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GEARCRAFT

AMAZING MACHINES AND THEIR CONSTRUCTION



THE TRUE20 STEAMPUNK SOURCEBOOK

REQUIRES TRUE20 ADVENTURE ROLEPLAYING BY GREEN RONIN FOR USE



GEARCRAFT

AMAZING MACHINES AND THEIR CONSTRUCTION THE TRUE20 STEAMPUNK SOURCEBOOK

PRODUCED BY SEAN PRESTON

WRITING AND RULES STUFF BY ERICA BALSLEY

LAYOUT AND EDITING BY SEAN PRESTON

COVER AND INTERIOR ART BY ANTHONY COURNOYER

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AMAZING MACHINES

Progress is built on the backs of dreamers and courageous folk willing to push the boundaries of just about everything. In a Steam Punk world, these constant pressures of progress express themselves in the form of technology, amazing machines that defy the rules believed to govern the world.

Characters can join the dash of technological progress if they have the patience, resources and, overall, the spark of genius to craft technological creations no one has ever seen before. In these pages, we present the rules to create such machines, using a simple point selection system to assemble anything that you can imagine.

Narrators are encouraged to tweak these rules as they see fit in order to make them most appropriate to their Steam Punk setting.

PROGRAMMING, INVENTING, AND SALVAGING

There is a new skill and two new feats that characters can make use of to enhance their ability to interact with the bizarre machines of a Steam Punk world. The new skill is Craft (analytic programming), which allows one to program a rudimentary form of artificial intelligence into machines with an analytical engine. The new feats are Inventor which one must have to create amazing machines, and Salvage, which lets one dig around in the guts of old machines to find valuable spare parts.

CRAFT (ANALYTIC PROGRAMMING)

By means of the Craft (analytic programming) skill, a character can teach an analytical engine to perform certain functions. This is only possible with amazing machines with the Limited Sentience special feature.

More sophisticated engines like those provided by the Full Sentience feature or those that construct characters possess are capable of learning on their own.

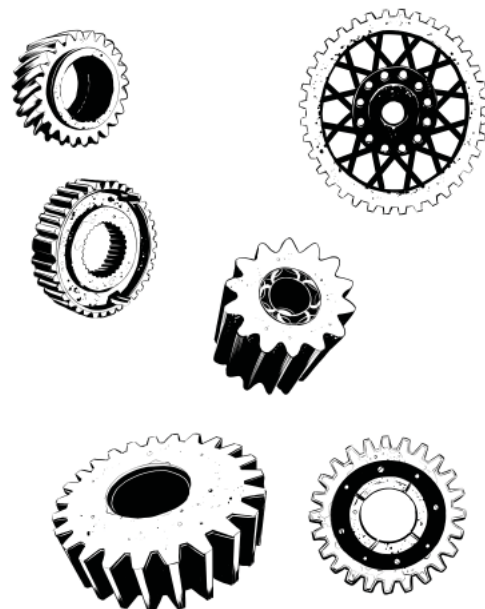
A character can 'teach' an analytical engine a number of functions, all with their own Difficulty.

ANALYTIC INSTRUCTION		
Type of Analytic Instruction	Difficulty	Time
Simple (artificial expertise)	15	1 hour
Moderate (specific instruction)	20	12 hours
Complex (artificial intelligence)	25	24 hours

Artificial Intelligence: This score is not useful for anything but the measurement of the learning capacity of the engine and the provision of a bonus to its other functions. Even so, the Intelligence must be 'activated' through programming before the engine can use it. With a successful Craft (analytic programming) check, a character can activate a +1 modifier from the analytical engine's Intelligence. A single check activates a +1 modifier, which means that multiple checks activate the engine's Intelligence until it reaches the maximum for its Intelligence score. A character cannot activate a modifier higher than that which the score could give to a normal character; this limits the modifier to a maximum of +5. Increasing the engine's Intelligence is a matter of hardware engineering and depends upon the Craft (mechanical) skill.

Artificial Expertise: Analytical engines can be taught skills. An analytical engine can learn one skill per point of its activated Intelligence modifier. Success in the Craft (analytic programming) check grants the engine 1 rank in one of the skills it knows or the first rank in a new skill. Appropriate skills for analytical engines are: all Craft skills except Craft (analytic programming), Disable Device, Drive, all Knowledge skills, Medicine, Perform, Pilot, Read/Write/Speak Language, and Research. A character cannot program more skill ranks in any skill than he himself has, although another character with such skills may assist him with the aid another action, in which case he grants his comrade the ability to input the desired skill ranks into the analytical engine instead of granting him an aid bonus to the Craft (analytic programming) check.

Specific Instruction: An analytical engine can be taught to perform a simple task that it could possibly perform with the equipment it can control. These instructions are similar to those for the Handle Animal skill. The Narrator decides which instruction is appropriate for any given analytical engine.



INVENTOR (EXPERT)

You can use your Craft and Knowledge skills to create amazing machines.



SALVAGE (GENERAL)

You can salvage parts from destroyed machines. Salvaging a destroyed machine takes time, as noted on the Salvage table. At the end of this time, make a Search check. If the check succeeds, you may increase your Wealth score by the amount indicated on the table, either by selling the salvaged parts for scrap or using them to offset the cost of future building projects.

SALVAGE			
Salvaged Machine's Size	Time Required	Search Check Difficulty	Wealth Increase
Tiny or smaller	10 min	15	+1
Small, Medium, and Large	30 min	20	+2
Huge	1 hour	25	+3
Gargantuan	3 hours	30	+4
Colossal	6 hours	35	+6
Awesome	12 hours	40	+8

Special: A particular machine can be successfully salvaged only once. Any further attempts to salvage the wreckage fail automatically.

VEHICLE MANEUVERING AND

VEHICULAR COMBAT RULES

For simply traveling from point to point, the vehicle used is largely a matter of personal style and finances. Skill checks are only required in extraordinary circumstances.

These rules are primarily focused on ground vehicles, namely cars, trucks, and light military vehicles. The rules can be modified for boats, heavier armored vehicles, and aircraft. In a Steampunk setting, characters will most likely use these rules during car chases, one of the most exciting action scenes that can occur during game play.

CHARACTERS IN VEHICLES

A character in a vehicle fills one of several possible roles, which determines what the character can do.

Driver: The driver of the vehicle controls its movement. Most vehicles have only one position from where the vehicle can be driven, so the person seated there is the driver. Driving a vehicle is, at a minimum, a move action, which means that the driver may be able to do something else with his standard action. There can be only one driver in a vehicle at one time.

Copilot: A copilot can help the driver by taking an aid another action. The copilot must be seated in a location where he can see the road and advise the driver. In a car, this generally means the front passenger seat. Aiding the driver is a move action, leaving the copilot with a standard action each round to do something else. A vehicle can have only one copilot at a time.

Gunner: Some vehicles have built-in weapons. If such a weapon is controlled from a location other than the driver's position, a character can man that position and become the gunner. A vehicle can have as many gunners as it has gunner positions.

Specialist: Specialists operate special machinery or instruments in the vehicle, such as navigation, observation and communication posts. Operating such machinery is usually a standard action. A vehicle can have as many specialists as it has special function posts.

Passenger: All other personnel aboard the vehicle are considered passengers. Passengers have no specific role in the vehicle's operation, but may be able to fire weapons from the vehicle or take other actions.

CHANGING SPEED	
Acceleration/ Deceleration	Difficulty
Low, 1/2 Acc/Dec	0*
Moderate, 1x Acc/Dec	5
High, 2x Acc/Dec	10
Extreme, 4x Acc/Dec	15

*Low acceleration/deceleration succeeds automatically.

VEHICLE MOVEMENT

Unlike characters, vehicles do not spend actions to move. Each round, a vehicle moves its current speed. The character only gets involved when he wants the vehicle to speed up, slow down or perform a specific maneuver.

VEHICLE SPEED

Every vehicle in this game has a speed score. This is simply the maximum number of feet the vehicle is capable of moving every round. A vehicle's current speed can be anything between 0 and its speed score. The speed at which a vehicle is traveling imposes a modifier on all Drive and Pilot checks to operate the vehicle. This modifier is listed in the Speed Modifier table. You can extend the table to determine the modifier for speeds higher than 250.

SPEED MODIFIER	
Speed	Modifier
5-50	+0
51-100	-2
101-150	-4
151-200	-6
201-250	-8

CHANGING SPEED

A character in control of a vehicle can change its speed once each round as a free action by an amount up to the acceleration or deceleration scores listed in the vehicle's description. This number is the value for moderate acceleration or deceleration, which is how much an operator can speed up or slow down at moderate risk of losing control of the vehicle. Low acceleration or deceleration is half the listed number, high acceleration or deceleration is twice the listed number and extreme acceleration or deceleration is four times the listed number.

Accelerating and decelerating require a Drive or Pilot check. The Difficulty depends on the amount by which the operator is attempting to increase or decrease the vehicle's speed. The check is also modified by the vehicle's current speed before applying the effects of acceleration or deceleration and by the vehicle's handling score.



MANEUVERS

In addition to changing speeds as detailed above, characters operating vehicles can also attempt a wide range of maneuvers. All maneuvers are considered to be move actions. In a single round, a character operating a vehicle may perform either one maneuver along with a standard action (such as an attack) or two maneuvers. Maneuvers can be attempted at any point during a vehicle's movement.

Maneuvers require a Drive or Pilot check, as appropriate for the type of vehicle and both the vehicle's handling and speed modifiers are applied. The various maneuvers possible in vehicles and the Difficulty required to attempt them are detailed below.

Avoid Hazard: Wrenching at his controls, the character operating the vehicle maneuvers wildly to avoid an obstacle in his path. The Difficulty of the Drive or Pilot check is based on the size of the hazard, as shown on the Vehicle Maneuvers table.

Climb/Dive: In the main, it is not necessary to track the altitude of aircraft in the game. So long as you know the distance between two fighting aircraft, combat can proceed without further complication. However, altitude can sometimes be an issue when an aircraft is involved in combat with a surface vehicle. In this case, the character operating the aircraft simply declares what altitude he is at, in terms of meters, at the beginning of the combat. By climbing or diving, a vehicle moves forward at half of its speed and either gains or loses altitude, as appropriate, by the same amount. Only aircraft can perform this maneuver.

Immelmann Turn: By climbing or diving vertically, then rolling before pulling level again, a vehicle can effectively change its direction to any facing. Only vehicles with aerial movement can perform this maneuver, and then only those with a maneuverability mode of good or better.

Jink: As a full-round action, an aircraft pilot may 'jink' his vehicle, taking extremes of evasive action in an attempt to throw off any attack. He gains a +4 dodge bonus to Defense until his next action.

Jump: A vehicle can attempt to jump over an obstacle, such as another vehicle or a ravine. The Narrator sets the Difficulty for the Drive check as he feels appropriate to the distance and obstacle being crossed, but it should be noted that the speed modifier of the vehicle is used as a bonus when jumping, not a penalty. If successful, the vehicle makes the jump, but a second Drive check is immediately required in order for the character to control the vehicle when it lands. The speed modifier applies as normal to this second check. Only surface vehicles may attempt jumps.

Landing: This maneuver is used to land an aircraft on a flat surface, such as a runway, landing strip or carrier ship.



Loop: The vehicle executes a full loop over the course of the round. Though its speed need not change, the vehicle will effectively not move on a map. Only vehicles with aerial movement can perform this maneuver, and then only those with a maneuverability mode of good or better.

Ram: Though this is a highly dangerous maneuver, a character may intentionally attempt to ram another vehicle. The Pilot or Drive check must equal or exceed the target's Defense. Ramming is covered in greater detail below.

Regain Control: A character must succeed at this maneuver in order to negate the effects of a mishap. The penalty for the mishap is always applied to the check, as well as the vehicle's handling score and speed modifier.

Takeoff: This is the maneuver used by aircraft in order to launch themselves from the ground or a suitable other surface such as the roof of a particularly large building.

Turn, Soft: By making a turn, the character can change the facing of his vehicle by up to 45°.

Turn, Sharp: A successful sharp turn will allow a vehicle to turn up to 90° in the distance indicated by its turn rate, instead of just 45° in the distance indicated by its turn rate.

Turn, Extreme: Wrenching hard at the controls, a character may turn his vehicle violently. A successful extreme turn will allow a vehicle to turn up to 135° in the distance indicated by its turn rate, instead of just 45°.

Turn, Handbrake: A successful handbrake turn will spin a vehicle around up 180° to face the opposite direction of travel, while coming to a complete stop, that is, a speed of 0. Aerial vehicles cannot perform this maneuver unless their maneuverability mode is good. Aerial vehicles with a perfect maneuverability grant a +5 to the Pilot check to perform this maneuver.

Zoom Climb/Power Dive: Upon successful completion of this maneuver, the vehicle will climb or dive at an angle of between 45° and 90°. The character operating the vehicle may choose how much of the vehicle's speed will be expended to gain or lose altitude but this must be more than half of its current speed. Surface vehicles cannot zoom climb or power dive.

VEHICLE MANEUVERS	
MANEUVER	DIFFICULTY
Avoid Hazard, Fine	0
Avoid Hazard, Diminutive	3
Avoid Hazard, Tiny	6
Avoid Hazard, Small	10
Avoid Hazard, Medium	15
Avoid Hazard, Large	20
Avoid Hazard, Huge	25
Avoid Hazard, Gargantuan	30
Avoid Hazard, Colossal	35
Avoid Hazard, Awesome	40
Climb/Dive	0
Immelmann Turn	20
Jink	20
Jump	15 to 25+
Landing	10
Loop	20
Ram	Target's Defense
Regain Control	10*
Take Off	5
Turn, Soft	0
Turn, Sharp	15
Turn, Extreme	20
Turn, Handbrake	25
Zoom Climb/Power Dive	15

* In addition to the vehicle's handling score and speed, this check is also modified by the severity of the mishap, as detailed on the following page.

MISHAPS

Whenever a character fails a Drive or Pilot check while operating a vehicle, he will start to lose control. The vehicle may skid, spin or collide into an obstacle, which may prove deadly to the character and all his passengers. It will also be much more difficult to maneuver a vehicle while it is out of control and the character operating it must attempt to regain control, as detailed above. When a Drive or Pilot check is failed, note the amount by which it was failed and consult the table below to determine what happens to the vehicle.

Slip: The vehicle starts to slip sideways, lose traction or begins to swerve slightly. The vehicle completes the maneuver being attempted but any further Drive or Pilot checks are made with a –2 penalty until control is regained.

Slide: The vehicle slides violently and teeters on the edge of being completely out of control. The vehicle only moves half of its current speed (though its actual speed does not change) and the maneuver is only partly completed. For example, any extreme or sharp turn will only result in a normal turn or a hazard will be clipped or sideswiped. If a jump was being attempted, the vehicle will not quite make the distance. Any further Drive or Pilot checks are made with a –4 penalty until control is regained.

Skid: The vehicle's speed drops by 10 and it skids its length to the left or right, determined randomly or at the Narrator's discretion. If this brings it into the same space as another vehicle or object, it collides (see below) and if any maneuver was being attempted, it fails completely. The vehicle's speed continues to drop by ten and move one length to the side each round until control is regained, the vehicle stops or it crashes into something. If a vehicle with a maneuverability mode of average or worse reaches 0 speed, it stalls and begins to drop by 100 feet each turn until control is regained. Any further Drive or Pilot checks are made with a –6 penalty until control is regained, and stalling aircraft have this penalty increase by –2 each turn that it drops.

Spin: The vehicle goes into an almost uncontrollable spin. Its speed drops by 10 and it moves in a random direction; this continues every round until control is regained, the vehicle stops or it crashes into something. The same conditions for stalling aircraft apply as per the skid mishap. Any further Drive or Pilot checks are made with a –8 penalty until control is regained.

Collision: Control of the vehicle is completely lost and it crashes into a nearby vehicle or object; see below. If multiple vehicles and objects are nearby, the Narrator should choose the nearest one or determine one randomly. If there are no nearby vehicles or objects, the vehicle goes into a spin.

VEHICLE MISHAPS		
Check Failed By	Effect	Drive or Pilot check penalty
5 or less	Slip	–2
6-10	Slide	–4
11-15	Skid	–6
16-20	Spin	–8
21 or more	Collision	Special

COLLISIONS

If a vehicle crashes into something, it immediately sustains damage based on its current speed and the size of the object or vehicle with which it collides.

If a vehicle crashes into a moving object, such as another vehicle, the Narrator must determine the total speed of the impact. If two vehicles are moving directly towards each other, add their speeds together for the purposes of determining collision damage. If they are moving in the same direction, use the difference of their speeds and if they are moving at angles to one another, use the highest speed. The damage a vehicle sustains from a collision is also modified by the size category of the obstacle it crashes into, as shown on the table below. The object struck by the vehicle will also take damage. The base damage is the same as for the vehicle, increased by the size category of the vehicle crashing into it.

A character controlling a vehicle may make a Drive or Pilot check as appropriate, in order to minimize the damage. This is a free action and the Difficulty of the check is equal to half the speed of the collision. The modifiers for the vehicle's speed and handling are applied as normal. If successful, the vehicle takes half damage from the crash. A character who is not in a vehicle (a pedestrian) but is involved in a collision with one can attempt a Reflex saving throw at the same Difficulty for half damage. Any passengers and crew within a vehicle involved in a collision will sustain damage equal to half the speed of the collision after accounting for the operator's Drive or Pilot check to minimize the damage. They can also make a Reflex saving throw at Difficulty 20 to further halve this damage.

COLLISION DAMAGE	
Speed*	Modifier
5-50	+4
51-100	+5
101-150	+6
151-200	+7
201-250	+8

* Extend the table to determine the damage for speeds higher than 250.

COLLISION DAMAGE INCREASE	
Size of Obstacle	Damage Increase
Fine	-8
Diminutive	-6
Tiny	-4
Small	-2
Medium	+0
Large	+2
Huge	+4
Gargantuan	+6
Colossal	+8
Awesome	+10

VEHICLE COMBAT

Vehicles engage in combat in a very similar way to characters and creatures, with a few modifications and adaptations, with attack rolls made by the vehicles' pilots or gunners against their targets' Defenses, accounting for distance penalties.

CREW QUALITY

Whether the Narrator is running adversaries' vehicles or just needs to fill out the ranks of the player characters' crew, it is often helpful to have a general indicator of a crew's skill with vehicle operations. The following table lists several levels of crew training and experience. The modifier should be used for attack rolls, skill checks and ability checks related to the operation of the vehicle.

CREW QUALITY	
Crew Quality	Modifier
Untrained	-4
Green	+0
Veteran	+2
Expert	+4
Elite	+8

INITIATIVE

There are a couple of initiative options to choose from during vehicle combat. When running an encounter between a player vehicle and a Narrator character vehicle, the Narrator can opt for the normal rules for character initiative. Characters will often have to delay their actions to wait for the pilot to maneuver the vehicle into position but combat should otherwise proceed as normal.

For encounters involving more than one

vehicle or vehicles with large crews, the Narrator can ask for one initiative roll for each vehicle, in which case the initiative roll is the normal d20 plus the vehicle's size modifier and its maneuverability score.

COMBAT ACTIONS

Movement and action in vehicle combat work just as they do in the normal combat rules. Each round, a character can move and take a standard action and a move action, two move actions or one full-round action. Operating the vehicle is a move action, so the pilot can do other things with his standard action, such as attacking or giving additional directions to the vehicle.

Attack: A character in a vehicle can make a ranged attack against another vehicle, character or creature. In addition to all the usual modifiers to the attack roll, the character applies the speed modifiers of both the vehicle he is traveling in and the vehicle he is targeting. This applies to characters using their personal weapons as well as to gunners using the vehicle's mounted weaponry. If both vehicles are traveling in the same direction, consider the target vehicle's speed to be half of what it is to determine its speed modifier to the attacker's roll. A gunner with more than one attack due to a high base attack bonus may perform as many attacks as he is allowed as a full attack, provided that the weapon he is manning does allow for multiple shots in the same round.

