mortal Wound

Surgery, magic, or ultra-technology – in addition to speeding up the healing of crippled body parts – can stabilize a mortal wound or revive someone who has died from a mortal wound. Take a penalty to the Surgery roll equal to wound Severity (+2 at Severity -2, -4 at Severity 4, etc.). If by dint of natural healing (a critical success on the HT roll to not die), magic, or medicine the victim's condition stabilizes, they then fall under the rules on p. B423 for "trauma maintenance," rolling vs. the better of their HT or their caregiver's Physician skill (or equivalent skill). A failed roll still kills you, but if you can be revived via resuscitation (be it mystical or medical) and your life can be sustained, you will heal naturally. You still need to make HT rolls to avoid a fatal relapse (resumption of bleeding, organ failure, etc.) so long as your wound condition is Severity 1 or worse; once you heal to Severity 0 or lower, you may be unconscious, but your life is no longer in danger.

Medical Care

The Physician skill (which only exists at TL5+, per p. B213) may be used to treat a wound of any Severity. Roll each *week* as per First Aid (at a penalty equal to the Severity of the wound), with a bonus for available tools and drugs equal to the gear's TL-5 (to a maximum of +4). Success improves the wound level by one; critical success by two. Critical failure worsens the wound by one level! Note that most physicians will stop treating wounds when they get to Severity -3 or better, letting them heal on their own – if it ain't crippled, nature'll take care of it!

Magical Healing

Spells and potions have very specific effects, normally healing a random (for potions) or fixed (for spells) number of HP.

Look up the HP healed by the spell or potion in the "Penetrating Damage" column of the *Wound Potential Table* (p. 28) and note the corresponding Wound Potential. Subtract the target's RT from the spell/potion's Wound Potential to get the magical healing's Efficacy. If the Efficacy is equal to or higher than the wound's Severity, the wound is completely healed. Otherwise, the wound heals (becomes less severe) by an amount equal to 4 - Severity + Efficacy.

Example: A mage casts Major Healing for 3 energy (normally restoring 6 HP) on his wounded barbarian buddy, Nanoc, who has RT 5. The 6 HP correspond to a Wound Potential of 2; subtracting Nanoc's RT 5 from this results in an Efficacy of -3. The spell would completely cure wounds of Severity -3 and lower. If Nanoc had a Severity -1 wound, it would improve by $(4 - (-1) + (-3)) = 2$ levels, becoming a Severity -3 wound. The healing would not have any noticeable effect for a wound of Severity 1 or worse.

TIME-BASED RECOVERY

As an alternative to the threshold-based First Aid system (see pp. 30-31), use the **Basic Set** rules for First Aid (p. B424) and healing spells, but read "Hit Points restored" as an instant reduction in days of natural healing.

Treated for shock for 1d-2 HP of recovery? That cuts down the natural healing time by 1d-2 *days*. A spell restores 2 HP per energy point spent? Spend three energy and healing accelerates by six *days*. Thus, if that healing spell is cast on an adventurer who is suffering a Severity -1 wound (which would normally heal naturally in 10 days), those six days of healing would reduce the total healing time from 10 days to four days. This also instantly drops the wound from Severity from -1 to -4. Instead of reeling and being in Terrible Pain, the conditional effects drop to nothing except having to deal with Moderate Pain. A Minor Healing potion from the *Dungeon Fantasy Roleplaying Game* would provide 1d days worth of accelerated healing; on a roll of 4 or higher, the remaining wound would be healed.

This is simple and makes a lot of sense: Magical or high-tech medical aid accelerates or replaces the natural healing processes of a creature, and "days of healing" is generic and universal.

SPECIAL TRAITS

There are many traits that **GURPS** uses to modify a creature's response to injury.

Advantages

Blessed (Heroic Feats): Increases Robustness Threshold by 1. When it wears off, the Severity of injuries increases by one level.

Hard to Kill: Apply its bonus to HT rolls for Severity 2 wounds and higher.

Hard to Subdue: The bonus applies only to rolls for the effects of wounds that lead to unconsciousness.