Evasive Action: This is a standard action equivalent to total Defense. The pilot maneuvers in a way to avoid incoming attack, making a Drive or Pilot check (Difficulty



10) applying the vehicle's speed modifier and handling. For every 5 points by which he exceeds the Difficulty, the vehicle and its passengers gain a +1 dodge bonus to Defense until the start of the pilot's next turn.

Ramming: As a standard action, a pilot can intentionally collide his vehicle with another that is adjacent to it. This requires a Drive or Pilot check applying the speed modifiers for both vehicles and the handling rating of the ramming vehicle. If the result equals or exceeds the target vehicle's Defense, the attack is successful. Collision damage is resolved for both vehicles as detailed above. The pilot of the target vehicle can make a Drive or Pilot check for half damage but the pilot of the ramming vehicle cannot, as he is specifically not trying to avoid the collision.

Targeting Run: As a standard action, a character operating a vehicle may maneuver into the optimum position from which to attack another vehicle. The operators of both vehicles make opposed Drive or Pilot checks, applying the handling score and speed modifiers of their own vehicles. If the attacking character wins the opposed check, all attacks and acquiring target actions from his vehicle to the target gain a +2 bonus until the start of his next action.

VEHICLE FIRE ARCS

Many weapons carried by vehicles are extremely limited in the direction they can fire, usually due to the dynamics of the vehicle or its great mass. Permissible fire arcs are:

Front: Front mounted weapons may fire at any target within a 90° arc to the front of the vehicle.

Left: Left mounted weapons may fire at any target within a 90° arc to the left of the vehicle.

Right: Right mounted weapons may fire at any target within a 90° arc to the right of the vehicle.

Rear: Rear mounted weapons may fire at any target within a 90° arc to the rear of the vehicle.

Boresight: Normally reserved for driver-operated or aircraft-mounted weaponry, such weapons can only fire in a straight line directly ahead of the vehicle.

Turret: Turret mounted weaponry can fire freely into any fire arc.

VEHICLE DAMAGE

Vehicles suffer both non-lethal and lethal damage as lethal, but ignore non-lethal damage with a bonus less than their Toughness. Vehicles also ignore "hurt" conditions; such minor damage is superficial or cosmetic in nature and doesn't affect the vehicle's operation. A "wounded" vehicle is damaged and suffers a 1 point reduction in Toughness. A "disabled" vehicle is badly damaged. Disabled vehicles are rendered completely inoperable; they cannot move, turn, maneuver, attack or

do anything else. A ground vehicle will coast to a stop, reducing its speed by 10 feet every round until it stops or hits something. An aircraft will plummet to the ground and crash. Further, a disabled vehicle is considered helpless and can be completely destroyed with a coup de grace attack. A "dying" or "dead" vehicle is completely destroyed.

CRITICAL DAMAGE

Unlike other objects with the construct type, vehicles are subject to critical hits. When an attack inflicts a critical hit on a vehicle, however, no bonus damage is applied. Instead, the critical hit may cause a specific effect that hinders or degrades the vehicle's performance or capabilities. If a vehicle suffers a critical hit, roll on the following table.

CRITICAL HIT LOCATION	
Roll	Location
1-3	Frame
4-7	Engine
8-10	Control
11-13	Weapons
14-17	Cargo
18-20	Crew

CRITICAL EFFECT

The critical effect depends on the location hit and the severity of the damage. The severity of critical damage is measured by the damage done in relation to the vehicle's Toughness and the vehicle's damage condition:

Light damage: Damage is less than or exceeds the vehicle's current Toughness.

Moderate damage: Damage exceeds the vehicle's current Toughness by up to 2 points.

Heavy damage: Damage exceeds the vehicle's current Toughness by up to 4 points.

Severe damage: Damage exceeds the vehicle's current Toughness by up to 6 points or brings the vehicle to Wounded on the damage track.

Catastrophic damage: Damage exceeds the vehicle's current Toughness by up to 8 points or brings the vehicle to Disabled on the damage track.

Frame: The vehicle's frame, chassis, or superstructure is damaged. This is normal vehicle damage with no extra effects.

CRITICAL HIT EFFECTS					
	Location				
Severity	Engine	Control	Weapon	Cargo	Crew
Light	–5 ft. speed	–2 penalty	–2 penalty	20% destroyed	+2
Moderate	–10 ft. speed	–4 penalty	–4 penalty	40% destroyed	+4
Heavy	–15 ft. speed	–6 penalty	–6 penalty	60% destroyed	+6
Severe	–25 ft. speed –10 ft. Acc.	–8 penalty	–8 penalty	80% destroyed	+8
Catastrophic	–25 ft. speed –10 ft. Acc.	–10 penalty	Weapon destroyed	100% destroyed	+10

Engine: The vehicle's engine or propulsion system is damaged. Reduce the vehicle's top speed by a random number based on the severity of the damage. Severe and catastrophic damage will also reduce the vehicle's acceleration rating; this number is listed after a slash. Aircraft and watercraft (including submersibles) have both their acceleration and deceleration reduced.

Control: The vehicle's control systems are damaged. All maneuvers suffer a penalty based on the severity of the damage.

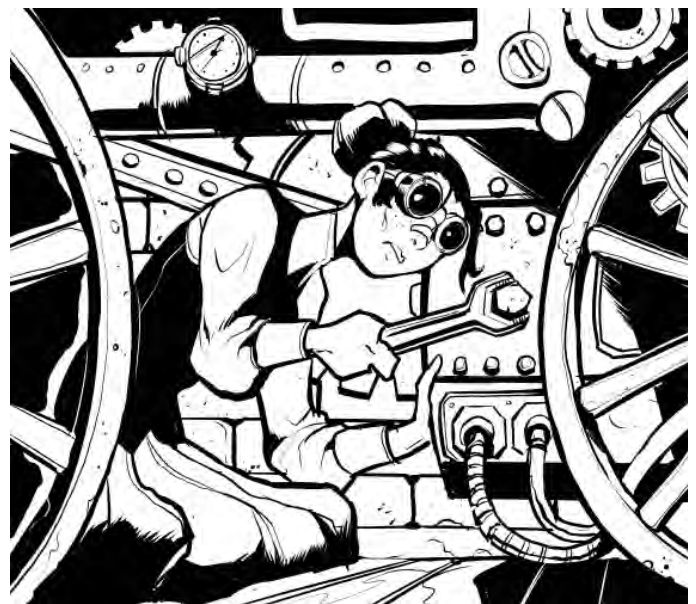
Weapons: One of the weapons is damaged. Attacks with that weapon suffer a penalty based on the severity of the damage.

Cargo: Any cargo the vehicle is carrying is damaged. The percentage of the vehicle's cargo (measured in pounds or specific items at the Narrator's discretion) destroyed by the attack is based on the severity of the damage.

Crew: The attack bypasses the vehicle's armor and strikes directly at its crew. Everyone on board the vehicle takes damage due to depressurization, flying shrapnel, shock, and collapsing structures, depending on the severity of the damage. Characters can make a Fortitude saving throw at Difficulty 20 to halve this damage.

REPAIRING CRITICAL DAMAGE

A character with the appropriate Craft skill can attempt to repair critical damage to a vehicle. The Difficulty for the Craft check is based on the severity of damage. Repairs to large vehicles require the coordinated efforts of at least 10% of the vehicle's listed crew. The Difficulty assumes that the technician has the necessary parts, although he can purchase them separately with a Wealth check with the listed Difficulty for each level of severity. A successful repair reduces the severity of the critical damage by one step, such as from 'heavy' to 'moderate.' Each critical hit effect must be repaired separately. Critical hits to cargo cannot usually be repaired, as these represent the destruction of items that are not part of the vehicle.



REPAIRING CRITICAL DAMAGE		
Severity	Craft Difficulty	Parts Purchase Difficulty
Light	10	4
Moderate	15	6
Heavy	20	8
Severe	25	12
Catastrophic	30	20

ATTACKING THE CREW

An attacker has the option of aiming directly at a vehicle's passengers or crew, either with a personal or a vehicle weapon. Unless the vehicle's description states the contrary, a vehicle provides different degrees of cover to its occupants, usually from one-half to total cover. The Narrator determines the amount of cover that the vehicle's own structure provides for its occupants, although some amazing machines have particular features or deficiencies that give specific values.

MALFUNCTIONS

Several items are constructed with technology barely out of the labs of inventors. These ingenious mechanisms are prone to failure at the worse possible times. In the equipment tables, those items with a number on the malfunction column have a malfunction threshold. When a character uses an item with a die roll and the result of the die falls within the threshold, the item suffers a malfunction. For example, if a machine has a malfunction threshold of 1-3, that means that if a character using the machine rolls a natural 1, 2, or 3 on the roll, the machine malfunctions regardless of the result of the actual roll plus modifiers.

When an item malfunctions, roll on the Malfunction Table. Some items have a bonus to the malfunction effect in addition to the malfunction threshold; when this happens, it is expressed after the threshold, separated by a slash; therefore a machine with a malfunction threshold stated as (1-2/+2) malfunctions on a roll of 1 or 2, and adds +2 to the roll on the Malfunction Table.

MALFUNCTION TABLE	
Roll	Malfunction Effect
1-7	Rattle and Hum
8-9	Minor Fault
10-11	Minor Glitch
12-13	Minor Breakdown
14	Moderate Fault
15	Moderate Glitch
16	Moderate Breakdown
17	Major Fault
18	Major Glitch
19	Major Breakdown
20	Blows up

Rattle and Hum: The item works, but there is an ominous sound coming from its parts, of grinding and rattling and other materials not agreeing with each other.

Minor Fault: The item works but it is not working right; the malfunction imposes a -2 penalty on tasks that the device is attempting or complementing until it is repaired with a Difficulty 15 Craft check.

Moderate Fault: The item works but it is not working right; the malfunction imposes a -4 penalty on tasks that the device is attempting or complementing until it is repaired with a Difficulty 20 Craft check.

Major Fault: The item works but it is not working right; the malfunction imposes a -8 penalty on tasks that the device is attempting or complementing until it is repaired with a Difficulty 25 Craft check.

Minor Glitch: The item does not work on this occasion, though it will by the next time it is used, after a good whacking, of course.

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Moderate Glitch: The item is jammed. The item does not work and requires a Difficulty 15 Craft check to repair it well enough to work properly again.

Major Glitch: The item is ruined. It must be repaired in order to work again, requiring a Difficulty 25 Craft check and the expenditure of raw parts with a Purchase Difficulty 5 points lower than the item.

Minor Breakdown: The item works incorrectly, not doing what it was intended to do and damaging itself in the process. The item suffers +1 damage ignoring armor. The item needs repairs as per a major glitch.

Moderate Breakdown: The item works badly, not doing what it was intended to do and damaging itself in the process. The item suffers +2 points of damage ignoring armor. The item needs repairs as per a major glitch.

Major Breakdown: The item works in all the wrong ways, not doing what it was intended to do and damaging itself severely in the process. The item suffers +3 points of damage ignoring armor. The item needs repairs as per a major glitch.

Blows Up: The item literally blows up, sending shards and splinters in all directions and dealing +2 damage to its wielder. The item is destroyed and beyond repair.

MACHINE DESCRIPTIONS

The different machines that can be built are described in 'stat blocks', a paragraph containing the information that describes the machine's characteristics on what it is, what it can do and what can be done to it. The different types of machine have different stat blocks but share some common elements; the values for these characteristics are described under each type.

Name: This is the name of the amazing machine, which can go from something as simple as 'airship' to 'Aerodynamical Multi-Positioner with Aeolopowered Propulsion'. The name should reflect what the machine does in some way, however obscure.

Type: All amazing machines are constructs by definition and have the same special qualities. Amazing machines are assigned to one of six broad categories: automata, equipment, structures, personal weapons, vehicles and artillery weapons.

Size: The machine's size depends on the creator's wishes as much as it depends on its function. A vehicle must be able to carry one or more people, while a personal weapon cannot exceed the intended user's size. As the creator designs his machine, he finds what the base size is for a machine with the functions he wishes and increases or decreases it with additional qualities. This list specifies whether weapons are light, one-handed or two-handed.

Operation: Amazing machines are not ordinary equipment and require a special skill set to work. This entry specifies which feat, skill or class feature is required to safely use the amazing machine. If a user does not have the required feat, ranks in a skill or class feature, he suffers

a -4 penalty to any and all rolls involved in operating the machine. If this field is missing from the stat block or the base attribute listing, then the machine has no particular requirement or can operate itself. Weapons will have the proficiency they require to be wielded here.

Levels: (automata only) This field gives the creature's number of Construct creature levels. The automaton's levels also determine how many skill points it has (if fully sentient), as well as its base saving throws and combat bonus. Equipment, structures, personal weapons, vehicles and artillery weapons do not have levels. Even an amazing vehicle that looks and works like a golem but is piloted by an operator does not have Construct creature levels.

Defense: Like all creatures, machines have a base Defense Value of 10, modified normally by their size, their Dexterity if they are automata, their maneuverability in the case of vehicles and any other installed quality, such as an electrokinetic force field.

Toughness/Armor: All objects, including machines, have a Toughness save. Automata use the default Toughness save rules for characters, whilst all other machines use the Toughness save rules for objects (see True20 Adventure Roleplaying). Armor plating can add a bonus to a machine's Toughness save.

Maneuverability: (vehicles only) The maneuverability score is a bonus that applies to initiative and to the Drive or Pilot checks of its operator, as it represents whether the machine is agile or cumbersome. This depends on the vehicle's size and any installed special qualities. The maneuverability mode is classified as clumsy, poor, average, good or perfect (see the vehicle combat rules) and defines how well the machine moves. For movement modes other than flying, simply replace 'fly' with 'walk,' 'burrow' or 'swim.' For maritime vessels, 'walk' applies to their movement on the water's surface, since 'swim' is meant for creatures and machines that can dive underwater.

Speed: (automata and vehicles only) This is how fast the machine advances in the different movement modes. This entry also specifies whether the machine is able to take the run action or not. For vehicles, this determines its maximum speed.

Acc/Dec: (vehicles only) This value is found immediately after the entry for 'speed' in vehicle descriptions. It defines by how much the vehicle may increase or decrease its speed as a moderate acceleration or deceleration. See the vehicle combat rules.

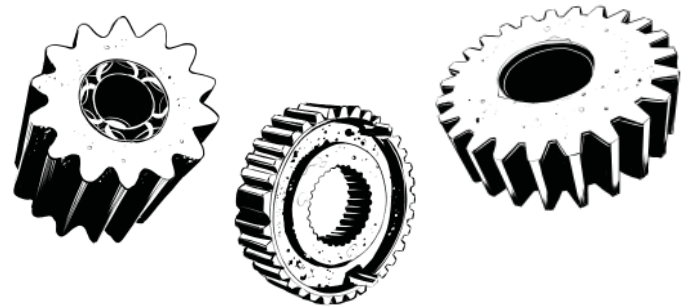
Turn Rate: (vehicles only) This specifies how much distance the machine covers before making a normal 45° turn, whether horizontally or vertically. Drivers or pilots may attempt to force a sharper turn in the same distance, eliciting a Drive/Pilot check with an increased Difficulty. Refer to the Maneuvering section of Vehicle Movement.

Attacks: This entry lists all the attacks and attack bonuses of a machine's weaponry. Only if the machine is

able to move by itself does it make attack rolls on its own. Otherwise, the number is an accuracy bonus granted to the attack roll of a wielder, pilot, operator or crew. Attacks listed here are from 'normal' weaponry or siege weaponry. Other attacks that stem from emulating a supernatural power, feat, or ability go into the special qualities field. Weapons will have an entry specifying whether they are melee or ranged (projectile or thrown) in this field, as well as any range increment.

Damage: Any weapon in a machine's arsenal has its damage listed here. Weapons include the type of damage they inflict (bludgeoning, piercing, slashing, ballistic, etc.) as well as their chances to score a critical hit and the amount of damage that a critical hit deals.

Special Features: Any effect stemming from advanced science, or that emulates supernatural powers, feats or other special abilities, is listed here. Such abilities are very costly to emulate through technology and some may not be possible at all at the Narrator's discretion. Enchanting an amazing machine with a supernatural power requires the Imbue Item feat. The full list of special qualities is given at the end of this chapter. Some special qualities require charges to function, in which case this is detailed between parentheses after the quality's name.



Saves: Objects do not have any inherent saving throw. If unattended, they fail automatically. If a bonus is present here, it means that the machine is built in such a way as to give its wielder, operator or crew a bonus to their own saving throws to protect their machine from harm. Luckily, most machines are immune to a lot of supernatural powers. Automata do have saving throw bonuses and roll their saving throws like any other character or creature.

Abilities, Skills and Feats: Machines do not have any inherent abilities, skill ranks or feats but the creator may emulate them through installing a special quality. Automata do have all abilities except Constitution but do not have skills or feats.

Power Source: Most machines require energy to work. The power source provides this energy in the form of charges, which are then spent by the actions the machine takes. If this field is missing, the machine's operation does not require internal energy.

Crew: (structures, vehicles and artillery only) This is the minimum number of operators that a machine requires to perform its functions.

Passengers: (vehicles only) This is the number of creatures a technological wonder may accommodate in addition to the crew.

Weight: (personal weapons and equipment only) This field gives the weight of the machine in pounds. Structures, creatures, vehicles and artillery do not list a weight because they cannot normally be carried; for extraordinary cases where one machine will carry another, use a rough guideline based on its size. See under each machine's base attributes.

Purchase Difficulty: This is the final cost that any character must meet to buy a machine, although the creator is free to attach any bonus to the Purchase Difficulty based on uniqueness or sentimental value. The cost to actually make the machine is part of the construction process and is described later.

Malfunction Threshold: The more complex a machine is, the more likely it is to malfunction. This field lists the machine's malfunction threshold; see Malfunctions, above. If this field is missing in the stat block, it means that the machine is solid and reliable and never malfunctions.

AMAZING MACHINE CONSTRUCTION

The following are some concepts used by all kinds of amazing machines.

BASE ATTRIBUTES

Machines have a set of attributes with predetermined values according to their nature and size, given in the tables under the description of each machine type. Creators can customize these options by increasing or decreasing the values and altering the final attributes of the machine.

CONSTRUCTION POINTS (CP)

The system to build anything from simple to complex amazing machines has a basic building block: construction points, referred to as CP from now on. Every framework, material, feature and deficiency carries a cost measured in points. As the player or Narrator makes his choices on size, materials and abilities, he adds the points assigned to each, or subtracts points by intentionally introducing deficiencies. The final CP amount is then used to figure out the cost of creating the machine, as well as playing a part in the research and construction process.



HARD SLOT (HS)

Depending on their size, amazing machines have limited space to accommodate some of the abilities measured in hard slots. Some options in machine construction have a hard slot value (referred to as HS from this point onwards) in addition to their CP, which they subtract from the machine's HS as they fill up space. HS is a relative value, as a slot in a small machine is not the same as a slot in a larger machine but the options that occupy one slot also change sizes to represent the additional potency that they must in order to work in a larger machine. Options without an HS value either do not take up significant space in the machine's frame, or are so evenly distributed throughout as to add nothing to it. The HS value will affect the machine's total weight.

SIZE MODIFIERS

Machines have a size just as creatures do, although they may be shaped a little strangely. The same size modifiers that apply to a creature's Defense and attack also apply to machines of similar size. That way, a Large creature and a Large machine both have a -1 to Defense and attack. Even if the machine was not designed for combat, someone might still try to hit it.

SKILL CHECKS

To make an amazing machine, an inventor must make a number of skill checks in order to successfully design and build the machine and all its parts. The first of them, the Research check, is a Knowledge check using a knowledge category appropriate for the machine in question such as technology or physical sciences. Specialties do apply here. The rest are Craft checks, most of them of the structural and mechanical category, although sophisticated machines may require a Craft (analytic programming) check in the case of telluric circuitry. The number of checks necessary is determined by the particular options the inventor installs on his machine and in the final CP cost.

CHARGES

Complex creations require an energy source to activate their functions; this energy requirement is expressed in charges. Some options need a specific number of charges to work each time they are activated and energy sources have a finite charge capacity. Spent energy sources must be renewed, by refueling, rewinding or recharging, depending on the individual technology.



CONSTRUCTION PROCESS

Designing and constructing an amazing machine is a matter of effort as well as inspiration; the process for devising one and later constructing it can be summarized in the following steps.

1. Select Type: First of all, the creator selects the kind of machine that he wants to build. He chooses to make a structure, an automaton, a vehicle, a personal weapon, a vehicle and artillery weapon, or a piece of equipment.

2. Select Size, Base Attributes and Options:

From the appropriate tables, the creator selects the size of his machine, which will define its base attributes and initial CP cost; he assigns the base options by adding or subtracting to the CP cost.

3. Select Materials: After deciding on the type and size of the machine, the creator chooses the basic materials for the frame. Each material modifies the base attributes inversely proportionate to its quality.

4. Install Features and Deficiencies: The creator installs the machine's functions, either altering the base attributes or adding and subtracting abilities with features and deficiencies. Each option has its own requirements and costs.

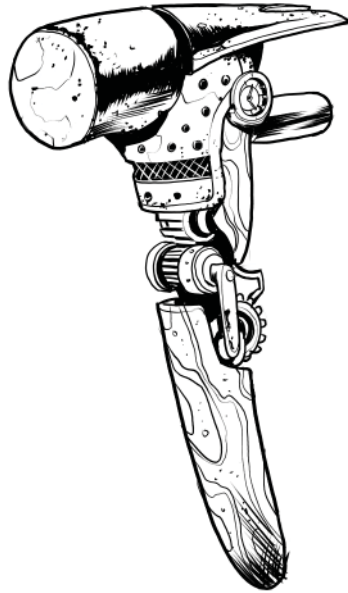
5. Install Power Source: Based on the technology and the energy requirements of the installed options, the creator now installs a power source to feed the machine's various systems.

6. Calculate Derived Values: With all systems in place, the creator adds up all the modifiers from options and special qualities to the base attributes.

7. Calculate CP: The creator totals all the CP from the base attributes and the installed options.

8. Calculate Cost and Weight: Based on the CP and HS values, find the actual Purchase Difficulty and weight of the machine.

9. Research, Design and Construction Checks: The character makes as many Knowledge checks as required to design the machine with all the planned characteristics, then purchases the raw material and finally makes all the necessary Craft checks for the main body and all special qualities that are installed as independent, smaller machines.



TYPES

As described earlier, there are six different machine types that a character may design and build if he has the appropriate feat.

AMAZING AUTOMATA

An automaton is essentially a machine pretending to be alive. The first constructs were powered by raw magic, being neither true machines nor creatures but lumps of matter animated by a hapless elemental shoved inside.

Adepts with a bent for craftsmanship made their creation rituals easier by building their constructs in such a way that they already had articulated bodies and could thus potentially move, although they lacked a motor force. These were the first true automata as science understands them: machines that simulate the workings of a living body, moved by a power source. If it can act on its own, even if it cannot move from a fixed spot, then it is an automaton.

AMAZING EQUIPMENT

A general definition of a piece of equipment is 'an object that is useful for something'. Amazing machines designated as equipment are, along with structures, the machines with the most room for variety. A piece of equipment is defined by its purpose and by a user's ability to wield it or wear it in order to accomplish some task or another. Tools such as hammers or screwdrivers are not considered amazing equipment, for anyone can build them; it takes a special spark of genius to create a hydraulic hammer or a roto gyro screwdriver. Amazing armor falls into the equipment category.

AMAZING PERSONAL WEAPONS

The races of the world have something in common when it comes to technological pursuits: everyone is looking to build better ways to kill everyone else. Personal weapons are those that a user can carry with him (cumbersome though they might be) and use freely. Amazing personal weapons characterize themselves by being hard to operate but in exchange can be devastatingly effective. Basic firearms are a technology already mastered by mundane craftsmen and early industrial processes but advanced and exotic firearms fall squarely into the category of amazing machines that only a few may build.

AMAZING STRUCTURES

Structures are like equipment in that they serve a purpose that accomplishes a task, or help the user accomplish a task. These machines are not built to be moved but rest in their place for a reason. They may range from great technological fortresses to automated mills. Making a fortress is better served by making a normal one and outfitting it with smaller amazing machines. If it looks like a building but is designed to move, then it is not a structure but a vehicle.

AMAZING VEHICLES

Vehicle design is one of the most well known areas where

geniuses can flex their creative muscles; an inventor's neighbors are used to seeing strange apparatuses blast from the house's ceiling (or walls) as the creator experiments with propulsion systems, energy sources or structural design. The form of a vehicle can lead it to be confused with other amazing machines but the basic definition is that if it is piloted by someone, either a pilot or a remote controller and it moves, then it is a vehicle. Remote-control drones can be confused with automata, as can giant bipedal, humanoid, steam-powered armor suits, but since they are controlled by an operator, they count as vehicles.

AMAZING VEHICLE AND ARTILLERY WEAPONS

Like personal weapons, these machines are built for the purpose of destroying or incapacitating a target; the difference is that they go in for large-scale effects. Vehicle and artillery weaponry cannot be carried by individuals, although once set in place they can be used by a single operator. Vehicle weapons can go from gigantic swords for humanoid vehicles to telluric energy artillery emplacements; they are designed to hurt vehicles and structures, rather than just individuals. If a creator wants to equip a huge automaton, a structure or a vehicle with assault weapons, he must design them separately as vehicle and artillery weapons, or make the machine capable of using mundane artillery such as ballistae or cannons.

BASE ATTRIBUTES AND OPTIONS

The creator selects the type, size and base attributes and options at the same time. In order to build an amazing machine, he must have the Inventor feat. Under each type's description, a table describes the base attributes for a machine of each size, plus other attributes that are already defined by the type regardless of the machine's size. At this point, the character is able to customize his machine by selecting options for it, such as general shape or method of use. The options presented under each type are exclusive of that type, and no other kind of machine may take them. Other more general options are available as special features.

BASE ATTRIBUTES

All machines have their base attributes defined in two forms: in a general list and in a table. The list describes those attributes that apply to all machines of the same type, regardless of size, while the table describes those that vary according to the machine's size.

BASE OPTIONS

The creator can skip ahead of the process and select a number of special features as base options before accounting for materials and power sources. These are listed under the base attributes. The machine must still comply with any requirement that the special feature demands. Special features chosen as base options cost 1 CP less than their normal cost, but unlike special features, they are an integral part of the machine. They cannot be removed, altered or replaced without a major overhaul of

the machine's main framework. Even if the special feature can normally be taken out of the machine and repaired independently, all Craft checks on it are made with the Difficulty appropriate for the whole machine.

AUTOMATA

An automaton has a basically humanoid shape: one head, one torso, two arms ending in hands and two legs ending with feet. The designer can alter this shape by taking options and special features. An automaton's intelligence does not come for free. Its brain must be developed separately with the Sentience feature which installs a small analytical engine in the automaton's body to work as a substitute for true sentience. An automaton without this special feature is simply a useless toy.

Size: Chosen by the creator. Construction Points: Each automaton size has a different CP cost; see the table below. The total cost adds the CP from special features.

Hard Slots: Each automaton size has its own number of hard slots.

Operation: None, unless the automaton is operated by remote control, for which see the Remote Control special feature.

Levels: Each automaton size has its own number of Construct creature levels; see the table on the next page.



AUTOMATA BASE ATTRIBUTES									
Size	CP	HS	Levels	Speed	Toughness	Armor	Damage	Str	Dex
Fine	20	2	1	10 ft.	-3	+0	-2	-2	+2
Diminutive	25	3	2	10 ft.	-2	+0	-1	-2	+2
Tiny	30	4	3	20 ft.	-1	+0	+0	-1	+1
Small	35	5	4	20 ft.	+0	+0	+0	-1	+1
Medium	40	6	5-6	30 ft.	+1	+1	+1	+0	+0
Large	45	7	7-8	30 ft.	+3	+1	+2	+1	-1
Huge	50	9	9-10	25 ft.	+5	+1	+3	+1	-1
Gargantuan	55	12	11-14	25 ft.	+7	+2	+4	+2	-2
Colossal	60	16	15-18	20 ft.	+9	+2	+6	+2	-2
Awesome	65	20	19-22	20 ft.	+11	+2	+8	+3	-3

Initiative: As with a normal creature, this is the automaton's Dexterity modifier, plus any other modifier from a special feature.

Defense: As with a normal creature, it is 10 + size modifier + Dexterity + any other modifier from a special feature.

Toughness: Automata determine their Toughness as per the Construct creature type; they have a base Toughness save value of +1, with a size bonus of +2 per size category above Medium, -1 per size category below Medium. An automaton's Toughness save can be further modified by improvements in armor.

Armor: Each automaton size has its own armor bonus to its Toughness; see the table above. The armor bonus can be strengthened or weakened with special features.

Speed: Each automaton size has its own base speed, for which see the table above. The speed is considered to be walking speed. Speed can be increased and movement modes added with special features.

Base Attack/Grapple: The base attack bonus of an automaton is equal to 3/4 its Construct creature levels (rounded down). The grapple bonus of an automaton is its base attack bonus + size modifier + Strength + any other modifier from a special feature.

Attacks: An automaton has a basic slam attack that causes damage depending on its size. It can be outfitted with a weapon or a special attack from a feature instead.

Damage: Each automaton size has its own base damage to its slam attacks; see the table above. Alternate attacks from weapons or features are defined by their own methods.

Space/Reach: The same as a creature of the same size.

Traits: The automaton has no inherent special attacks but some may be installed as special features. Construct traits apply to an automaton. Additionally, it can install more through special features.

Special Features: The automaton has Land Movement (legs) as a base special feature.

Saving Throws: All the saving throws of an automaton are normal (that is, equal to 1/3 its Construct creature levels, rounded down); they add the appropriate ability modifier, plus any other modifier from special features.

Abilities: Upon construction, an automaton has the following abilities: Str As per the table; Dex As per the table; Con —; Int —; Wis +0; Cha -5. All abilities can be modified with special features.

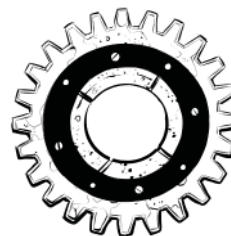
Skills: Automata with Full Sentience have 2 + Int skills at 4 ranks at 1st level, plus 2 + Int skill points per level after that (minimum 1).

Feats: Automata gain no feats but some can be installed as special features.

Power Source: Like all amazing machines, an automaton does not have a power source. One must be installed.

Malfunction Threshold: An automaton suffers a malfunction with a natural roll of 1 in the following tasks: attack rolls, skill checks and Fortitude saves. Malfunction also happens on a natural roll of 1 on using any special feature but the malfunction affects only the special feature and can be repaired separately.

Base Options: Additional Hard Slot, Horizontal Frame, Swerving Hips, Limited Sentience



EQUIPMENT

The size of a piece of equipment is relative to the size of its intended user, just like weapons. A Large, one-handed piece of equipment is equivalent to a Medium-size two-handed piece of equipment in size, although grips and buttons will have different placements for each respective size of user. Equipment cannot perform any task unattended; the limits of its automation give a bonus to a user to perform certain tasks.

EQUIPMENT BASE ATTRIBUTES				
Size	CP	HS	Toughness	Armor
Fine	8	1	+0	+0
Diminutive	11	2	+0	+0
Tiny	14	3	+0	+0
Small	17	4	+1	+0
Medium	20	4	+2	+0
Large	23	4	+3	+0
Huge	26	5	+5	+0
Gargantuan	29	6	+7	+1
Colossal	32	7	+9	+1
Awesome	35	8	+11	+1

Size: Chosen by the creator; see the table above.

Construction Points: Each equipment size has a different CP cost; see the table below. The total cost adds the CP from options and special features.

Hard Slots: Each equipment size has its own number of hard slots; see the table above.

Operation: If the equipment mimics or provides a bonus to a skill, use that skill; if it is a feat, there is no skill requirement.

Toughness: Each equipment size has a base Toughness save value; see the table above. This number can be increased with materials and special features. Equipment uses the Toughness save rules for objects (see True20 Adventure Roleplaying).

Armor: Some equipment sizes provide an armor bonus, which is added to the machine's Toughness; see the table above. Like normal armor, a piece of equipment's armor can be bypassed with a Finesse Attack. Armor can be strengthened or weakened with materials and special features.

Traits: Construct traits apply to equipment. More can also be installed through special features.

Special Features: The equipment has the One-Handed Use feature for free, which can be modified with base options.

Saving Throws: Equipment cannot make saving throws on its own. Any saving throw listed is a bonus it grants

to the saving throw of its user or operator when made to protect the machine.

Abilities: Equipment does not possess abilities. It can provide bonuses to a user's abilities, however.

Skills: Equipment generally does not have skills, but may be equipped with Full Sentience as described later on in the Special Features section.

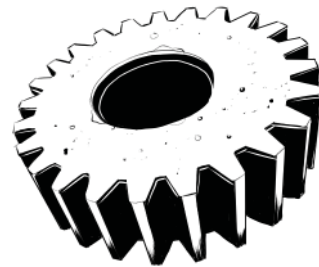
Feats: Equipment gains no feats but some can be installed as special features.

Power Source: Like all amazing machines, equipment does not have a power source; one must be installed. If a piece of equipment requires a power source and does not have the space for it, an external power source increases the handling size by one: from light to one-handed, from one-handed to two-handed and from two-handed to worn/carried.

Weight: Equipment's weight is calculated with its size and occupied HS at the end of the construction process.

Malfunction Threshold: Equipment suffers a malfunction with a natural roll of 1 in any rolls that it complements. Malfunction also happens on a natural roll of 1 on using any special feature but the malfunction affects only the special feature and can be repaired separately.

Base Options: Additional Hard Slot, Feat Assist, Light Use, One-Handed Use, Skill Assist, Two-Handed Use, Worn/Carried Use.



PERSONAL WEAPONS

Like equipment, the size of a weapon is relative to the size of its intended user. A personal weapon cannot attack on its own. The limits of its automation are in its internal systems, which may provide a number of effects. The base mode of attack of a personal weapon is melee. Modification is necessary to make it into a ranged weapon.

Size: Chosen by the creator. Construction Points: Each personal weapon size has a different CP cost. The total cost adds the CP from options and special features.

Hard Slots: Each personal weapon size has its own number of hard slots; see the table below.

Operation: All amazing personal weapons are exotic weapons, requiring that a potential user has the Exotic Weapons Training feat for that specific weapon. A persona weapon can be made into a martial or simple weapon as a special feature.

Toughness: Each personal weapon size has a base Toughness save value. This number can be increased with materials and special features.

Armor: Some personal weapons sizes provide an armor bonus, which is added to the machine's Toughness; see the table above. Like normal armor, a personal weapon's armor can be bypassed with a Finesse Attack. Armor can be strengthened or weakened with materials and special features.

Damage: A personal weapon has a base damage die based on its size, which can be increased or decreased by making it light or two-handed and further amplified by adding special features. All personal weapons have a critical threat range of 20 and deal an additional +3 damage on a confirmed critical. Both the threat range and the critical damage can be increased with special features.

Range Increment: A personal weapon has a base range increment based on its size; this range increment only applies if the weapon is ranged.

Special Traits: Construct traits apply to equipment. More can also be installed through special features.

Special Features: A personal weapon has the One-Handed Use feature for free, which can be modified with base options. It is also by default a melee weapon, although this can also be modified with base options.

Saving Throws: A personal weapon cannot make saving throws on its own. Any saving throw listed is a bonus it grants to the saving throw of its user or operator when made to protect the machine.

Abilities: A personal weapon does not possess abilities; it can provide bonuses to a user's abilities, however.

Skills: A personal weapon generally does not have skills, but may be equipped with Full Sentience as described later on in the Special Features section.

Feats: A personal weapon gains no feats but some can be installed as special features.

Power Source: Like all amazing machines, a personal weapon does not have a power source; one must be installed. If a personal weapon requires a power source and does not have the space to provide it, an external power source increases the handling size by one, from light to one-handed, from one-handed to two-handed and from two-handed to worn/carried. The weapon can keep its handling size by making the power source a wearable item but not a carried one.

Weight: A personal weapon's weight is calculated with its size and occupied HS at the end of the construction process.

Malfunction Threshold: A personal weapon suffers a malfunction with a natural roll of 1 in attack rolls. Malfunction also happens on a natural roll of 1 on using any special feature but the malfunction affects only the special feature and can be repaired separately.

Base Options: Additional Hard Slot, Light Use, One-Handed Use, Ranged Attack (any), Two-Handed Use, Worn/Carried Use, Increased Range.

PERSONAL WEAPON BASE ATTRIBUTES						
Size	CP	HS	Toughness	Armor	Range Increment	Damage
Fine	10	1	+0	+0	5 ft.	-1
Diminutive	13	2	+0	+0	5 ft.	+0
Tiny	16	3	+1	+0	10 ft.	+1
Small	19	4	+2	+0	10 ft.	+2
Medium	22	4	+3	+0	20 ft.	+3
Large	25	4	+5	+1	40 ft.	+4
Huge	28	5	+8	+1	80 ft.	+6
Gargantuan	31	6	+11	+1	80 ft.	+8
Colossal	34	7	+14	+2	130 ft.	+10
Awesome	37	8	+17	+2	180 ft.	+12

STRUCTURES

A structure's shape is completely up to the creator; the dimensions column only indicates an imaginary box containing the structure.

STRUCTURE BASE ATTRIBUTES					
Size	CP	HS	Toughness	Armor	Cubic Dimensions
Tiny	40	6	+1	+0	3,375 ft. ³ (1.5 ft. x 1.5 ft. x 1.5 ft.)
Small	45	8	+2	+0	27 ft. ³ (3 ft. x 3 ft. x 3 ft.)
Medium	50	10	+5	+1	125 ft. ³ (5 ft. x 5 ft. x 5 ft.)
Large	55	12	+8	+1	1,000 ft. ³ (10 ft. x 10 ft. x 10 ft.)
Huge	60	14	+11	+2	8,000 ft. ³ (20 ft. x 20 ft. x 20 ft.)
Gargantuan	65	16	+14	+2	64,000 ft. ³ (40 ft. x 40 ft. x 40 ft.)
Colossal	70	20	+17	+2	216,000,000 ft. ³ (60 ft. x 60 ft. x 60 ft.)
Awesome*	75	24	+20	+2	512,000,000 ft. ³ (80 ft. x 80 ft. x 80 ft. or more)

*Larger structures can be made by “stacking” two or more awesome structures. Each structure must be built separately, and has its own CP, HS, Toughness, Armor, and other features.

Size: Chosen by the creator. Structures have a minimum size of Tiny.

Construction Points: Each size category has a different CP cost. The total cost adds the CP from options and special features.

Hard Slots: Each size category has its own number of hard slots.

Operation: If the structure mimics or provides a bonus to a skill, use that skill. If it is a feat, there is no skill requirement.

Toughness: Each structure size has a base Toughness save value; see the table on pg. 235.

Defense: As a normal creature, it is 10 + size modifier + Dexterity + any other modifier from a special feature.

Armor: Some structure sizes provide an armor bonus, which is added to the machine's Toughness; see the table above. Like normal armor, a structure's armor can be bypassed with a Finesse Attack. Armor can be strengthened or weakened with materials and special features.

Dimensions: A structure occupies a space limited by an imaginary box with a cubic footage based on its size. A creator can move around units from one dimension (width, length and height) to another. The structure doesn't need to fill the entire volume given for its size, nor can it exceed it or be less than the volume of the next smallest size. For the purposes of stories in a structure, assume that each story is approximately 10 ft. in height. Thus an Awesome structure is equivalent in height to an 8-story building.