High Pain Threshold: While you never suffer a momentary shock penalty, if using the rules for pain (p. 32), add +3 to HT rolls when determining if you suffer the effects of lingering pain. This increases your chances of rolling a critical success as well.

Injury Tolerance: Diffuse, Homogeneous, and Unliving have already been discussed on p. 29.

Rapid Healing: For Rapid Healing, at the end of each day of food and rest, roll HT+5; if successful, reduce the total healing time by one day. With Very Rapid Healing, a successful result means a two-day reduction.

Regeneration: Read HP recovered as days of healing time reduced per timeframe given. Thus, Regeneration (Extreme) reduces the healing time by 10 days per second.

Supernatural Durability: You are still completely immune to shock, physical stun, and knockout. You are immune to crippling injuries unless you have suffered a Severity 0 wound or higher. At Severity 1 and worse, you are at half Move and can now be crippled as normal.

If you receive injuries sufficient to induce a Severity 2 wound, you could be killed by the specific item that can kill you, while if you suffer a single wound of Severity 4 from this item, you die automatically. If you are already at Severity 4 from other injuries *not* caused by your special vulnerability, a wound of any Severity – even less severe than a scratch! – will kill you. A single attack from any source that delivers a Severity 6 wound will still kill you instantly.

Unkillable: As long as you have not suffered a Severity 6 wound, you cannot die and will heal naturally over time as per *Natural Healing* (p. 30); for example, 15 weeks to recover fully from a Severity 5 wound. With Unkillable 2, you may even recover from total destruction (Severity 6) in 15 weeks, regaining consciousness when your wounds heal to Severity -1 or better. With Unkillable 3, your ghost coalesces into a fully healed form when your wounds naturally heal to better than Severity -6. The key change for Unkillable is that there is no need to stabilize against death at any level. You die for good at Severity 6 with Unkillable 1, but only temporarily with Unkillable 2 or 3.

Vampiric Bite: Treat bloodsucking as bleeding (see below) for the victim. You may drain 1 FP per second by drinking blood, and you may regain 1 FP per 3 FP drained. You may also heal your wounds; *either* treat each 3 FP drained as one extra day of healing, or compare 1/3 the drained FP to your

Robustness Threshold as if it were damage, and you heal wounds of that Severity or lower.

Disadvantages

Just as with advantages, some disadvantages need to be tweaked.

Dependency: The cumulative nature of Dependency suggests it would work best by depleting FP at the same rate as the HP loss described on p. B130. First it wears you out, then it kills you.

Draining: You take a Severity -4 wound once per day. Apply the rules for *Multiple Injuries* (below) to determine if that wound worsens other wounds.

Hemophilia: Use the rules for losing blood as described on p. B138, using FP loss instead of HP loss.

Vulnerability: Wounding modifiers are replaced with Severity modifiers: $\times 2$ becomes +2 Severity, $\times 3$ becomes +3, and $\times 4$ becomes +4.

Weakness: Resolve taking this injury normally (or just start with a Severity -3 wound), but use the rules for *Multiple Injuries* (below) to see how each additional cycle of injury increases Severity.

Wounded: Attacks targeting your wound have +1 Severity.

SPECIAL CASES

The injury system as presented is fine for combat – low-grade wounds cause temporary shock and not much else, whereas more severe blows can result in instant impairment. What this system does is eliminate ablative or cumulative injury. Whittling down the foe with a series of minor wounds isn't going to happen unless one or more of the following options are turned on.

MULTIPLE INJURIES

Once a creature has been wounded to a certain level, suffering more than one wound of the same or lower Severity has limited follow-up effects (more-severe wounds replace the old condition with the newly inflicted ones). Scratches do not accumulate, but if someone who is already wounded at Severity -5 or greater takes an additional wound from their current Severity down to -5, make a HT roll, penalized by the Severity of the new wound. If that HT roll fails, increase the wound Severity by one level, and apply the new conditional effects.

A successful HT roll means the wound still applies the momentary shock penalty, but only the worst currently applicable gross effect (and pain level, if using that) applies.