Special Features: The structure has no base special feature.

Saving Throws: A structure cannot make saving throws on its own. Any saving throw listed is a bonus it grants to the saving throw of its users or occupants.

Abilities: A structure does not have any abilities but it can be granted a limited amount of Intelligence for purposes of automated tasks.

Skills: Structures generally does not have skills, but may be equipped with Full Sentience as described later on in the Special Features section.

Feats: A structure gains no feats but some can be installed as special features.

Power Source: A structure has a base wind/water power source, which means that it must be placed near a river or on a hill. You can change the power source by paying the cost of the new one.

Crew: Structures need and accommodate one operator for every 30 full CP.

Passengers: In the case of structures, these are occupants. Structures can accommodate 1 occupant of two size categories smaller than the structure per unoccupied hard slot. The amount of room taken up by occupants smaller than this is halved for each size category smaller yet that they are. They require two hard slots per occupant of one size category smaller and double for each size category larger. A structure cannot accommodate occupants of the same size category or larger than itself.

Malfunction Threshold: A structure suffers a malfunction with a natural roll of 1 in any rolls that it complements. Malfunction also happens on a natural roll of 1 on using any special feature but the malfunction affects only the special feature and can be repaired separately.

Base Options: Additional Hard Slot, Feat Assist, Skill Assist, Supernatural Effect.

VEHICLES

Vehicles are defined as large tools used for transport, controlled by an operator who rides on the vehicle as he controls it most of the time. If it moves and someone other than the machine is responsible, then it is a vehicle, although some vehicles have a very advanced autopilot system with an analytical engine of limited intelligence. The appearance of the vehicle is completely up to its creator, constrained only by the limits of its size category.

Maneuverability: Each vehicle size has its own maneuverability score and mode. Both the score and the mode can be increased or decreased with special features.

Speed: Each vehicle size has its own base speed. The speed is considered to be maximum land speed; speed can be increased and movement modes added with special features.

Acc/Dec: Each vehicle size has its own acceleration and deceleration rates. These values are considered a moderate acceleration or deceleration. The value can be

VEHICLE BASE ATTRIBUTES									
Size	CP	HS	Toughness	Armor	Maneuverability*	Speed	Turn Rate	Acc/Dec	Cargo
Fine	25	2	+1	+0	Perfect (+6)	20 ft.	0 ft.	10/20	N/A
Diminutive	30	2	+2	+0	Perfect (+4)	30 ft.	5 ft.	10/20	N/A
Tiny	35	2	+3	+0	Good (+2)	40 ft.	5 ft.	15/25	1 lb.
Small	40	4	+4	+0	Good (+1)	60 ft.	10 ft.	20/40	2 lb.
Medium	45	6	+5	+0	Average (+0)	80 ft.	10 ft.	30/50	4 lb.
Large	50	10	+7	+1	Average (−1)	100 ft.	20 ft.	40/60	8 lb.
Huge	55	14	+9	+1	Poor (−2)	120 ft.	30 ft.	50/70	32 lb.
Gargantuan	60	20	+11	+2	Poor (−4)	100 ft.	40 ft.	40/60	256 lb.
Colossal	65	26	+13	+2	Clumsy (−6)	80 ft.	60 ft.	30/50	1 ton
Awesome	70	34	+15	+2	Clumsy (−8)	60 ft.	120 ft.	20/40	2 tons

*The maneuverability score is the value in parentheses.

Size: Chosen by the creator. Construction Points: Each vehicle size has a different CP cost. The total cost adds the CP from options and special features.

Hard Slots: Each vehicle size has its own number of hard slots.

Operation: Drive skill for land- and water-based (surface) movement, Pilot for air-, aether-, underwater and underground based movement. These skill checks utilize the vehicle's maneuverability modifier.

Toughness: Each vehicle size has a base Toughness save value. Toughness saves for vehicles begin a +5 for Medium, and receive a size bonus of +2 per size category above Medium and −1 per size category below Medium.

Defense: As a normal creature, it is 10 + size modifier + maneuverability modifier + any other modifier from a special feature.

Armor: Some vehicle sizes provide an armor bonus, which is added to the machine's Toughness; see the table above. Like normal armor, a vehicle's armor can be bypassed with a Finesse Attack. Armor can be strengthened or weakened with materials and special features.

Initiative: A vehicle acts on its operator's initiative slot but applies its maneuverability modifier to the operator's roll.

increased or decreased with special features.

Turn Rate: Each vehicle size has its own turn rate.

Weapons: Vehicles have no base weapons mounted. Any weapon must be built separately and installed on special weapon mountings, which are a special feature. The choice of weapon will define the damage and any special characteristics.

Space/Reach: The same as a creature of the same size.

Traits: The vehicle has no inherent special traits but some may be installed as special features. Construct traits apply to a vehicle. It can install more through special features.

Special Features: The vehicle has Land Movement as a base feature. The creator chooses which mode of land movement the vehicle will have at no CP cost but uses the vehicle size's base speed.

Saving Throws: A vehicle cannot make saving throws on its own. Any saving throw listed is a bonus it grants to the saving throw of its user or operator when made to protect the machine.

Skills: A personal weapon generally does not have skills, but may be equipped with Full Sentience as described later on in the Special Features section.

Power Source: Like all amazing machines, a vehicle does not have a power source; one must be installed.

Crew: A vehicle has a base crew of one, which must be expanded with special features if any more crew members are needed to operate weapons or other special features. The vehicle must be large enough to accommodate its intended crew.

Passengers: Vehicles can accommodate 1 additional occupant of two size categories smaller than the vehicle per unoccupied hard slot. The amount of room taken up by occupants smaller than this is halved for each size category smaller yet that they are. Vehicles require two hard slots per occupant of one size category smaller and double this for each size category larger. A structure cannot accommodate occupants of the same size category or larger than itself. It could, but it would not move.

Cargo: Any hard slot not defined as passenger areas can hold a maximum cargo weight as defined on the table, depending on the vehicle's size.

Malfunction Threshold: A vehicle suffers a malfunction with a natural roll of 1 in the operator's Drive or Pilot checks. Malfunction also happens on a natural roll of 1 on using any special feature but the malfunction affects only the special feature and can be repaired separately.

Base Options: Additional Hard Slot.

VEHICLE AND ARTILLERY WEAPONS

Vehicle and artillery weapons are just like their personal versions, but bigger... much bigger. They cannot move independently but they can come equipped with wheels so they can be towed by another vehicle. In practice, they see more use by being mounted on one. Although they are not wielded by hand, vehicle and artillery weapons are considered two-handed weapons for vehicles and structures of the same size to which they are mounted.

Any other machine can mount one vehicle and artillery weapon of its same size, two of one size smaller, four weapons two sizes smaller, eight weapons of three sizes smaller, or any combination totaling the maximum capacity. No machine can mount weapons larger than itself.

Size: Chosen by the creator; see the table below. Vehicle and artillery weapons have a minimum size of Small.

Construction Points: Each vehicle weapon size has a different CP cost. The total cost adds the CP from options and special features.

Hard Slots: Each vehicle weapon size has its own number of hard slots.

Operation: Having ranks in Knowledge (tactics), ranks in Knowledge (technology), a base attack bonus of at least +6 or the Use Amazing Device feat is sufficient for a gunner to operate a vehicle and artillery weapon.

Speed: Vehicle and artillery weapons cannot move by themselves. They must be mounted on or hauled by a vehicle or an automaton to have some amount of mobility.

Toughness: Each vehicle weapon size has a base Toughness save value.

Armor: Some vehicle and artillery weapon sizes provide an armor bonus, which is added to the machine's Toughness; see the table above. Like normal armor, a vehicle or artillery weapon's armor can be bypassed with a Finesse Attack. Armor can be strengthened or weakened with materials and special features.

Damage: A vehicle weapon has a base damage based on its size. All vehicle weapons have a critical threat range of 20 and deal an additional +3 damage on a confirmed critical. Both the threat range and the critical damage can be increased with special features.

Range Increment: A vehicle weapon has a base range increment based on its size; this range increment only applies if the weapon is ranged.

Traits: These machines have construct traits and more can be installed through special features.

Special Features: A vehicle weapon has the Ranged Attack feature for free (the creator chooses the kind of ranged attack) which can be modified with base options. It is also by default a melee weapon, although this can also be modified with base options.

Saving Throws: A vehicle weapon cannot make saving throws on its own. Any saving throw listed is a bonus it grants to its user's or operator's own saving throw when made to protect the machine.

Abilities: A vehicle weapon does not possess abilities. It can, however, provide bonuses to a user's abilities.

Skills: A vehicle weapon generally does not have skills, but may be equipped with Full Sentience as described later on in the Special Features section.

Feats: A vehicle weapon gains no feats but some can be installed as special features.

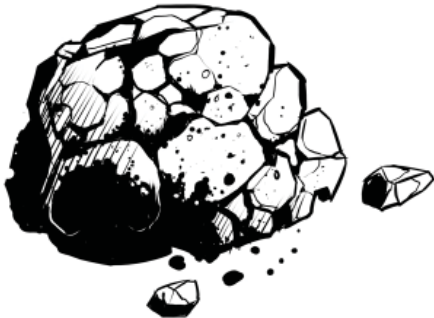
VEHICLE AND ARTILLERY WEAPON BASE ATTRIBUTES						
Size	CP	HS	Toughness	Armor	Range Increment	Damage
Small	27	6	+2	+0	50 ft.	+3
Medium	30	6	+4	+0	70 ft.	+6
Large	33	6	+4	+1	100 ft.	+9
Huge	36	7	+6	+1	140 ft.	+12
Gargantuan	39	8	+8	+2	190 ft.	+15
Colossal	42	9	+10	+2	250 ft.	+18
Awesome	45	10	+11	+2	300 ft.	+21

Power Source: Like all amazing machines, a vehicle weapon does not have a power source; one must be installed.

Crew: A vehicle weapon has a base crew of one, plus one extra crewmember for every 20 full CP in the final cost.

Malfunction Threshold: A vehicle weapon suffers a malfunction with a natural roll of 1 on attack rolls. Malfunction also happens on a natural roll of 1 on using any special feature but the malfunction affects only the special feature and can be repaired separately.

Base Options: Additional Hard Slot, Increased Range.



MATERIALS

An important decision to make when planning an amazing machine is what it is going to be made of. Matters of cost and weight are disadvantages to be considered but are balanced by the advantages of resistance and efficiency. Cheap materials make for relatively inexpensive and easy construction but they break down easily and need a lot of maintenance to keep running. Expensive materials can take quite a beating and are very reliable but they are exactly that; expensive.

This material makes up the majority of the machine's body, which means that it can have parts made of other materials that do not count towards the final cost. Materials do not have a CP cost. Instead, they multiply the cost of the base frame's CP after base options have been installed but before special features. Each kind of material also adds a bonus to the machine's armor.

Some materials are harder to work with than others and each has a modifier to the Difficulty of all Craft checks made for the machine.

Inert Organics: Inert organics are once-living tissue, or material that was once part of a living being. The most normal inert organic materials are wood, leather and hemp rope but some more sinister inventors have been known to make machines out of bones and dead flesh, particularly when building something for a necromancer.

Live Organics: It is tremendously expensive to build a living machine, be it from live wood or more chillingly, a living organism. If this were not enough, the machine must be kept 'fed' in order to function. For all their enormous costs, live organics do provide many benefits. Unlike other machines, one made from live organics heals at the normal rate specified for characters, and may be healed with the Medicine skill rather than Craft, although death effects do influence it and it is susceptible to critical hits. The power source of a live organic machine is also organic, depending on the material itself. A living wood machine needs a steady source of water and sunlight and will probably take root, although its nutrients can be provided for at the same costs and renewal rates as steam power with fuel renewal, with the exception that the fuel is, basically, food.

Soft Minerals: There are very few machines made from soft minerals, basically clay and mud, baked and hardened but still somewhat brittle.

Hard Minerals: Structures are more likely to be made from hard minerals, namely rock, stone, crystal and its derivatives, than any other kind of machine.

Exotic Minerals: There are two kinds of exotic minerals that inventors have played with successfully: levistone and arcrcrystal. No machine can be made entirely from these minerals, so another base material must be chosen first. The mineral is then added to choice locations, adding the indicated number to the base material's multiplier.

Levistone: Legends speak of a strange bluish stone that has the natural ability to float when subjected to some form of energy, becoming the ideal material for airships. Machines outfitted with levistone increase their aerial speed by 20 ft., their maneuverability score by +2 and their maneuverability mode by one step.



Arcrcrystal: A variety of quartz that resonates strongly with telluric energy, arcrcrystal fittings increase the reliability of telluric power sources, imposing a -2 modifier to the d20 rolls to check for malfunction effects; see Malfunctions, above. Also, if the machine has telluric circuitry to channel a supernatural effect, the power check Difficulty to create it is reduced by -4. See the Supernatural Effect special feature.

MATERIAL CHARACTERISTICS				
Material	CPx	Armor	Craft Difficulty	Special
Inert Organics	x1	+2	+0	—
Live Organics	x2	+0	+8*	Machine heals, its fuel is organic.
Soft Minerals	x1.1	+2	+0	—
Hard Minerals	x1.3	+3	+5	—
Exotic Minerals	+0.4	—	+2	Lightness or telluric conduction.
Soft Metals	x1.2	+3	+3	—
Hard Metals	x1.4	+4	+5	—
Exotic Metals	x1.8	+6	+8	Toughness, etheric body or telluric conduction.

* Medicine check instead of Craft.

Soft Metals: Soft metals include gold, lead, silver, bronze and brass, which are easy to work with but not as resilient as many inventors would like. Brass and bronze are preferred, as gold and silver are simply too expensive; the CP multiplier is x1.5 instead of x1.2.

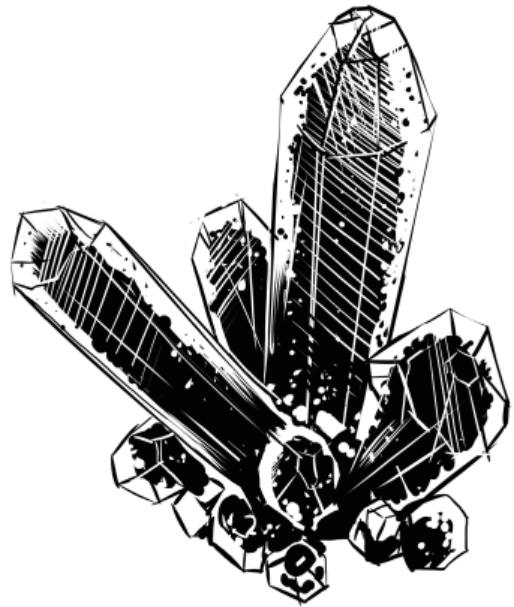
Hard Metals: Since industrial production turned its head towards iron and steel, these hard metals are more available for technological pursuits.

Exotic Metals: Although iron and steel suffice for most technological needs, exotic metals such as stellar iron, etheric iron and arcanium provide inventors with plenty of additional properties to combine with their theories.

Stellar Iron: Extracted from meteorites falling to the surface or actually mined at source from worlds beyond the aether, stellar iron is an incredibly hard metal, stronger than steel and just as light. Efforts to smelt stellar iron or alloy it with other minerals have failed, so it can only be used in its pure form. Machines made from stellar iron have a +2 bonus to Toughness.

Etheric Iron: A strange metal that alloys iron with ectoplasm before it dissolves. All effects of machines made from etheric iron affect incorporeal creatures normally, as the machine actually has an etheric body that functions simultaneously with its material one. The entire machine effectively has the Ghost Touch power. Incorporeal creatures can thus use and be harmed by an item made from etheric iron normally. Vehicles and automata made from etheric iron increase their maneuverability mode by one and their maneuverability score by +4 in the aether of outer space (or Dexterity by +2, for vehicles that have Dex instead of maneuverability). If the Narrator is using planes of existence in his campaign, this benefit is also applied to the vehicle if it physically travels to the Ethereal Plane.

Arcanium: The fabrication of this metal is an alchemical secret that was recently cracked by a scientist with an occult interest. It is now part of many inventors' work, although it remains incredibly hard to make. Arcanium is a supreme magic conductor, even better than arcrystal, and it is the standard material for telluric circuitry. If a machine's main material is actually arcanium, a malfunction result has a –10 modifier for malfunction effects.



POWER SOURCES

Most amazing machines do not operate by themselves; they need fuel to power their abilities. Automata, vehicles and machines equipped with features that require charges all must have some sort of power source.

For the purposes of the construction system, power sources include generators, storage and conduction, using the most efficient combinations of each in a neat package.

Instead of describing the power source by the type of technology, the rules divide them by function: output, which is the amount of energy provided, and renewal, which is how often and by what means a power source must be refueled to keep working.

All power sources take up hard slots inside the machine, some more than others, as they require additional cargo space for their fuel, like steam engines and their coal.

Work Power: This creates energy by movement actively generated by something or someone called an 'operator'. This does not necessarily require qualification. In practice, an 'operator' could be a horse. Mechanical power sources range from rowing and pedaling to manual-operation cranks and even the simple act of pushing and pulling. In order to work, the machine needs constant operation of its power source and a crew of operators to do so.

Wind/Water Power: This method uses the power of natural elements in order to create energy instead of manual operation but uses almost all the same parts as mechanical power sources. Sails and fans like those of a windmill harness the power of wind; the power of water is converted to motion by waterwheels in static machines, and so on. Static structures have no renewal rates and always operate at maximum capacity.

Clockwork Power: This method stores kinetic energy in tightly wound springs and transmits it by gears, belts and chains. A clockwork engine is always made of metal, as the precision and strength necessary for its operation exceeds the capacity of softer materials. Clockwork springs eventually unwind. The user must twist them for them to be wound again.

Steam Power: Steam power uses the pressure of water vapor to exert force and thus create movement. This power source must have a boiler where fuel burns in order to heat the water and also needs water reservoirs for that purpose; both of these elements are included in the engine's HS allotment.

Electrical Power: Electrical power is stored in batteries and converted into force by the electrical engine. Electricity is the most space-efficient of power sources but is likewise very expensive. Batteries are not rechargeable 'in the field' but require a special machine to either create a new battery or recharge the old one, which is why machines running on electricity keep a reserve battery, just in case.

Telluric Power: This mysterious force vibrates in

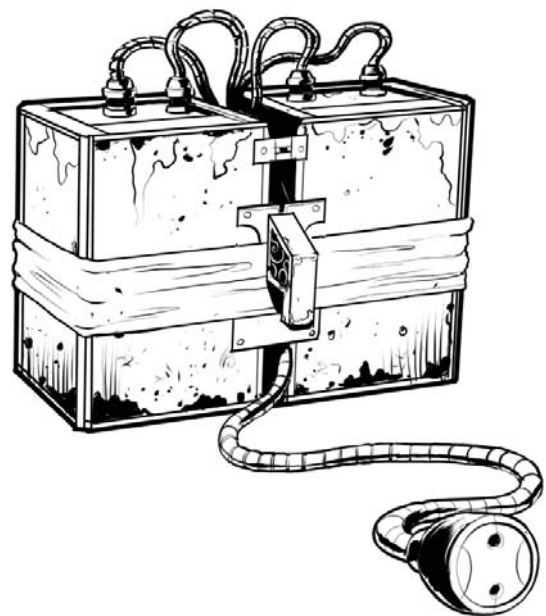
crystals and resonates according to the geometric shapes of its conduits, rather than the materials they are made of. Telluric power is akin to magic and it is the only way to include supernatural effects as part of a machine's performance, for no other power source operates on the subtle levels that magic requires.

Other: There are, of course, other ways to generate force but they are mostly equivalent to those outlined above. Technology that relies on combustion of fuel can be grouped with steam power, while those that rely on the entrapment of elemental beings are equivalent to (and actually require) telluric engines and conduits.