PAIN

Getting wounded *hurts*. That pain is the body's warning system that informs of damage and risk to further activity. Each wound carries with it the risk of pain. When a wound is taken, make a HT roll immediately. If the roll fails, the person *immediately* gains the painful affliction appropriate to the wound's Severity; critical failure *increases* the pain

affliction by one level! If the roll is successful, reduce the pain by one level (moderate pain becomes mild pain) – or by three levels on a critical success. The level below mild pain is, of course, “no pain.” See p. B428 for the effects of moderate pain and higher; mild pain inflicts -1 to all DX, IQ, skill, and self-control rolls.

This replaces the shock penalty . . . but it *lasts*. In the heat of combat, someone may take a Concentrate maneuver to suppress the pain and fight on (make a HT roll, penalized by the current Severity level). The pain returns if the person is wounded again or when combat ends.

Horrific Damage: Being burned is one of the most painful injuries. For burning or corrosion damage, increase Severity by +2 for pain effects (only); gross effects are unchanged.

BLEEDING

Wounds bleed, in addition to physically disrupting tissue. In many cases, such as being shot, bleeding can be the primary method by which creatures are incapacitated by their wounds, and even seemingly minor wounds may suffer from severe bleeding. Blood loss is best modeled as loss of Fatigue Points, which eventually gets bad enough (0 FP or lower) to start causing additional injury. If desired, use these optional rules to model blood loss.

At the end of every minute after being wounded, make a HT-2 roll (modified as below). On a failure, you lose 1 FP and your Fatigue Point maximum decreases by 1. On a critical failure, you lose 1d FP and your maximum FP goes down by 2. On a success, you don't stop bleeding, but you don't lose FP. A critical success stops the bleeding.

Treat each wounded *location* as a unique source of blood and FP loss, using the worst damage type modifier (see below) for all of the wounds suffered – if you were stabbed, shot, and sliced in the leg, the impaling modifier is the worst of the three, so use that.

Apply the following modifiers to the roll:

Hit Location: -8 for skull; -6 for vitals; +1 for arm/leg, +3 for hand/foot. As always, damage type is irrelevant for wounds to the vitals and skull.

Damage Type: -3 for impaling or huge piercing; -2 for cutting or large piercing; -1 for piercing; no modifier for crushing or small piercing; +2 for burning or corrosion; +4 for tight-beam burning.

Severity: Subtract Severity as a modifier (Severity -2 is actually +2, while Severity 5 is -5).

Example: A knight receives a Severity -5 cut to the arm. Bleeding rolls are at +1 for the arm, -2 for cutting, and +5 for Severity, for a net roll of HT+2. Later in the fight, he is shot in the vitals with a small piercing (pi-) bullet for a Severity -1 wound. The modifiers are -6 for vitals and +1 for Severity; damage type is irrelevant for vitals wounds. The roll is vs. HT-7. A HT 10 regular Joe will succeed only on a 3, and critically fail on a roll of 13 or higher. On the average, poor Joe will have lost all his FP in about six minutes.

Recovering Maximum FP

The body will restore lost blood over time. At the end of each full day during which you get a full ration of food, plenty of water or juice, and have lost no FP for any reason, make a HT roll. If you succeed, your maximum FP recovers by 1, or by 2 on a critical success. There is no effect on a critical failure unless you also spent one or more FP during the recovery period – in that case, you start bleeding again!

VARIABLE INJURY

As with pain, gross wound effects can be treated as variable. When a wound is suffered, make a HT roll. Apply the current Severity level as a penalty to the HT roll. Success decreases Severity by 1, critical success decreases Severity by 2, and critical failure increases Severity by 1.

Note that adventurers tend to have higher HT than normal, so the end result of variable injury is a higher capacity to get cut and bashed on before gross effects (and optionally, pain) render the person combat-ineffective.

DEADLY FATIGUE

It is possible to kill yourself through extreme exertion. As FP go negative, you start risking injury. To simulate this, first determine the Fatigue Threshold (FT) by looking up the character's current maximum FP in the "HP" column of the *Robustness Threshold Table* (p. 28) and noting the corresponding "Robustness Threshold" value. Most creatures will have a FT of 4 to 6 and FP between 10 and 20.