ACQUIRING THE POWER SOURCE

An inventor builds or purchases a power source separately from the machine and installs it later. A construction team usually works on the machine and its engine at the same time, following the blueprints. The actual size of the power source affects both the purchase and the Craft Difficulties, as large engines are difficult and expensive for the weights and amounts of material, while miniature ones add the intricacy and handiwork they require. Like weapons, a power source's size does not indicate its actual dimensions but what kind of machine it is designed to move. Therefore, the actual size category of an engine (independent from its functional size category) is about one or two sizes smaller than the machine for which it is meant. The size modifier is applied to the Purchase and Craft Difficulties of each power source but leaves the HS unchanged.

To make a power source, use the Craft skill for the technology type indicated in the table. Telluric power uses the Knowledge (supernatural) skill, with the results read if it were the Craft skill. The Difficulty for purchasing or making the power source is equal to the value on the table plus the power source's size modifier, not the machine's!



POWER SOURCES				
Power Source	HS	Purchase Difficulty	Craft (Build) Difficulty	Craft (Repair) Difficulty
Work Power	3	20	Mechanical, 10	Mechanical, 10
Wind/Water Power	4	21	Mechanical, 15	Mechanical, 10
Clockwork Power	2	24	Mechanical, 20	Mechanical, 15
Steam Power	3	23	Mechanical, 20	Mechanical, 13
Electrical Power	1	26	Mechanical, 15 and Chemical, 20	Mechanical and Chemical, 15
Telluric Power	0	28	Mechanical, 15 and Knowledge (supernatural), 20	Knowledge (supernatural), 15

POWER SOURCE SIZE MODIFIER	
Size	Modifier
Fine*	+8
Diminutive*	+6
Tiny*	+4
Small	+2
Medium	+1
Large	+0
Huge	+1
Gargantuan	+2
Colossal	+4
Awesome	+6



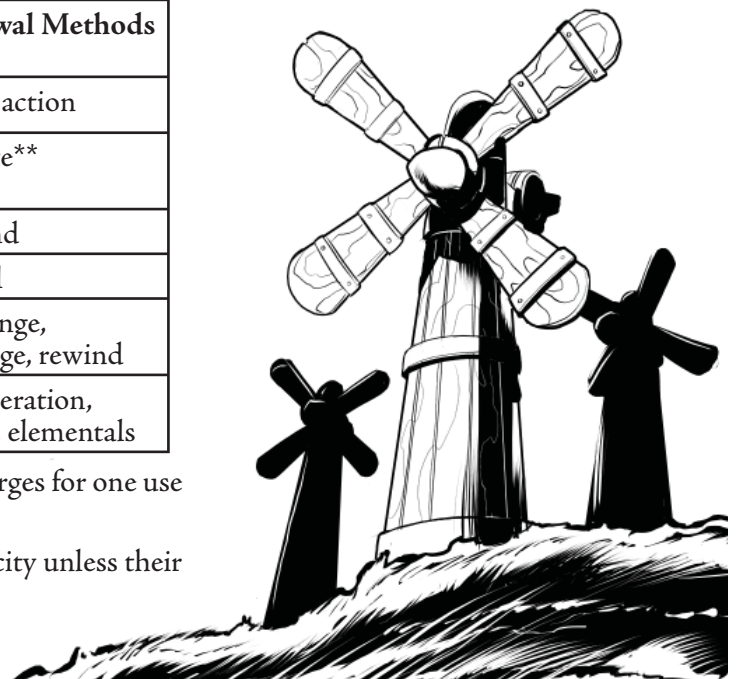
POWER SOURCE RENEWAL		
Method	Action	Renewal Rate
Work Action	1 move	2
Rewind	1 full round	5
Refuel	1 move (skill check)	5
Exchange	1 full round	All
Recharge	1 minute	1 per check result
Supernatural	Duration	1 charge per 4 adept levels
Elementals	8 hours	Elemental's levels
Regeneration	1 minute	1

*It is impossible to make the following power sources of this size: work, steam, electrical.

POWER SOURCE CHARACTERISTICS			
Power Source	Maximum Capacity	Delivery Rate	Renewal Methods
Work Power	*	1 use	Work action
Wind/Water Power	30 charges	10 charges	Infinite**
Clockwork Power	45 charges	5 charges	Rewind
Steam Power	60 charges	10 charges	Refuel
Electrical Power	60 charges	5 charges	Exchange, recharge, rewind
Telluric Power	75 charges	10 charges	Regeneration, magic, elementals

*Work power cannot store energy and deliver sufficient charges for one use of a function.

**Wind/water power sources are always at maximum capacity unless their motor forces are blocked.



OUTPUT

Once the power source is installed, the inventor connects everything together so the power source can feed the different functions of the machine. See Using an Amazing Machine, below. Each type of engine has a maximum capacity, which is the number of charges it can hold before it empties, and a delivery rate, which is the maximum number of charges that the engine can deliver in one round. Work power sources cannot store energy, but must constantly work towards providing charges.

RENEWAL METHODS

Once an engine is spent, its charges must be renewed; each power source can accommodate one of a few renewal methods.

Work Action: The operator pulls on a lever, pushes a wheel, cocks a trigger, pulls a rope and so on. There is no skill check required to perform a work action renewal but the work itself takes one move action to provide 2 charges.

If this is insufficient to power a function, then the work action must be repeated, adding up the charges until they meet the requisite amount and the operator triggers the function, spending all the charges 'stored' temporarily.

Rewind: The operator twists a crank, pushes a spring, turns a dial or takes other such actions that restore a clockwork's springs to their latent positions. It takes a full-round action to restore 5 charges to a clockwork power source, with no skill check required. Unfamiliar machines may require a Knowledge (technology) check at Difficulty 15 to find the rewinding mechanism.

Refuel: The operator pours more fuel into the power source's tanks, which are constantly feeding the engine. Steam engines allow the operator to pour in more fuel in the middle of operation before they run out of energy, although some other equivalent engines may not be so generous. Fuel reserves can hold up to three times an engine's maximum capacity. It takes a move action to restore 5 charges to a steam power source, but it requires a Knowledge (technology) check, Craft (mechanical) check or Knowledge (technology) check per round at Difficulty 10 to know how much fuel to add, or which kind.

Exchange: Once a battery runs out, it needs to be changed for a fresh one. It really is as simple as that. It takes one person to change the battery of a Medium or smaller machine and smaller but it takes two to change the battery of a Large machine, three for Huge one, four for a Gargantuan machine and so on. It takes a full round to exchange a battery, which usually restores the power source to full capacity and requires a Knowledge (technology) check, Craft (mechanical) check or Knowledge (technology) check at Difficulty 10. Spent batteries are useless but rechargeable ones exist, for which see below.

Recharge: Electrical batteries that can be recharged add +1 to the Purchase Difficulty. Their chemicals can be reactivated either by hand with a Craft (chemical) check or with another machine whose purpose is to recharge batteries. In essence, this is a machine that can perform the Craft (chemical) check on its own. The battery recovers a number of charges equal to the check result, which takes 1 minute.

Supernatural: Adepts with a taste for technology have devised a number of rituals to keep their machines running. An adept who succeeds on a Difficulty 15 level check can restore power to a machine at a rate of 1 charge per 4 adept levels. This is a full-round action. The adept must touch the machine for this to work, and must be trained in Craft (mechanical) and Knowledge (supernatural). This ability is fatiguing, rolled at the same Difficulty as the adept's standard fatigue save.

Elementals: When an elemental creature is bound to a machine in order to power it, the machine will basically run forever. An elemental can provide a number of charges equal to twice its level x its Constitution (minimum 1), + 10. If an elemental is reduced to 0 charges it dissipates and returns to its home plane, so inventors install safeguards that stop the machine when the elemental is at 1 charge. An elemental recovers charges after 8 hours of rest, during which the machine must remain inactive.

Regeneration: Only telluric engines are capable of regenerating on their own, picking up ambient energy at a rate of 1 charge per minute.

SPECIAL FEATURES

Special features have their own format for their descriptions; note that they are very similar to feats that characters can take.

Name (type): This is the option or feature's most common name, although different inventors may have different names according to their pet theories and field of expertise. A voltaic inductor is the same as an electrical projector, for example. Next to the name, a parenthesis indicates to which type of machine the feature applies.

Requirements: An option or special feature may require that the machine provide either a particular attribute at a certain value or another special quality to be present before it can be installed. If this field is missing, the special quality has no requirements.

Skills: The option lists a number of modifiers to the Difficulties that it imposes on the final Knowledge and Craft checks. If the Knowledge check is described as a Difficulty rather than as a modifier, it means that installing the option needs its own separate Knowledge check in addition to those required to build the machine. If the Craft check is described as a Difficulty rather than as a modifier, it means that the special feature is a separate machine by itself and must be constructed separately before installing it on the machine. It also means that it

can be salvaged from another machine of the same size, or bought from another creator. If this field is missing, the special feature has no effect on the Knowledge and Craft checks.

Description: This is a description of the special quality's effects.

Costs: This field includes the Construction Point costs for installing the special quality; the charges it consumes, if any; the Hard Slots it occupies. A cost expressed in negative values (a minus '-' sign) not only costs nothing but actually returns some of the expense to the creator; a negative CP value subtracts from the total CP cost of the machine, while a negative HS value actually adds hard slots to the machine instead of occupying them. If a Special Feature or Deficiency can be taken multiple times, you must pay the CP and HS cost each time you it. The Knowledge and Craft skill modifiers do not stack unless specifically stated in the feature's description.

ACCESSORIES (ANY)

The machine has additional features, which provide useful but mundane non-combat-related advantages. Accessories are minor features such as an: airlock, burglar alarm, emergency lights and fog horn, loudspeaker, headlights, luxurious decor, code flags, internal pipe communication system, tow cable, or wet bar. A machine need not acquire accessories that are implied by its other capabilities; a machine with sailing water travel can be assumed to have appropriate rigging. It also need not acquire accessories that are ubiquitous, like a handle in a firearm.

Costs: 1 CP per 3 accessories. The Narrator determines whether an accessory consumes 1-3 charges upon operation but most are taken care of by the machine's ordinary fuel consumption.

SPECIAL FEATURES	
Type	Special Features
Any	Accessories, Additional Hard Slot, Armor Plating, Energy Conservation, Energy Weapon, Extra Charge, Feat, Increased Range, Power Converter, Basic Remote Control, Advanced Remote Control, Self-Destruct, Speech, Sturdy, Limited Sentience, Full Sentience, Skill Assist, Skill Use, Summonable, Supernatural Effect, Tesla Field, Voice Recognition
Automata	Ability Increase, Accuracy, Aerial Movement, Booster, Burrowing Movement, Chameleon Field, Combat Programming, Defensive Maneuvers, Electrokinetic Field, Extra Arm, Extra Head, Fast, Firing Ports, Greater Damage, Hangar, Horizontal Frame, Jumping, Miscellaneous Limb, Natural Weaponry, Ranged Attack, Reaching, Swerving Hips, Underwater Movement, Voltaic Claws, Wall-Crawling, Water Movement, Weapon Mounting, Concealed Weapon Mounting
Equipment	Ergonomic, Light Use, One-Handed Use, Skill Assist, Two-Handed Use User-Friendly, Worn/Carried Use
Personal Weapons	Damaging, Ergonomic, Greater Damage, Harmful, Light Use, One-Handed Use, Reaching, Two-Handed Use, Worn/Carried Use, Ranged Attack, User-Friendly
Structures	Chameleon Field, Concealed Weapon Mounting, Electrokinetic Field, Extra Arm, Firing Ports, Hangar, Rooms, Sealed Environment, User-Friendly, Weapon Mounting
Vehicles	Aerial Movement, Aetheric Movement, Agile, Booster, Burrowing Movement, Chameleon Field, Concealed Weapon Mounting, Ejection Seat, Electrokinetic Field, Extra Arm, Extra Leg, Fast, Firing Ports, Hangar, Jumping, Maneuverable, Rooms, Sealed Environment, User-Friendly, Underwater Movement, Wall-Crawling, Water Movement, Weapon Mounting
Vehicle and Artillery Weapons	Accuracy, Damaging, Greater Damage, Harmful, Reaching, User-Friendly

ABILITY INCREASE (AUTOMATA)

Requirements: Ability of -5 or more.

The automaton's mechanism is above average. By installing this feature, a machine gains a +1 increase to any applicable ability, barring restrictions. This feature can be chosen more than once; its effects stack for each ability.

Skills: Knowledge (technology) +1; Craft (structural for Str, mechanical for Dex, expression for Int, Wis and Cha) +1 per two point increase

Costs: 3 CP.

ACCURACY (AUTOMATA, PERSONAL WEAPONS, VEHICLE AND ARTILLERY WEAPONS)

The machine's attacks benefit from its precise instruments. The machine gains a +1 bonus to attack rolls.

Costs: 3 CP.

ADDITIONAL HARD SLOT (ANY)

The automaton was built to have a greater capacity for special features and options. The machine adds one additional hard slot to its total; the CP cost for an additional hard slot varies depending on the machine's size. Each additional hard slot imposes a -1 penalty to maneuverability and attack rolls.

ADDITIONAL HARD SLOTS	
Size	CP Cost
Fine	1
Diminutive	1
Tiny	1
Small	2
Medium	2
Large	2
Huge	3
Gargantuan	3
Colossal	3
Awesome	4

AERIAL MOVEMENT (AUTOMATA, VEHICLE)

The machine has a method for flying across the sky. The machine gains a mode of flying, with the same speed as its base speed and a maneuverability corresponding to its size. Automata gain the maneuverability mode of a vehicle of the same size. Upon installing this feature, select one of the following methods of flight:

Glider: The machine moves by the strength of the wind. Its maneuverability is one mode worse, although its score remains the same. A glider requires no fuel or power source, but it requires a successful Pilot check (Difficulty 15) to take off. Take-off and landing require a landing strip of at least 100 feet. Gliding flight costs 5 CP and takes up 1 HS.

Propeller: The machine moves by the action of a propeller placed in the front or back and has fixed wings. This is the standard method of flight and uses all the base characteristics of the machine. It also requires a landing strip. Propelled flight costs 6 CP and takes up 1 HS.

Airship: This method involves hanging the machine from a balloon filled with gas or hot air. The inventor may choose which option to use. The machine derives its Toughness, maneuverability and turn rate from its size but its dimensions, size modifier to Defense and speed correspond to those of a machine one size category larger, to account for the gas bag. An airship can take off and land vertically, without the need for a landing strip. Airship flight costs 6 CP and takes up 2 HS.

Gyrocopter: The machine has wings that rotate by the action of its movement. It has the same characteristics as propeller-based flight but it requires a landing strip of only 50 feet in length. Gyrocopter flight costs 7 CP and takes up 1 HS.

Ornithopter: The machine's wings beat and move to simulate the movements of a bird in order to achieve flight and maneuverability. Ornithopters cannot be Gargantuan, Colossal or of Awesome size. An ornithopter gains a +1 to its Defense because of its wild movements during flight but imposes a -1 penalty to Concentration checks by characters on board. An ornithopter only requires 20 feet of running start to fly, not necessarily on a landing strip. Ornithopter flight costs 8 CP and takes up 2 HS.

Skills: Knowledge (physical sciences) +2; Craft (structural or mechanical) +3.

Costs: Varies; 3 charges per hour.

AETHERIC MOVEMENT (VEHICLE)

Requirements: Sealed Environment (life support), a telluric power source in the case of planar travel, or any other power source in the case of space travel.

The machine can travel to other dimensions or to outer space. The machine gains a mode of travelling through the aether. Upon installing this feature, select one of the following methods of propulsion:

Planes of Existence: The machine can travel to the Etheric and Astral Planes, vibrating itself and all its occupants there and back. It may be able to find gates to other worlds and cross them but this is still the subject of much speculation and exploration. It requires 10 charges to vibrate from one plane to the other but once there, its movement is the same as its base speed. If stranded, travelers must find their own way back home. Planar travel costs 10 CP and takes up 1 HS.

Space: The machine can abandon the planet to traverse the aether between worlds. It takes 8 charges per round to blast off the planet for 5 continuous rounds and 4 charges to land for another 5 continuous rounds, in addition to which a Pilot check is needed at Difficulty 15. Once in space, its movement is the same as its base speed. Space travel costs 6 CP and takes up 3 HS.

Time: This method of travel is open for experimentation and research. The Narrator assigns CP, charges and HS costs as he deems appropriate for his setting. He may also design the rules of time travel.

Skills: Knowledge (supernatural) +5 (planar travel), Knowledge (physical sciences) +5 (space travel); Craft (mechanical) +5.

Costs: Varies; 3 charges per hour.

AGILE (VEHICLE)

Requirements: A maneuverability score.

The machine is designed so that either its operator or itself may react better to changes of movement. The machine's maneuverability score increases by +2 and its acceleration and deceleration rates increase by 20%. This special feature can be chosen multiple times, each time it adds an extra +2 bonus and 20% increase to the original rates. It costs the same amount of CP but the skill checks remain the same. If an automaton has a movement mode that gives it a maneuverability score, it can install this feature as well.

Skills: Knowledge (physical sciences) +2; Craft (structural) +2.

Costs: 2 CP.

Boosters provide an increase in speed for 1 hour per day, although the duration need not be consecutive. Boosters increase a machine's speed by 20%. This feature can be chosen up to five times. Each time it is chosen, boosted speed increases by another 20% of the original speed.

Skills: Knowledge (physical sciences) +1; Craft (chemical or mechanical) +2.

Costs: 2 CP; 4 charges; 1 HS.

BURROWING MOVEMENT (AUTOMATA, VEHICLE)

Requirements: Sealed Environment (life support) (vehicle only), Sturdy.

The machine can burrow through the earth. The machine gains a burrow speed equal to half its walking speed. It cannot burrow through solid rock but it can drill through worked stone at half its burrowing speed.



ARMOR PLATING (ANY)

The armor plating covering the machine is stronger than normal. The machine's armor is increased by +1. This feature can be chosen multiple times.

Skills: Craft (structural), Difficulty 10 +1 per bonus to armor.

Costs: 2 CP; 1 HS per full +2 bonus.

BOOSTER (AUTOMATA, VEHICLE)

The machine can accelerate greatly for short periods of time. A booster is any system that gives a machine a temporary 'kick' of speed, such as special treated coal that burns in a steam engine with a greater heat. A booster will only affect one type of movement: air, land, water, underwater, or aetheric flight. A machine can take different boosters for different movement types, however.

Skills: Knowledge (earth and life sciences) +2; Craft (structural or mechanical) +4.

Costs: 6 CP; 4 charges per hour; 4 HS.

CHAMELEON FIELD (AUTOMATA, STRUCTURES, VEHICLES)

Requirements: An electrical or telluric power source.

The machine can blend with its surroundings. Upon its activation as a standard action, this feature grants the construct three-quarters concealment (30% miss chance) for 2 rounds. The machine can activate this effect three times per day.

Skills: Knowledge (physical sciences) +4; Craft (mechanical) Difficulty 15.

Costs: 2 CP; 1 charges per round.

COMBAT PROGRAMMING (AUTOMATA)

Requirements: Limited or Full Sentience.

The automaton is capable of sophisticated combat maneuvers. The automaton can attempt special fighting techniques without direction, such as flanking, charging, tripping, trying to overrun and bull rushing an opponent.

Skills: Knowledge (tactics) +2; Craft (analytic programming) +2.

Costs: 2 CP.

DAMAGING (PERSONAL WEAPONS, VEHICLE AND ARTILLERY WEAPONS)

Requirements: Damage must be +2 or greater.

The weapon has a chance to inflict grievous damage. A weapon with this feature increases its critical damage multiplier by +1; thus +3 becomes +4, +4 becomes +5 and so on. This special feature can be purchased a maximum of twice but the multiplier cannot be raised to greater than +5.

Skills: Craft (structural or mechanical) +2.