Once FP drop below zero, each time FP are assessed (after a leg of a journey, when combat ends, or when you are on the receiving end of a deleterious effect such as a FP-draining spell or bleeding due to a wound), use the *Injury and Severity* rules (pp. 28-30) to check to see if the accumulation of FP

has resulted in lasting harm. Use the amount that FP have gone negative as the equivalent of HP of damage (so as *positive* value) to find a Wound Potential. Subtract your current Fatigue Threshold from this fatigue-based Wound Potential to determine a potential Severity for a fatigue-induced injury. Make a HT roll (unpenalized); if you fail, you suffer an actual wound of that Severity, or one level worse on a critical failure. On a success, reduce the Severity of the wound by two; a critical success means no wound at all.

Example: A tired wastelander has HT 10, FP 10, and Fatigue Threshold of 4 (based on her maximum FP of 10). She has been forced to go without food and drink for a while, and then suffers a laceration that causes serious bleeding. She bleeds until she is at -1 FP, at which point she must check for injury from loss of FP. The -1 FP is equivalent to a 1-HP wound, which has a Wound Potential of -2. The potential Severity of this fatigue loss is -6 – merely a scratch. She rolls vs. HT; on a success (or critical success, for that matter), she will take no injury. If she fails the roll, she will suffer a Severity -6 injury (a scratch, causing Mild Pain and that's it). Soon after, she is forced into combat and must expend FP, bringing her down to -6 FP. The Wound Potential for a 6-point injury is 2, which makes the stakes higher: a Severity -2 injury. If this HT roll fails, she'll suffer a major wound and be in Severe Pain. If she succeeds, she'll still suffer a Severity -4 injury, while if she critically fails, she'll be reeling with a Severity -1 injury . . . all due to overexertion!

PARTING SHOT

One of the bonuses of the conditional-effects-based system is in the interaction of small damage amounts with large creatures or objects. The aforementioned 504-HP (Robustness Threshold 14) ship's Severity -6 threshold is 50 HP of injury. That renders it effectively immune to small arms . . . as it should be. Large animals like an elephant with HP 45 will be functionally immune to injuries of less than 4 points through DR. With proper boxing gloves, using Defensive Attacks (*GURPS Martial Arts*, p. 100), and perhaps *Variable Injury* (above), a boxing match won't be fatal in the first few rounds every single fight.

GURPS really doesn't need Hit Points. They're convenient and most gamers are familiar with them, especially if coming from *video* games where the "Health Bar" is prevalent as a measure of grit. This effects-based system provides an alternate approach – try it and see if it works for your group!

ABOUT THE AUTHOR

Douglas Cole is the proprietor of Gaming Ballistic, LLC, a publisher of roleplaying games and crafter of Viking shields and training weapons. He also runs the weekly blog aggregation called GURPSDay. Find it all at gamingballistic.com. He has been roleplaying since 1981, and playing *GURPS* since 1988. His gripping supplement, *GURPS Martial Arts: Technical Grappling*, was released through Steve Jackson Games. He has since published four books independently through Gaming Ballistic: *Dungeon Grappling*, *Lost Hall of Tyr*, *Dragon Heresy*, and the first third-party adventure for the *Dungeon Fantasy Roleplaying Game*, *Hall of Judgment*. Douglas lives with his wife and daughters (!!) in Minnesota, where many are cold, but few are frozen.



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RANDOM THOUGHT TABLE

FLUID SKILLS

BY STEVEN MARSH, *PYRAMID* EDITOR

I'm a big fan of 1980s-era Batman. It's not really considered a "high point" for the character, but I always found its struggles at trying to bring the 50-year-old hero to some kind of modern significance to be endearing.

One thing I perversely appreciated about this era was that Batman was oddly inconsistent in his abilities. One moment he'd be a super-trained martial-arts master, and the next minute he'd be getting conked in the back of the head by a random mook with a shotgun butt. Or getting conked in the back of the head by a sled. Or getting conked in the back of the head by . . . look, Bruce Wayne took a *lot* of cranial trauma there for a while.