Costs: 2 CP.

DEFENSIVE MANEUVERS (AUTOMATA)

Requirements: Limited or Full Sentience, Combat Programming.

The construct knows how to defend itself better in battle by blocking, parrying and dodging. The construct can attempt to fight defensively, engage in full Defense or aid another, without outside direction.

Skills: Knowledge (tactics) +1.

Costs: 1 CP.

EJECTION SEAT (VEHICLE)

Operators can easily escape from a doomed vehicle. A spring- or explosive-based escape system allows the crew to eject from a damaged machine. It is possible that not all of the crew will be equipped with this system. As a free action, the character sitting in an ejector seat may eject at any time. Any canopy or rooftop is opened clear by a coordinated system and the seat launched at least 20 feet into the air. On the next round, a parachute unfolds, carrying the occupant down to the ground. The ejected character may make a Pilot check (Difficulty 20) to guide the parachute to a specific place within 100 feet of the vehicle. If the occupant has no Pilot skill, or fails, the Narrator randomly determines where he lands. Make a Reflex saving throw (Difficulty 10, or Difficulty

15 if landing in woods, mountain, or urban areas; +5 Difficulty if dropping from aetheric heights) to avoid falling damage.

Skills: Craft (mechanical) Difficulty 12.

Costs: 1 CP; 1 charge.

ELECTROKINETIC FIELD (AUTOMATA, STRUCTURES, VEHICLE)

Requirements: Electric or telluric power source.

The machine is protected by a crackling aura of electrokinetic force. The machine projects a protective field that absorbs incoming damage from weapons and energy attacks. An electrokinetic field provides a +1 bonus to the machine's Defense and Toughness. If an attack hits the machine it reduces the bonuses provided by the shield by +1 (to a minimum of +0). The field can be raised or dropped as a free action but only one of each may occur during a single round. It consumes its cost in charges every round it stays up. An electrokinetic field can quickly recover if left undisturbed. It recovers 1 bonus point per full-round action for a Medium machine or smaller, 2 bonus points per full-round action if Large or Huge and 3 bonus points per full-round action if Gargantuan, Colossal or Awesome. The field may not recover bonus points in any round on which it took damage, whether it is 'up' or not. This feature may be chosen more than once. Each time, the field's bonus to Defense and Toughness increase by +1 but the skill modifiers are unchanged.

Skills: Knowledge (physical sciences) +3; Craft (mechanical) +4.

Costs: 2 CP; 2 charges per round; 1 HS.

ENERGY CONSERVATION (ANY)

Requirements: The machine must have a feature that drains charges over time, such as '1 charge per hour'. Cannot have a work power source.

The machine can be turned off to conserve energy. When the machine is turned off, it shuts down completely and does not spend any charge to power its functions, keeping fuel or battery. Turning the machine back on requires a move action, and the machine is fully operational within 1 full-round.

Skills: Craft (mechanical) +1.

ENERGY WEAPON (ANY)

The machine can shoot a jet or cone of a particular form of energy or matter. The machine can launch a special attack of one of six forms: acid, cold, electrical, fire, gas or sonic. These are the most common forms of attack, but the player can come up with new ones with the Narrator's approval.

Skills: Knowledge (physical sciences) +2; Craft (mechanical) Difficulty 15 + CP cost.

Costs: Varies; 5 charges.

ERGONOMIC (EQUIPMENT, PERSONAL WEAPONS)

The machine accommodates well to a wielder's grip and movements. Upon installation, the machine grants a +1 bonus to the wielder's Strength, his Dexterity or his Constitution. This bonus is applicable only to tasks involving the machine in question. For example, an ergonomic crossbow would confer its bonus to the wielder's Dexterity while it was being used to fire a bolt but not while the wielder was attempting to move silently. This feature can be chosen up to twice. Each time the CP costs stack but the skill Difficulty modifiers and the hard slot remain the same.

Skills: Craft (structural) +4.

Costs: 2 CP; 1 HS.

ENERGY WEAPON TYPES					
Energy Weapon	Effect	Damage	Save	CP	HS
Acid	5 ft. x 20 ft.	+2 (initial), +2 for 3 additional rounds	Ref half (Difficulty 15)	4	1
Cold Cone	20 ft.	+6	Ref half (Difficulty 16)	4	1
Electrical	5 ft. x 60 ft.	+6	Ref half (Difficulty 16)	4	1
Fire Cone	20 ft.	+6	Ref half (Difficulty 16)	4	1
Gas	10 ft. x 10 ft. in front	Unconsciousness for 1 minute/1 Con damage	Fort negates (Difficulty 17)	6	2
Sonic Cone	30 ft. radius	+5, plus deafened for 4 rounds	Fort partial (Difficulty 15)	4	1



EXTRA ARM (AUTOMATA, VEHICLES, STRUCTURES)

The inventor designed the machine with one extra arm (or one arm if there were none originally), increasing its number of actions. The machine has an extra off hand. An operator, either inside the machine or using remote control, must control the arms of the vehicle or structure; all arms end in hands. This feature can be chosen more than once at normal costs.

Skills: Craft (mechanical) +2.

Costs: 3 CP; 1 HS.

EXTRA CHARGE (ANY)

Requirements: An internal power source.

The power source has more capacity than usual. This feature alters the engine of a machine, optimizing so that its maximum capacity is 20% higher than the original. This option can be taken up to five times, each time adding another 20% of the original capacity.

Skills: Knowledge (technology) +2; Craft (structural) +4.

Costs: 4 CP; 1 HS.

EXTRA HEAD (AUTOMATA)

The inventor designed the automaton with one extra head, increasing its perception. The construct has a +1 bonus to initiative, and a +2 bonus on Notice checks (if it is able to make them). This feature can be chosen more than once at normal costs.

Skills: Craft (mechanical) +3.

Costs: 3 CP; 1 HS.

EXTRA LEG (AUTOMATA, VEHICLES)

Requirements: Must have a walk speed based on legs.

The inventor designed the machine with one extra leg, increasing its stability. The construct gains a +4 bonus to balance-based Acrobatics checks and against bull rush attacks and other effects that might throw it off balance. This feature can be chosen more than once at normal costs.

Skills: Craft (mechanical) +2.

Costs: 4 CP; 1 HS.



EXTERNAL POWER SOURCE (ANY)

The machine's power source is located somewhere other than within its body. Instead of using up the machine's hard slots, the power source is located outside and is connected by pipes, cables or other sorts of conduits. The external engine is one or two size categories smaller than the machine it powers. A creature can carry on its back an engine that is one or more size categories smaller but for larger power sources a cart or some other vehicle is needed. A machine can travel as far from its power source as the conduits allow. The conduits are vulnerable to cutting. If the conduits are cut, the machine has a number of charges left equal to the engine's maximum output.

Skills: Knowledge (technology) +2; Craft (structural) Difficulty 12 + CP cost.

Costs: Varies.

EXTERNAL POWER SOURCE FEATURES					
Machine Size	Engine Size	CP Cost	Range	Conduit Toughness	Engine Toughness
Fine	Fine	1	6 inches	-2	+1
Diminutive	Fine	1	9 inches	-2	+1
Tiny	Fine	1	1 ft.	-2	+1
Tiny	Diminutive	2	5 ft.	-1	+2
Small	Diminutive	2	5 ft.	-1	+2
Small	Tiny	3	10 ft.	+0	+3
Medium	Tiny	3	15 ft.	+0	+3
Medium	Small	4	20 ft.	+1	+4
Large	Small	4	25 ft.	+1	+4
Large	Medium	5	30 ft.	+2	+5
Huge	Medium	5	35 ft.	+2	+5
Huge	Large	6	40 ft.	+3	+7
Gargantuan	Large	6	45 ft.	+3	+7
Gargantuan	Huge	7	50 ft.	+4	+9
Colossal	Huge	7	55 ft.	+4	+9
Colossal	Gargantuan	8	60 ft.	+5	+11
Awesome	Gargantuan	8	65 ft.	+5	+11
Awesome	Colossal	9	70 ft.	+6	+13

FAST (AUTOMATA, VEHICLES)

The machine is designed for speed. The machine's speed increases by 10 ft. This special feature can be chosen multiple times.

Skills (Automata): Knowledge (technology) +8; Craft (mechanical) +8.

Skills (Vehicles): Knowledge (physical sciences) +2; Craft (mechanical) +3.

Costs: 4 CP.

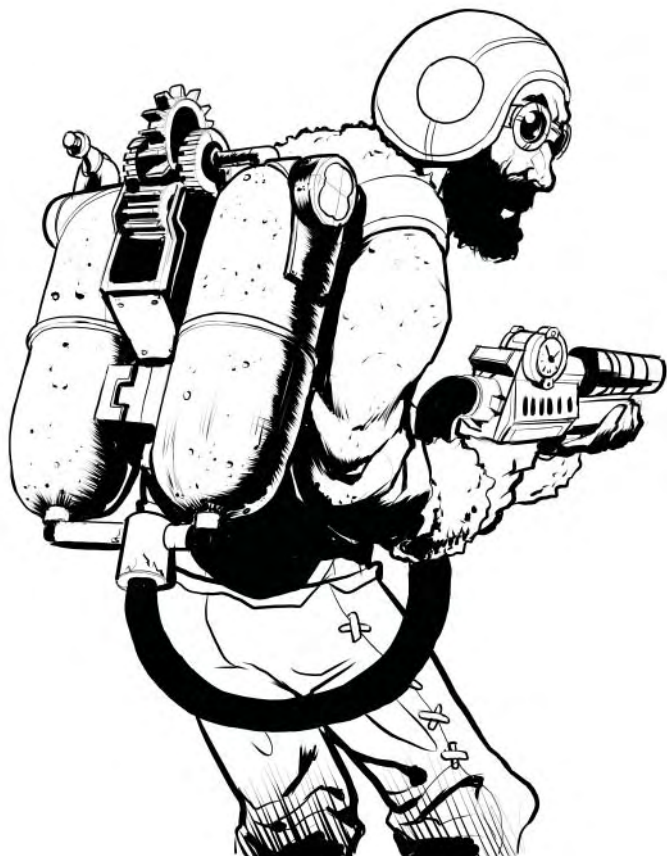
FEAT (ANY)

Requirements: Varies; see text.

The machine can perform a feat, or grants its user the ability to perform one. When adding this feature, the creature must select whether a feat is available for the machine's use, or for its user. Adding a feat for the user is similar to the Skill Assist feature and has no requirements. If the machine will benefit from the feat, it must meet all prerequisites involving the possession of other feats (which must be purchased separately) but may ignore other prerequisites that do not involve a minimum Wisdom or Charisma. Automata may never possess feats with a Wisdom or Charisma prerequisite.

Skills: Craft (mechanical) +3.

Costs: 5 CP; 1 charge; 2 HS.



GREATER DAMAGE (AUTOMATA, PERSONAL WEAPONS, VEHICLE AND ARTILLERY WEAPONS)

Requirements: The machine must have a base damage.

The machine's attacks are more damaging than normal. Upon installing this feature, the machine's base damage is increased by +1. This feature can be chosen up to four times; each time the CP costs stack, but the skill Difficulty modifiers and the hard slot remain the same.

Skills: Craft (structural) +2.

Costs: 3 CP; 1 HS.

HANGAR (AUTOMATA, STRUCTURES, VEHICLES)

Requirements: Gargantuan size or larger.

The machine can host and launch smaller machines. Any portion of a machine's cargo capacity can be designated as a hangar bay for storage of other (smaller) machines. A machine can host one machine of one size smaller, two machines of two size categories smaller, four of three size categories smaller and so on. The CP cost represents the hangar bay's opening size and what size of machine can fit through it, regardless of how many can fit inside.

Skills: Craft (structural) +4.

Costs: 1 CP (Fine), 3 CP (Diminutive), 5 CP (Tiny), 10 CP (Small), 15 CP (Medium), 20 CP (Large), 25 CP (Huge), 30 CP (Gargantuan) or 60 CP (Colossal). CP; 4 HS.

FIRING PORTS (AUTOMATA, STRUCTURES, VEHICLES)

Requirements: Space devoted to passengers or occupants.

The machine allows passengers to attack on their own. The machine has one or more firing ports, sufficient to let passengers fire out of the machine with their own ranged weapons. The firing ports provide improved cover, the equivalent of arrow slits.

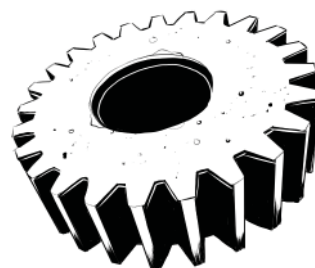
Costs: 1 CP per 3 firing ports.

HARMFUL (PERSONAL WEAPONS, VEHICLE AND ARTILLERY WEAPONS)

The weapon is more likely to cause greater damage. A weapon with this feature increases its critical threat range by 1; thus 20 becomes 19-20, 19-20 becomes 18-20 and so on. This special feature can be purchased a maximum of three times but the threshold cannot be raised higher than 17-20.

Skills: Craft (structural or mechanical) +2.

Costs: 3 CP.



HORIZONTAL FRAME (AUTOMATA)

Requirements: This special feature can only be installed as a base option.

The automaton stands on four legs, not two. The automaton gains a +4 bonus against bull rush attacks and other effects that might throw it off balance. It also increases its walk speed by 10 feet. This feature is used to simulate the shape of a four-legged creature. The construct loses the ability to manipulate objects, so it cannot install features that rely on hands or holding objects.

Costs: 1 CP; -2 HS.

INSTALLING OTHER FEATS

Not all feats are suitable for installation with the Feat special feature. However, due to the sheer quantity of feats available in this book as well as from other products, making hard and fast rules and provisions for all of them would take up far too much space. General guidelines apply instead:

*A feat with an effect already covered by a Special Feature cannot be installed. For example, you can't give a machine the Improved Critical feat, since the Damaging special feature is used to increase a weapon's critical threat range.

*If the prerequisites include a racial ability or supernatural power requirement, the feat cannot be installed, since that would fall into the purview of supernatural items.

*Combat feats like Attack Focus, Cleave, and so on should only be installed on weapons or objects that could be wielded as weapons. There are exceptions of course.

*Machine feats cannot reproduce supernatural effects; there is a special feature for that.

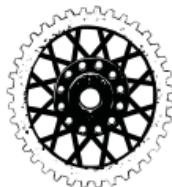
INCREASED RANGE (ANY)

Requirements: An ability, skill or special feature that works over distance.

The machine can extend its effects over greater distances. A machine with this feature increases its range by a half. All pertinent abilities enjoy this improvement, such as remote control, vision range, ranged attacks and so on.

Skills: Craft (mechanical) +2.

Costs: 2 CP; 1 HS.



JUMPING (AUTOMATA, VEHICLES)

The machine can make high jumps. The machine can make very high, unaided, vertical jumps but cannot actually fly. It may use explosive jets, auto-jacks, powerful leg pistons or some similar contrivance to gain a +5 bonus to Jump checks. This special feature can be chosen up to three times. The effects stack with one another.

Skills: Craft (mechanical) +2.

Costs: 3 CP; 3 charges per jump; 2 HS.

LAND MOVEMENT (AUTOMATA, VEHICLES)

The machine has a method for moving on solid surfaces. Upon installing this feature on a vehicle as a base option, the inventor decides whether to make the movement based on wheels, treads, legs or hovering levitation. Automata start with the 'legs' version automatically. Changing an automaton's movement mode, such as by providing it with wheels in preference to legs, requires that the creator install this special feature as a base option.

Wheels: This is the standard medium of land travel. Each wheel above four grants the vehicle or automaton a +1 bonus to maneuverability. A vehicle cannot have more than 8 wheels or tires. Two wheels cost 1 CP, plus 1 CP for every additional wheel.

Treads: These are jointed strips of metal connected in a continuous tread, allowing the wheels to literally carry a road with them. Treads reduce a vehicle's turn rate by half and grant a +2 bonus to maneuverability, while they increase an automaton's base speed by 10 ft. Treads cost 3 CP.

Legs: Automata move through lifelike movements with their legs and vehicles mimic that. Legged vehicles have a standard of two legs and have no turn rate. An inventor can add more legs to a legged vehicle through the Extra Leg special feature. A pair of legs costs 4 CP.

Hover: Instead of moving on the ground, a hover vehicle floats above it. The vehicle's turn rate increases by half but it suffers no penalties for difficult terrain and may travel over liquids. A hover vehicle requires a telluric energy source. A hover system costs 6 CP and takes up 1 HS.

Costs: Varies; 1 charge per hour; 1 HS (hover only).

LIGHT USE (EQUIPMENT, PERSONAL WEAPONS)

Requirements: This special feature can only be installed as a base option.

The machine is light and easy to use. The machine is considered a light weapon for purposes of handling by creatures of the weapon's designated size. Weapons have a base damage equal to a weapon one size smaller.

Costs: -1 CP; 1 HS.

MANEUVERABLE (VEHICLES)

Requirements: A maneuverability mode.

The machine is designed so as to move with more grace. The machine's maneuverability mode increases to the next greatest mode. This special feature can be chosen up to twice. If an automaton has a method of movement that gives it a maneuverability mode, it can install this feature as well.

Skills: Knowledge (physical sciences) +2; Craft (structural) +2.

Costs: 3 CP.

MISCELLANEOUS LIMB (AUTOMATA)

Requirements: Must be of a certain minimum size; see table.

The inventor designed the machine with an extra set of miscellaneous limbs, increasing its actions or movement. The construct gains certain abilities or increases existing ones, depending on the limb chosen. This feature can be chosen multiple times, once for each type of limb. If a limb has more than one possible effect, the limb can be chosen again to select an additional effect for that limb, costing additional CP but taking up no additional HS.

Skills: Craft (mechanical) +2.

Costs: 5 CP; 2 HS.

MISCELLANEOUS LIMB DAMAGE			
Size	Bite	Claw/Slam	Gore/Ram
Fine	-4	-3	-2
Diminutive	-3	-2	-1
Tiny	-2	-1	+0
Small	-1	+0	+1
Medium	+0	+1	+2
Large	+1	+2	+3
Huge	+2	+3	+4
Gargantuan	+3	+4	+5
Colossal	+4	+5	+6
Awesome	+5	+6	+7



NATURAL WEAPONRY (AUTOMATA)

Requirements: The automaton must have an appropriate limb on which to install the natural weapon.

The automaton is equipped with a 'natural' weapon like horns, claws, a barbed tail or some similar monstrous contrivance. The construct gains a bite, gore, sting, or other natural attack. This feature can be chosen multiple times, once for each type of weapon.

Skills: Craft (structural or mechanical) +2.

Costs: 3 CP; 1 HS.

MISCELLANEOUS LIMB		
Miscellaneous Limb	Min. Size	Effect
Long neck	Tiny	Reach for Tiny, Small, Medium and Large creatures increases by 5 ft. Reach for Huge, Gargantuan and Colossal creatures increases by 10 ft.
Larger torso	Small	Choose one: Armor increases by +1, Strength increases by +1, crawl speed if No Legs deficiency is chosen.
Tail	Fine	Choose one: Tail slam attack, swim speed same as walk speed, or +2 bonus to resist bull rushes and overrun attempts.
Fins/flippers	Diminutive	Swim speed same as walk speed plus 10 feet.

ONE-HANDED USE (EQUIPMENT, PERSONAL WEAPONS)

Requirements: This special feature can only be installed as a base option.

The machine can be used in one hand. The machine is considered a one-handed weapon for purposes of handling by creatures of the weapon's designated size.

Costs: 0 CP; 0 HS.

POWER CONVERTER (ANY)

Requirements: Any power source but electric.

The machine can produce electrical effects. The power converter transforms the force of any power source into electrical energy. The machine can install special features that require an electrical power source. The final effect is slightly less efficient than if the machine had an electric power source to begin with; all electrical features cost 1 additional charge to activate or maintain.

Skills: Craft (mechanical) +2.