The interesting thing from my perspective is that character abilities seemed fairly *fluid*. For instance, if the plot needed Batman to be the world's greatest detective who could piece together vital information from the sketchiest of clues, he was exactly that. If it needed him to be befuddled or mediocre so he could get captured and attached to a deathtrap, the story was happy to oblige.

Of course, in the comics world, that's all accomplished via editorial fiat. And it's easy enough to explain in the gaming world: Even someone with Detective-16 is going to roll a critical failure every so often. But it made me ponder: Can I introduce this variety into the gaming world *without* relying on the vagaries of dice during individual actions?

A VERY PARTICULAR SET OF VARIABLE SKILLS

What – exactly – am I trying to accomplish?

Well, I'm trying to get heroes who have predefined skills that are *well-defined* but *variable*. In other words, someone who's a good detective should remain a good detective, sometimes fluctuating between being a *great* detective and being merely a *decent* detective.

Ideally, this system would somehow halt the traditional character-progression process (or at least modify it). In these kind of stories, the hero doesn't get *better* from issue to issue

(which would indicate a steady trickle of bonus character points), so much as *different*.

Such a system would still allow for changing skill levels (since there's a certain thrill to getting *better* at abilities).

There may even be the chance for differences in power levels between heroes on the same team. (Thus, all heroes might be built on 250 points to start, but then the next week, some are worth 260 points and others are worth 240 points.) This would emulate some ongoing stories well; sometimes Luke Skywalker seems to be as good a pilot as Han Solo, and sometimes one or the other seems clearly superior.

And, ideally, such a system would be fast-paced enough to be fun, and not require too much additional bookkeeping. Let's consider something like this system.

FLUCTUATING SKILLS

The basics of this system are fairly straightforward, but it can take some mental effort to wrap your mind around.

0) Create Heroes as Normal

First, each player should have a "standard" **GURPS** hero, created as they like, within the parameters set forth by the GM. For instance, if using one of the quick-start series such as **GURPS Action** or **GURPS Dungeon Fantasy**, just create heroes as usual with the templates.

1) Keep Track of Skills Used During Play

Each player should have a spare sheet of paper listing all their skills. This can be a copy of their character sheet, a dry-erase version of their hero's skills, or whatever. All that's really important is the list of skills.

If a hero uses a skill during an adventure, the player should keep track of that fact in some fashion – a checkmark or highlighter on the list of skills, for example.

It doesn't matter how many times a hero relies on a skill in the adventure . . . just that they tapped into the trait at least once. So, whether you use Broadsword once or 117 times, there'd still be one checkmark next to the skill.

2) Roll for Fluctuation

At the end of each adventure, review your list of used skills. For *each* skill, roll against it as you would normally while using it.

- If you *fail* this roll, your skill *increases* by 1.
- If you roll a *critical failure*, your skill instead *increases* by 2.
- If you *succeed* at this roll, your skill *decreases* by 1. This skill level *cannot* decrease below the starting threshold for the hero.
- If you roll a *critical success*, your skill instead *decreases* by 2. (Again, the skill level *cannot* decrease below the starting threshold for the hero.)

No metagame abilities – such as Luck, Unluckiness, etc. – can affect this roll. Skills that are not recorded on the character sheet – such as defaults – are not modified via this system.

Example: At character creation, Aurora starts with Broadsword-13. Living as she does in a sword-and-sorcery world, she uses that skill pretty much every adventure. At the end of the first adventure, she rolls against her Broadsword skill. She gets a 9; she succeeded, so normally she'd deduct 1 from her Broadsword skill (making it Broadsword-12), but since that would bring her below her starting threshold, it remains Broadsword-13 for the next adventure. At the end of the second adventure, she rolls a 17, so she critically failed; her Broadsword skill has two added to it, so her level is now Broadsword-15 for the next adventure. At the end of the third adventure, she rolls a 15; this is a success against her skill (which, again, is currently Broadsword-15), so that skill is reduced by 1 to Broadsword-14. After her fourth adventure she rolls a 3, and promptly curses that she couldn't roll that during the adventure proper; as it's a critical success, she should deduct 2 from her skill, but she can't go below her starting skill at character creation, Broadsword-13, so her skill is reduced by just 1, back to Broadsword-13.

These new skill levels are considered the heroes' "real" skill levels for all in-game purposes (defaults, etc.), *except* for spending bonus character points (if applicable – see below).

Bonus Character Points

The basic version of this system assumes that characters' core abilities will remain stagnant, fluctuating only through the use of this system. Thus, in this system, no bonus character points should be given at the end of each adventure (but see *What's Experience Worth*, below).

However, the system works fine if used in conjunction with traditional bonus character points; you'll end up with heroes that both advance as normal *and* fluctuate. In that case, the hero uses bonus character points to increase the *initial* levels on their character sheet. These permanently improved values are *not* reflected in the character's current skills (even if the current skill is *below* the new starting value); the hero will just need to get lucky (unlucky?) and fail a skill roll at the end of the adventure to bump up to the new baseline level (but again, see below for an alternate take on experience).

One area that requires special consideration is the addition of *new* skills. If the heroes are expected to remain stagnant,

then it shouldn't be possible to purchase new skills during play (regardless of whether bonus character points are given). However, it can occasionally make sense for a hero to acquire a new skill while remaining true to the core concept; for example, the original James Bond had no particular skill with computers (since those weren't particularly intended for everyday use in the 1960s), but the modern version certainly would have at least a baseline familiarity with computer systems. Thus, the GM may allow an otherwise stagnant hero to purchase a new skill, if it makes sense . . . but there's a danger (see below).

ANALYSIS OF FLUCTUATIONS

Mathematically minded gamers will realize that this system will – on a long enough timeline – naturally cause skills to gravitate toward 10 (or remain clustered around the starting skill's value, if it's higher). That's intentional! A skill level of 10 means the probability of success is about 50% . . . which means a failure about 50% of the time (and, again, a *failure* while rolling at the end of the adventure results in a skill *increase*). But this *also* means that an elevation from 10 to 11 (or a decrease from 10 to 9) results in a change in odds of 12.5% – the greatest change on the 3d curve that's intrinsic to skills. (Check out *Probability of Success* on p. B171 to see where these numbers come from.)

Thus, a hero who starts out with a skill at (say) 14 is only rarely going to see an increase via this system . . . and if they do, it will quickly revert back to the "norm" in an adventure or two. Conversely, a hero who starts at a skill of 10 has about a 5% chance of that skill going to 13 over the course of three adventures . . . but it'll almost certainly – at some point – gravitate back toward 10.

This means that any skills purchased at a low level – at character creation or in play – will nudge toward 10. That's why this system perhaps works best with template-heavy games that require skills at certain levels . . . and, frankly, fluctuating skills are probably not a great fit for gaming groups that focus on optimization or power-gaming.

FLUCTUATING VARIATIONS

The core system is fairly straightforward, but the group can tweak it to their hearts' content. Here are some additional ideas.

What's Experience Worth?

If everything else about the system remained the same, the players would probably use bonus character points awarded at the end of the adventure to increase their heroes' initial skill levels, which would ultimately increase their power level. However, this may not be desirable; for example, if emulating a comic-book setting, you may well want the heroes to be more-or-less the same throughout the entire campaign, outside of the natural fluctuations this system provides.

If so, one solution is to continue to provide bonus character points at the end of the adventure, but these points are *only* used as rerolls when determining the fluctuation of a skill roll. The player may choose after each roll whether to apply a bonus point to reroll, increasing their chances of failing that roll and thus increasing the skill.

(Of course, at a high-enough skill level, the odds of failing that roll become ever slighter, making it more difficult to grow skills even in this method.)

As a compromise solution, perhaps the GM could award a certain (smaller) number of character points at the end of an adventure – which could be used to permanently increase skill levels – and then a more standard award to influence skill-fluctuation rolls. This would allow a slow progression over a large number of adventures, coupled with the adventure-to-adventure variance that keeps things interesting.