Costs: 2 CP; 1 HS.

RANGED ATTACK (AUTOMATA, PERSONAL WEAPONS)

The machine's base attack can be performed over a distance. For weapons, this feature can only be chosen as a base option; automata can install it as a special feature and have a range increment equal to a weapon of their size. Upon choosing this feature, the creator defines which type of ranged attack the machine can perform:

Thrown: The automaton or wielder throws the weapon with muscular force. Its maximum range is 5 range increments.

Projectile: The weapon shoots projectiles, which must be reloaded manually. The mechanism can be simple tension for bows and crossbows, pneumatic pressure for high-power blowguns, or spring mechanisms for small ballistae, catapults and their ilk. A projectile weapon's maximum range is 10 range increments.

Ballistic: The weapon shoots projectiles, which must be reloaded manually, via some force reaction that propels the projectile forward at great speeds. The reaction can be a detonation such as those found in firearms, magnetic polarity, or even telekinetic force, although the last two must be provided for separately. A projectile weapon's maximum range is 10 range increments and its critical multiplier is increased by +1.

Energy: Instead of shooting a physical projectile by whichever means, the weapon projects energy in a line (fire, electricity) or a cone (cold, sonic). An energy weapon's maximum range is 8 range increments, and it spends charges from a power source.

Skills: Knowledge (technology) +1 for thrown, +2 for projectile, +3 for ballistic, +5 for energy; Craft (structure) +1 for thrown, Craft (mechanic) +2 for projectile, +4 for ballistic, +6 for energy.

Costs: 2 CP; 1 charge for projectile and ballistic, 2 charges for energy; 1 HS for ballistic, 2 HS for energy.

REACHING (AUTOMATA, PERSONAL WEAPONS, VEHICLE AND ARTILLERY WEAPONS)

Requirements: For melee attacks only.

The machine's melee attacks can strike at targets steps further away. A machine with this feature increases its reach by 5 feet. This special feature can be chosen twice.

Skills: Craft (structural) +1.

Costs: 1 CP; 1 HS.



REMOTE CONTROL, ADVANCED (ANY)

The machine can be operated from a distance with greater reliability. As Basic Remote Control, but the machine requires less supervision. The operator can also do other things at the same time, including operating his own machine, or controlling more than one advanced remote control machine. If he divides his concentration in this way, the character suffers a cumulative -2 penalty on all actions for each machine being remotely controlled.

Skills: Knowledge (physical sciences) +2; Craft (analytic programming) +5.

Costs: 10 CP.

REMOTE CONTROL, BASIC (ANY)

Requirements: Electrical or telluric power sources.

The machine can be operated from a distance. An operator controls the machine from outside, by means of a control system up to 200 feet away. Doing so requires the operator's full attention. He cannot do anything else, just as if he was actually inside the machine and operating it. This also means the operator can only run one machine at once. This method uses the operator's statistics as if he was aboard the machine and controlling it. The creator must specify whether the control system is located in another machine, a base, or a hand-held apparatus. A machine operated by remote control has a +1 to its Malfunction threshold. If the machine has a crew requirement, a team equal in size to that requirement must be used to control it. This feature can be chosen multiple times; each time it adds 200 feet to the control range, up to a maximum of 1,000 feet.

Skills: Knowledge (physical sciences) +1; Craft (analytic programming) +3.

Costs: 5 CP.

ROOMS (STRUCTURES, VEHICLE)

Requirements: Colossal or Awesome size.

The machine has internal habitation areas. An inventor can build specialized rooms inside his machine, occupying a different number of hard slots and costing different CP.

Kitchen: Meals may be prepared aboard the machine, providing room for two cooks to work. The designer must invest in multiple kitchens for larger facilities. **Costs:** 1 CP, 1 HS.

Conference Room: Meetings are held in this room. **Costs:** 1 CP, HS cost according to number of occupants.

Science Lab: This fully equipped science lab gives a +2 bonus to any relevant scientific Knowledge or Research check. Two scientists can work at a time; for larger facilities, buy multiple labs. **Costs:** 3 CP, 1 HS.

Sick Bay: A fully equipped sick bay has surgical and

diagnostic features and allows 2 people to be treated at a time. For hospital facilities, buy multiple sick bays. **Costs:** 3 CP, 1 HS.

Workshop: This fully equipped machine shop includes a variety of specialized tools and spare parts. It grants a +3 bonus on Craft checks for mechanical devices and lets character make Craft (mechanical), Craft (analytic programming), or Craft (structural) checks without penalty. **Costs:** 3 CP, 2 HS.

Skills: Craft (structural) Difficulty 12 + CP cost + HS (one check per room).

Costs: Varies.

SEALED ENVIRONMENT (VEHICLE, STRUCTURES)

The occupants of a machine can live comfortably while hostile conditions rage outside. There are two sorts of sealed environment features. Each of them has different costs for different machine sizes. Climate control allows the occupants to be comfortable in a wide variety of temperatures, ranging from arctic to sweltering jungle. With life support, the machine can operate in the aether, at high altitudes, underwater or on a world without breathable air. Any occupants have their own oxygen supply, which lasts as long as the machine operates. Life support includes climate control.

Skills: Knowledge (physical sciences) +2; Craft (structural or mechanical) +2.

Costs: Varies; 2 HS.

SEALED ENVIRONMENT FEATURES		
Size	Climate Control CP	Life Support CP
Fine-Medium	1	3
Large	2	6
Huge	3	9
Gargantuan	4	12
Colossal	5	15
Awesome	6	18

SELF-DESTRUCT (ANY)

The machine can blow itself up. The construct can destroy itself in a fiery explosion that deals damage to all creatures within a radius. The machine activates its self-destruct mechanism when reduced to Disabled on the damage track, when a particular control is employed or when it is ordered by other means; see the Voice Recognition feature. A manually operated self-destruct mechanism has a timer that the operator sets between 0 (if suicidal) and 6 rounds. The damage is equal to the machine's base Toughness save (that is, without its

REALITY BLURS. GEARCRAFT

armor bonus). A successful Reflex saving throw halves this damage. The radius of the explosion is equal to 10x the machine's base Toughness in feet, and the Reflex save Difficulty is 10 + the machine's base Toughness. Thus, a Medium vehicle (base Toughness +5) explodes in a 50 ft. radius, deals +5 explosive damage, and requires a Difficulty 15 Reflex save for half damage. The machine is completely destroyed and cannot be repaired or even salvaged for parts.

Skills: Craft (structural) +1.

Costs: 2 CP; 4 charges; 2 HS.

SENTIENCE, LIMITED (ANY)

The machine is possessed of artificial intelligence of some sort. The machine has an analytical engine that allows it to operate on its own but it has no self-initiative. It can be given orders or programmed with directives but obeys in a slavish, unimaginative fashion. The machine has no emotions or desires. A machine with limited sentience has a Wisdom of +0 and a Charisma of -5. It may never exceed this. Machines with limited sentience have a virtual Intelligence of +0, which can be raised to +5 through the Craft (analytic programming) skill after it is finished, as described in the Craft (analytic programming) skill description.

Skills: Knowledge (technology) +2; Craft (mechanical or analytical programming) Difficulty 25.

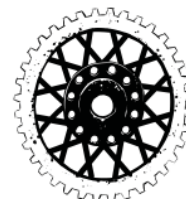
Costs: 3 CP; 1 charge per day; 1 HS.

SENTIENCE, FULL (ANY)

The machine has a fully sentient mind of its own. The machine is capable of exercising (or at least simulating) self-initiative and creativity but remains loyal to the character that owns it unless the creator programs it otherwise. A machine with full sentience has Intelligence, Wisdom, and Charisma of +0 each and may increase them with the Ability Increase special feature. The machine with Full Sentience gains skills points like a character. Find the machine's size on the Automaton Base Attribute table to determine the machine's relevant level. A fully sentient machine is trained in 2 + Int skills at first level (4 ranks each), and gains 2 + Int skill points thereafter. A fully sentient machine capable of movement has a combat bonus equal to three quarters its level.

Skills: Knowledge (technology) +4; Craft (mechanical or expression) Difficulty 25.

Costs: 8 CP; 1 charge per day; 2 HS.



SKILL ASSIST (ANY)

The machine is a tool that helps its user perform certain tasks better. This feature gives the machine a +2 bonus to a certain skill, which it imparts to its user's corresponding skill checks. This feature can be purchased multiple times, either by choosing a different skill or increasing an existing one's bonus by an extra +2 up to a maximum of +10; the CP cost increases, but the skill check modifier and HS remain the same for each skill regardless of its bonus. The HS cost represents any protrusions, tools and gadgets that the machine needs to perform the skill.

Skills: Craft (mechanical) +1.

Costs: CP cost varies (see table); 1 charge per use; 1 HS.

SKILL ASSIST AND SKILL USE			
Skill	Skill Assist	Skill Use	CP
Acrobatics	Yes	Yes	2
Climb	Yes	Yes	1
Craft (chemical)	Yes	Yes	2
Craft (analytic programming)	Yes	Yes	3
Craft (mechanical)	Yes	Yes	2
Craft (pharmaceutical)	Yes	Yes	2
Craft (structural)	Yes	Yes	2
Disable Device	Yes	Yes	4
Disguise	No	Yes	3
Drive	Yes	Yes	1
Escape Artist	Yes	No	2
Gather Information	Yes	No	3
Handle Animal	Yes	No	3
Intimidate	Yes	No	3
Jump	Yes	Yes	1
Medicine	Yes	No	3
Notice	Yes	No	2
Perform	Yes	Yes	3
Pilot	Yes	Yes	1
Ride	Yes	No	2
Search	Yes	No	3
Sense Motive	Yes	No	4
Sleight of Hand	Yes	Yes	1
Stealth	Yes	Yes	3
Survival	Yes	No	2
Swim	Yes	Yes	1

SKILL USE (ANY)

Requirement: Limited Sentence

The machine can perform tasks on its own, without having to go through the slow process of programming (see Artificial Expertise under the description of the Craft [analytic programming] skill). In essence, Skill Use is accomplished with a small analytical engine that has skill knowledge "preinstalled." This feature gives the machine 2 ranks in a certain skill, which it can use to perform any task related to the skill without having to be programmed. Machines with Full Sentence learn skills normally and do not need this feature. This feature can be purchased multiple times, either by choosing a different skill or increasing an existing one's ranks by an extra 2 without a maximum limit; the CP cost increases but the skill check modifier and HS remain the same for each skill regardless of its bonus. Machines with Skill Use can perform a task for 1 round plus one round per rank in the skill.

Skills: Craft (mechanical) +2

Costs: CP cost varies (see table); 1 charge per use; 1 HS.



SPEECH (ANY)

Requirements: Limited or Full Sentience.

The machine can speak with audible words. The automaton can talk through a system of bellows and funnels. The construct can speak Common and the language of its creator and gains two additional languages for each time this ability is installed.

Skills: Knowledge (physical sciences) +1; Craft (mechanical) +5, Speak Language (the language to be installed).

Costs: 1 CP; 1 HS.

STURDY (ANY)

Requirements: Cannot be made from inert or living organic material.

The machine is more resistant to damage. The machine gains a +1 bonus to its base Toughness. Note that this is an actual increase in the machine's Toughness score; it is not simply an armor bonus. Therefore, it cannot be bypassed with a Finesse Attack. This special feature can be chosen up to 5 times.

Skills: Craft (structural) +2.

Costs: 2 CP.

SUMMONABLE (ANY)

Requirements: Telluric power source for machines of Large size or bigger.

The machine can be brought forth from apparently nowhere. In contrast to what the name might imply, magic is not always involved in this feature, although for big machines, it assuredly is. For Medium and smaller machines, the inventor has an option to make them capable of 'folding' into a smaller object, which a character uses to 'summon' the machine. As an alternative, for machines of all sizes, a telluric circuit is placed on an object so that it can summon the machine linked to it by supernatural means. In both cases, the user of the summoning control pushes the button or completes the circuit as a move action and the machine 'appears' in front of him in 2 rounds. The summon control can be anything, from a medallion to a piece of clothing or a suitcase into which the machine folds.

Skills: Knowledge (physical sciences or supernatural) +3; Craft (mechanical or expression) +6.

Costs: 8 CP; 5 charges per summoning or dismissal; 1 HS.

SUPERNATURAL EFFECT (ANY)

Requirements: Telluric power source.

A supernatural effect is essentially a supernatural power imbued into a part of the machine, from which effects can be released at a later time. The power check is made, the save Difficulty is set, and the specific effect (if the power has more than one potential effect) is chosen at the time of the item's creation.

To create a supernatural effect, a character must have the Imbue Item feat and the appropriate supernatural power. If the item being imbued is a weapon, "Supernatural Weapon" must be one of the powers given to it. First, the proper components must be purchased. The components to make a supernatural effect have a purchase Difficulty of 6 +2 per 4 power ranks that the adept wishes to imbue. (If the power requires a power check, the power check bonus at the time the item is used is equal to the ranks + 3 + the adept's key ability at the time.)

Next, a moderate Craft (mechanical) check is necessary to create the item, which must be masterwork (thus, the Difficulty is 25, and takes 12 hours). The enchanting of the item takes an hour or the use time of the power (whichever is longer). After this, the adept must make a power check, including a +5 power challenge, to imbue the power's effect into the item. The power check Difficulty is equal to 15 or the power check required by the effect being imbued, whichever is greater. Finally the adept must make a Difficulty 15 Knowledge (supernatural) check and spend a Conviction point to seal the effect into the item until it is released. The adept may choose to take 10 on the Craft, Knowledge (supernatural), and power checks. If any of these checks fail, the process must begin anew.

Note that if the circuitry is made with arcystal, the item creation's check Difficulty decreases by -4 but the Craft check's Difficulty remains unchanged. The CP cost depends on the ranks imbued, as do the charges it consumes with every use in the case of instantaneous durations, or for every 5 time units in the case of timed durations.

Skills: Craft (mechanical) Difficulty 25.

Costs: See table.

SUPERNATURAL EFFECT			
Ranks	CP	Charges	HS
1-4	3	2	1
5-8	6	4	2
9-12	9	6	3
13-16	12	8	4
17+	15	10	5

SWERVING HIPS (AUTOMATA)

Requirements: Basic Sentience, Combat Programming, Dex +1 or better. This special feature can only be installed as a base option.

The automaton's torso can rotate 360 degrees, widening its area of influence. The construct can turn to face in any direction as a free action.

Skills: Craft (mechanical) +2.

Costs: 3 CP.

TESLA FIELD (ANY)

Requirements: An electric power source.

The machine electrocutes any that approach it. The machine becomes highly charged with electricity, waiting only for something to ground its current. The machine spends the charges for the effect every round. While this feature is active, anyone that approaches within 30 feet of the machine attracts an electrical discharge that deals +5 points of damage, with a Reflex saving throw at Difficulty 15 allowed for half damage. The machine is insulated so that it does not shoot lightning towards its occupants or wielders, although everyone else is fair game.

Skills: Knowledge (physical sciences) +4; Craft (mechanical) +5.

Costs: 5 CP; 5 charges; 2 HS.

TWO-HANDED USE (EQUIPMENT, PERSONAL WEAPONS)

Requirements: This special feature can only be installed as a base option.

The machine must be used with two hands. The machine is considered a two-handed weapon for purposes of handling by creatures of the weapon's designated size. Weapons have a base damage equal to a weapon one size bigger.

Costs: 1 CP; -1 HS.

UNDERWATER MOVEMENT (AUTOMATA, VEHICLE)

Requirements: Sealed Environment (life support) (vehicles only), Water Movement; cannot be a sail vessel.

The machine can move underwater. The machine can sink beneath the water's surface in addition to travelling on it.

Skills: Knowledge (physical sciences) +2; Craft (structural or mechanical) +4.

Costs: 4 CP; 2 charges per hour; 1 HS.

USER-FRIENDLY (ANY EXCEPT AUTOMATA)

The machine was designed for use by the uninitiated and its controls are easy to read and operate. The penalty for using this machine without the necessary skill is reduced to -2. If the machine is a weapon, it becomes a martial weapon, instead of an exotic one. Only weapons can choose this feature a second time, in which case they become simple weapons.

Skills: Knowledge (technology) +1, Knowledge (behavioral sciences) +8; Craft (mechanical) +4.

Costs: 2 CP; 1 HS.

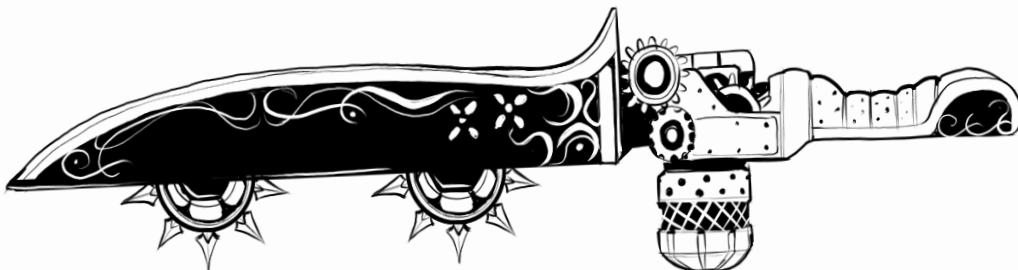
VOLTAIC CLAWS (AUTOMATA)

Requirements: An electric power source.

The automaton's limbs can produce rippling arcs of electricity. By spending the indicated amount of charges, the construct can conduct electricity from its power source directly to its fists, with small lightning arcs travelling across its arms. A successful melee attack deals +3 electrical damage in addition to the normal attack, discharging the effect. The automaton can maintain the charge for 3 rounds plus its Strength; if he does not hit anything in that time, it recovers all but one of the charges spent.

Skills: Knowledge (physical sciences) +3; Craft (mechanical) +3.

Costs: 2 CP; 2 charges; 1 HS.



VOICE RECOGNITION (ANY)

Requirements: Basic Remote Control.

The machine recognizes command words. When this feature is installed, the machine is capable of recognizing spoken commands or sound cues. The creator sets up a command word or sound for each of the machine's functions, which it performs when anyone utters the word or makes the sound within 60 feet of it. For an additional CP, the creator can increase the sophistication of the system so that it only recognizes the commands coming from one voice or sound source.

Skills: Knowledge (physical sciences) +2; Craft (analytic programming) +5.

Costs: 3 CP.

WALL-CRAWLING (AUTOMATA, VEHICLE)

Requirements: Land Movement.

The machine can climb like an insect. The machine can use spikes, adhesive pads, or some other means to climb walls and ceilings as if it were an insect. The machine gets +8 on all Climb checks, and may take 10 while climbing, even if threatened or distracted.

Skills: Knowledge (physical sciences) +2; Craft (mechanical) +3.

Costs: A number of CP equal to half the machine's armor; 1 charge per round of wall or ceiling movement; 3 HS.

WATER MOVEMENT (AUTOMATA, VEHICLE)

The machine has a method for travelling over water. The machine gains a mode of skimming over the water and other liquids, with the same speed as its base speed. Upon installing this feature, select one of the following methods of propulsion:

Oars: One or more occupants move the machine by rowing. Oar-based machines always have a work power source, requiring one rower for every 20 ft. of speed. Oar-powered movement costs 1 CP.

Sails: The machine moves by the strength of the wind. Its maneuverability is one mode worse, although its score remains the same. Sailing vessels always have a wind/water power source. If there are no winds, the machine cannot move. Sail movement costs 2 CP and takes up 1 HS.

Mechanical: The machine moves by the action of rotating paddles, propellers or screws placed in the back. Mechanically powered machines reduce their turn rate by 10 feet. Mechanical movement costs 4 CP and takes up 2 HS.

Skills: Craft (structural or mechanical) +2.

Costs: Varies; 2 charges per hour.

WEAPON MOUNTING (AUTOMATA, VEHICLE, STRUCTURES)

Requirements: Combat Programming (automaton only).