A World of Secrets

It's entirely possible for the GM to make all these skill-fluctuation rolls in secret, only letting the player know what the new skill level is when it's time to rely on it during the adventure. If combined with using bonus points as rerolls at the end of the adventure (see above), the player should tell the GM how those points should be used (that is, "use all my points to try to increase Search," or "use up to two points to increase Psychology, and then use the last point(s) to try to increase Force Sword").

Wildcard Skills, I Think I Love You

This system works great with wildcard skills, resulting in heroes who can get universally good at doing whatever they do. However, it's entirely possible for the group to choose to skip wildcard skills with this system, not rolling to see if they fluctuate. This would result in a game where a character's core concepts (such as Detective! or Science!) would remain constant, while every skill that isn't essential to the concept may fluctuate a fair bit.

A Planet That's Evolving

As noted, this system revolves around the idea of 10 being the "baseline" skill level that skills will naturally gravitate toward, left to their own devices. There's nothing magical about this number; it's entirely possible to adjust this baseline upward or downward, depending on the power level of the campaign. For example, in a **GURPS Monster Hunters** campaign, the group might want a baseline skill of 12.

If so, simply add a skill penalty or bonus to all skill-fluctuation rolls at the end of the adventure, nudging the baseline in the direction you want. (Remember that – in this system – you want to *fail* rolls to increase the underlying skill, so bonuses are bad and penalties are good.) Thus +1 would nudge skills toward 9, -2 would nudge skills toward 12, etc.

It's also possible to add this penalty as the campaign progresses, as a natural way to move the *entire campaign world* of the heroes toward a more-powerful center. (There's some precedent in this in comic-book universes, where – say – Green Goblin starts out with a wacky plot to lure Spider-Man onto a movie set, and then a few years later, he's intent on global domination.)

It's also possible for the group to want a baseline skill that's higher or lower for certain kinds of skills; for example, a sword-and-sorcery campaign might have -3 for all martial skills, but the standard roll for everything that involves talking, thinking, and non-combat activities. However, that's probably more bookkeeping than most campaigns would appreciate.

THE LOWER THRESHOLD

The gaming group might not like the fact that skills can't fall below the lower threshold of the starting character sheets, since that removes some of the variability of the fluctuating-skill system. (If everyone is assumed to have their character-defining awesome skill at 15, then it'll hardly ever change.)

One solution is to allow the fluctuating skill roll to reduce skills a certain point below their starting level (say, two or three levels). Thus, if you say that fluctuation can permit a skill to fall 2 below the character-sheet threshold, then someone who starts with Broadsword-14 can find their skill dipping to Broadsword-12 (but no lower) with a bad roll or series of bad rolls.

Another solution is to limit higher skills, or limit the number of starting character points to keep the number of high skills to a minimum. For example, the players may be allowed no more than one skill at 14 (and no higher). This will keep the rest of their skills prone to fluctuation, while cementing their "character-defining awesome skill" and still leaving it some room to fluctuate.

Attributes, Powers, and More

It's up to the GM and the gaming group to determine whether they want to apply this system to powers, advantages, and the like. In general, the system works fine with any subsystem that uses skills (such as **GURPS Psionic Powers**). However, the GM might want to be careful if the baseline assumption of those powers is a fair bit lower than standard skill levels, since this can result in everyone having powerful skills that succeed 50% of the time. It would be perfectly in keeping with many genres to have powers and power levels remain unchanging and unchangeable throughout the course of a campaign.

In theory, the system could also be used for attributes (especially those situations where attributes are rolled instead of skills). However, that results in a lot of bookkeeping, and doesn't really fit most genres very well.

THE ADVANTAGES OF FLUCTUATION

With this system, heroes should still remain true to their core concepts, while the players can retain that "new-skill smell" from adventure to adventure, keeping their PCs fresh and a bit unpredictable. Part of heroism is doing what you thought was impossible, and there are more opportunities for heroism when you don't know the specifics of your characters' capabilities. In other words, when it comes to heroics, *not* knowing is half the battle.

ABOUT THE EDITOR

Steven Marsh has been editing *Pyramid* for almost 20 years; during that time, he has won four Origins awards. He has contributed to releases from Green Ronin, West End Games, White Wolf, Hogshead Publishing, and others.

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