The machine has weapons incorporated into its frame. An automaton usually mounts weapons on its arms or forearms but alternate limbs are also used. A hard slot is devoted to a vehicle and artillery weapon, or a mundane weapon of appropriate size. Mounted weapons must be of the same size category as the machine and a machine can only mount a maximum of three weapons. These weapons cannot be lost as they are part of the machine's body. An automaton is automatically proficient with weapons mounted on it. Vehicles must specify the fire arc of the vehicle; for which see Vehicle Combat above. A turret mounting costs extra, while a boresight mounting costs less. A rotating weapon mounting in a vehicle occupies 1 extra HS if it is not a turret, making the weapon capable of targeting anything in its fire arc.

Skills: Craft (mechanical) +1.

Costs: 4 CP, 5 CP for a vehicle turret, 3 CP for vehicle boresight; 1 HS, 2 HS if rotating.

WEAPON MOUNTING, CONCEALED (AUTOMATA, VEHICLES, STRUCTURES)

Requirements: Weapon Mounting.

One or more of the mounted weapons in the machine are hidden until they are needed. At the expense of one charge and as a free action, the machine can draw its weapons from its concealed mounting. The first time the machine attacks with a concealed weapon in a single encounter, it gains a +1 bonus to its attack roll.

Skills: Craft (mechanical) +1.

Costs: 2 CP; 1 charge; 1 HS.

WORN/CARRIED USE (EQUIPMENT, PERSONAL WEAPONS)

Requirements: This special feature can only be installed as a base option.

The machine must be worn or carried in the body in order to be used. The machine must be worn on some part of the user's body. The possible locations for wearing or carrying are the following:

- *Head (helmets, hats, goggles, visors)
- *Neck (ties, pendants, medallions, torques)
- *Whole body (armor, full suit of clothing)
- *Back (backpacks, cloaks, jackets, coats)
- *Torso (harness, vest)
- *Arm (bracers, bracelets)
- *Hand (ring, glove, gauntlet)
- *Hip/Leg (trousers, harness, holster, belt)
- *Foot (footwear, ankle sheathes)

Costs: 1 CP; -1 HS.

DEFICIENCIES

A creator can introduce deficiencies into his design on purpose, so as to reduce the overall costs of construction.

The values in CP and HS are always in the creator's favor; that is, instead of adding up to the total construction point cost and taking up hard slots, the deficiency subtracts from the CP cost and provides additional hard slots. Some of them also make the task of building the machine easier, reducing the different Craft Difficulties.

DEFICIENCIES	
Any	Berserk, Flammable, Impedance, Noisy, Low Charge, Short-Range, Start-Up Time, Unarmored, Unskilled, Volatile, Vulnerability, Weak Spot
Automata	Cumbersome, Clumsy, Hangar Queen, Inaccuracy, Lesser Damage, No Arm, No Hand, No Land Movement, No Leg, Ponderous, Restricted Path, Slow
Personal Weapons	Inaccuracy, Lesser Damage
Structures	Open, Poor Visibility
Vehicles	Clumsy, Cumbersome, Hangar Queen, No Land Movement, Open, Ponderous, Poor Visibility, Restricted Path, Road Vehicle, Slow
Vehicle and Artillery	Inaccuracy, Lesser Damage

BERSERK (ANY)

Requirements: Limited or Full Sentience.

A semi-sentient machine acquires a dangerous temper. When the machine enters combat, there is a chance each round that it will go berserk. Roll d20 on its turn each round; the machine goes berserk on a roll of 20 for the first 5 rounds, on a roll of 19 during the next 5 rounds, and so on. The uncontrolled machine attacks the nearest living creature, smashes some object smaller than itself if no creature is within reach, or moves in a random direction to spread more destruction. This state lasts for 2 rounds, after which the machine recovers and its berserk chance resets.

Skills: Craft (expression or mechanical) –3.

Costs: –2 CP.

CLUMSY (AUTOMATA, VEHICLES)

Requirements: A maneuverability mode.

The machine is the proverbial elephant in the glasshouse. The machine's maneuverability mode decreases to the next worse mode. This deficiency can be chosen up to twice. If an automaton has a method of movement that gives it a maneuverability mode, it can install this deficiency as well.

Skills: Craft (structural) –2.

Costs: –3 CP.

CUMBERSOME (AUTOMATA, VEHICLES)

Requirements: An unmodified base Dexterity or a maneuverability score.

The machine reacts poorly to sudden movement. The machine's Dexterity is reduced by –1 or its maneuverability score is reduced by –2. This deficiency can be chosen multiple times. Each time it subtracts an extra –1 or –2 penalty and awards the same amount of CP but the skill checks remain the same.

Skills: Craft (structural) –2.

Costs: –1 CP.

FAULTY FUNCTION (ANY)

One of the machine's features is prone to disaster. Select a particular check the machine or an operator makes with the machine. The malfunction threshold for this check increases by +1 and malfunction effect rolls have a +2 to their roll.

Skills: Craft (structural or mechanical) –2.

Costs: –1 CP.

FAULTY MOVEMENT (AUTOMATA, VEHICLES)

Requirements: Aerial Movement, Aetheric Movement, Burrowing Movement, Land Movement or Water Movement.

The machine's movement is very far from perfect. When the machine moves a certain distance depending on its size, it is prone to overheat, jam or stall. For every span of distance equal to twice the machine's speed that it moves, the machine either makes a Fortitude saving throw or the operator makes the appropriate skill check (Drive, Pilot, and so on) with both rolls having a Difficulty of 15. The Difficulty increases by +1 for every successful check or save after the first, so that the second span of movement causes a saving throw or skill check with a Difficulty 16, the third round one of Difficulty 17 and so on. Should the saving throw or check fail, the machine grinds to a halt and it takes one full round to kick-start it again. For each round on which the machine remains immobile, the Difficulty is reduced by –1 until it reaches

its initial Difficulty 15. Aerial machines drop from the sky and underwater ones begin to sink. Machines moving through another medium simply stop.

Skills: Craft (mechanical) –2.

Costs: –1 CP.

FLAMMABLE (ANY)

Requirements: Soft organic materials or steam power source.

The machine catches on fire easily. The machine's structure and armor are made of wood or similar flammable material. Its armor does not protect at all against fire or other fire-based damage. Saving throws against fire attacks are made at a –4 penalty.

Skills: Craft (structural) –4.

Costs: –1 CP per +1 armor bonus.

HANGAR QUEEN (AUTOMATA, VEHICLES)

The machine requires extra careful maintenance to work properly. The machine spends much of its time in a garage, shop, port or similar undergoing repairs. For every hour it was used, it should be given at least an hour of maintenance. If this care is not provided, the machine's malfunction threshold increases by 1 every day the machine's maintenance is not completed.

Skills: Craft (mechanical) –4.

Costs: –8 CP.

IMPEDANCE (ANY)

Requirements: An internal power source.

The machine's power source cannot conduct much power. The delivery rate of the power source is cut in half.

Skills: Craft (structural) –4.

Costs: –3 CP; –1 HS.

INACCURACY (AUTOMATA, PERSONAL WEAPONS, VEHICLE AND ARTILLERY WEAPONS)

The machine's attacks can go wildly off its mark. The machine gains a –1 penalty to attack rolls.

Costs: –2 CP.

LESSER DAMAGE (AUTOMATA, PERSONAL WEAPONS, VEHICLE AND ARTILLERY WEAPONS)

Requirements: A base damage.

The machine's attacks are weaker than expected. The machine's base damage is reduced by –1.

Skills: Craft (structural) –2.

Costs: –2 CP.

LOW CHARGE (ANY)

Requirements: An internal power source.

The machine's power source has less capacity than usual. This feature alters the engine of a machine, downgrading it so that its maximum capacity is 80% of its original. This option can be taken up to five times, each time reducing the original capacity by 20%.

Skills: Craft (structural) –4.

Costs: –4 CP; –1 HS.

NO ARM (AUTOMATA)

One or both of the automaton's arms are missing on purpose. If the automaton only has one arm, it cannot wield two-handed weapons nor perform any task in which two arms and leverage are required; in addition, it suffers a –1 penalty to Defense. If both arms are missing, the automaton cannot attack unless it has other limbs that can do so.

Skills: Craft (structural or mechanical) –2 per arm.

Costs: –2 CP per arm; –1 HS per arm.

NO HAND (AUTOMATA)

One or both of the automaton's arms end in stumps. The machine cannot wield weapons nor grab anything with the handless limb. This deficiency can be chosen once per arm in the automaton's body; each time deducts 1 CP from the total and frees an additional hard slot.

Skills: Craft (structural or mechanical) –1.

Costs: –1 CP; –1 HS.

NO LAND MOVEMENT (AUTOMATA, VEHICLE)

Requirements: A base walk speed.

The machine is incapable of moving on land. The machine cannot move along the ground. This is usually the case for sentinel statues or airships that cross the sky but do not cruise the roads.

Skills: Knowledge (technology) –2; Craft (mechanical) –2.

Costs: –3 CP; –2 HS.

NO LEG (AUTOMATA)

One or both of the automaton's legs are missing on purpose. If the automaton only has one leg, it suffers from a –2 penalty against bull rush attacks and other effects that might throw it off balance. It also decreases its walk speed by 10 feet. If both legs are missing, the machine is stationary, and changing its facing is a move-equivalent action. It cannot take any feature that would require the presence of a leg, such as Fast or Jumping. Note that if the character changed the automaton's mode

of Land Movement as a base option, the machine already has no legs and it does not benefit for this deficiency. If the machine has the Miscellaneous Limb (torso) feature twice and Miscellaneous Limb (tail), it can slither like a snake, subtracting 20 feet from its normal walk speed, with a minimum of 10 feet.

Skills: Craft (structural or mechanical) –3 per leg.

Costs: –3 CP per leg; –2 HS per leg.

NOISY (ANY)

Requirements: Cannot have a telluric power source.

The machine can be heard from afar when it is working. A noisy machine can easily be detected by Notice checks, giving any would-be listeners a +10 on their Notice checks. A noisy machine can never attempt Stealth checks. This deficiency can be chosen twice. Its effects and reductions stack. A machine with one instance of this deficiency is as noisy as an automotive engine, while one with two is as noisy as a steam train. This is a very common deficiency for clockwork- and steam-powered machines.

Costs: –3 CP.

OPEN (STRUCTURES, VEHICLES)

The occupants of the machine are open to damage. The machine's armor does not protect the crew or passengers, only the machine itself. This is common for machines like galleys, automotives, bicycles, open-cockpit ornithopters or automaton horses. The machine provides reduced cover (+2 to Defense and +1 on Reflex saves), or no cover if the machine is the same size or smaller than the rider.

Skills: Craft (structural) –3.

Costs: –1 CP per two points of armor; –2 HS.

PONDEROUS (AUTOMATA, VEHICLES)

The machine's materials are heavier, making its movements clumsier. The construct's walk speed is reduced by 10 feet, with a minimum of 10 feet per round. In addition, automata cannot run.

Skills: Knowledge (technology) –2; Craft (mechanical) –2.

Costs: –2 CP.

POOR VISIBILITY (STRUCTURES, VEHICLES)

Requirements: May not have the Open deficiency.

The passengers or occupants cannot see well outside the machine. The machine has very poor visibility, due to having small windows or none at all, along with a lack of compensating instruments or other problems. The only way to get unrestricted vision is to actually stick one's

head out of a hatch or window, leaving one with reduced cover, as per the Open deficiency. Otherwise, sight-based Notice checks from inside are at –2 if looking directly forward and –4 if looking in any other direction. This is a common deficiency for tanks.

Skills: Craft (structural) –1.

Costs: –2 CP; –1 HS.

ROAD VEHICLE (VEHICLES)

Requirements: Land Movement (wheels).

The vehicle depends on roads and highways for its top performance. The vehicle attains full land speed only on a smooth flat surface such as a paved road. Its land speed is halved in other circumstances, such as on a dirt road, off-road or similar surface.

Skills: Craft (mechanical) –2.

Costs: –1 CP per 20 feet of land speed.

RESTRICTED PATH (AUTOMATA, VEHICLES)

The machine travels along a predetermined route. For one reason or another, the machine cannot leave a narrowly restricted area. This may represent an automaton that is programmed to follow a specific guard route, a railway train, a cable car that cannot leave its track, or a towed carriage. The inventor decides if it is a long path, such as a railway line, or a short path such as a tether or a building interior.

Costs: –1 CP Fine, –3 CP Diminutive, –6 CP Tiny, –9 CP Small, –12 CP if Medium, –15 CP if Large, –18 CP if Huge, –21 CP if Gargantuan, –24 CP if Colossal or –27 CP if Awesome; x2 if a short path.

SHORT-RANGE (ANY)

Requirements: An ability, skill or special feature that works over distance, including ranged attacks.

The machine cannot extend its effects over a very great distance. A machine with this feature reduces its range by half; all pertinent abilities suffer from this deficiency, such as remote control, vision range, ranged attacks and so on.

Skills: Craft (mechanical) –2.

Costs: –2 CP.



SLOW (AUTOMATA, VEHICLES)

The machine's gearing isn't as efficient as it could be. The machine's speed decreases by 10 ft. This special feature can be chosen multiple times, to a minimum speed of 10 ft.

Skills (Automata): Knowledge (technology) -4; Craft (mechanical) -4.

Skills (Vehicles): Knowledge (physical sciences) -1; Craft (mechanical) -1.

Costs: -2 CP.

START-UP TIME (ANY)

Requirements: Energy Conservation feature.

The machine takes a while to recover from a shut down state. If the machine is shut down, a character cannot just flip a switch and start off from cold. The boiler takes a while to heat up, the energy cells take some time to become fully active, the springs are not properly aligned, a piece of armor takes some time to put on and so forth. While the start-up process progresses, the machine cannot engage any of its functions. The CP bonus is greater the longer it takes the machine to start.

Skills: Craft (mechanical) -2.

Costs: -1 CP if 1 minute, -2 CP if 10 minutes, -4 CP if an hour, -8 CP if 4+ hours.

UNARMORED (ANY)

The armor plating covering the machine is weak. The machine's armor is decreased by -1. This deficiency can be chosen multiple times; each time weakens the armor by a further -1, to a minimum of +0.

Skills: Craft (structural) -2.

Costs: -1 CP.

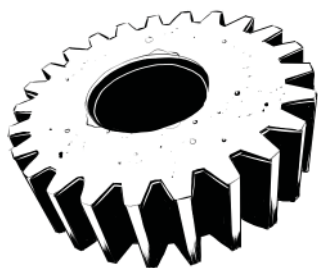
UNSKILLED (ANY)

Requirements: Full Sentience

The machine cannot perform skill-based tasks. The machine cannot gain skill ranks. It can still make untrained skill checks.

Skills: Craft (mechanical) -3.

Costs: -2 CP.



USER-HOSTILE

The machine is hard to operate. Anyone other than the creator who tries to operate the machine must have 5 ranks in Knowledge (technology) to understand the controls. Even if a character meets all other operation requirements, including this one, he still suffers a -2 penalty on all rolls related to operating the machine.

Skills: Craft (mechanical or structural) -2

Costs: -1 CP.

VOLATILE (ANY)

The machine may blow up if sufficiently damaged. Fuel, a boiler, ammunition, or overloaded telluric circuits may explode if the machine is disabled or destroyed. If the attack disables or destroys the machine, then the machine will explode after 2 rounds. This explosion deals +4 damage, +1 per size category above Tiny to everyone within the machine and within 5 ft. of it (+5 ft. per size category above Tiny). A Reflex saving throw is allowed for half damage, with a Difficulty equal to 10 + the damage (as per a normal area attack).

The damage type depends on the type of power source the machine had, as determined by the Narrator. For example, clockworks might do piercing or slashing damage (or both!) as its tightly-wound springs uncoil into razor-sharp ribbons of steel. A steam-powered machine might explode into a billowing cloud that deals fire and bludgeoning damage from the super-heated steam and flying debris from the boiler.

Skills: Craft (structural) -4.

Costs: -1 CP per size category.

VULNERABILITY (ANY)

The machine is particularly vulnerable to certain attacks. The machine takes double damage from one of the following types of attack: air, cold, earth, fire, force, electrical, rust, sonic, and water. Alternative vulnerabilities include bludgeoning, piercing or slashing weapons, and certain materials.

Costs: -4 CP.

WEAK SPOT (ANY)

Requirements: Medium size or larger.

The machine is particularly vulnerable in a certain part of its body. The construct is subject to critical hits, but not to sneak attacks. Opponents who succeed at a Notice check (Difficulty 5 + machine's base Toughness) can attempt to target the weak spot by applying a -2 to their attack rolls and deal +1 damage if successful.

Skills: Craft (structural) -5.

Costs: -4 CP.

DERIVED VALUES

Once all the options and alterations to the machine's design are in place, it is time to fill up its stat block. The 'base attributes' section given for each type of machine indicates the different fields in that machine type's stat block. Write down the characteristics of the chosen power source and list all the special features in the appropriate field. If a special feature or deficiency alters some of the characteristics of the machine, then apply them at the end of this phase.

COST CALCULATIONS

After every characteristic of the machine is laid down and confirmed, it is time to calculate what it is going to cost to build it.

The first value to calculate is the machine's Purchase Difficulty, which is what the inventor can expect to sell his machine for to a third party.

Purchase Difficulty = CP cost divided by 2.5 and rounded down.

This Purchase Difficulty does not include the power source but it does include other independently made subsystems, like special features with full Craft Difficulties instead of just Craft Difficulty modifiers.

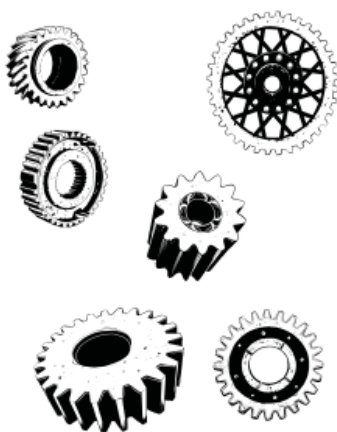
Raw Materials' Purchase Difficulty = Machine's Purchase Difficulty - 3.

Some inventors know how to cannibalize leftover wire and spare conductors, as well as converting suitably shaped items such as dustbins or teapots, to reduce the cost of raw materials as per the Salvage feat.

SALVAGING PARTS

If an inventor has the parts that correspond to a special feature he wants to install into another machine, he halves the CP cost of the salvaged special feature and deducts the result from the raw material's Purchase Difficulty. The actual Purchase Difficulty of a special feature acquired independently would be its CP cost multiplied by 5. Only special features with full Craft Difficulties can be purchased in this way. All others are created for the machine.

Note that the special feature must have a relative size category equal to the machine it is supposed to fit into; if trying to fit a special feature for a smaller or larger machine, all Craft Difficulties increase by +3. A machine can fit salvaged parts up to two size categories smaller or larger.



WEIGHT

Equipment and personal weapons have a weight value. Weight is calculated as follows.

Weight = CP cost divided by 2 lb.

This only applies to equipment and personal weapons; all other machines calculate their weight, if needed, as follows.

Weight = CP cost x10 lb.

CONSTRUCTION BEGINS!

Once every detail is in place and all materials are available, the inventor proceeds to make all his hard brainstorming into reality. He achieves this in two main steps. These are the 'research and design' step and the 'construction' step. Most of the research and design phase is represented in the selection of all the machine's characteristics but the inventor still needs to ground all his plans and concepts into reality through actual in-game research.

RESEARCH

The research phase involves one or many Knowledge checks. All special features that include a Knowledge Difficulty modifier add that particular knowledge category to the research. For example, if a machine's special features include two Difficulty modifiers for Knowledge (physical sciences) and one Difficulty modifier for Knowledge (technology), it means that the inventor must make one Knowledge (physical sciences) check and one Knowledge (technology) check, adding all the modifiers together.

Knowledge check Difficulty = 10 + special features' Difficulty modifiers.

The inventor only makes one check for every Knowledge category. Research time is one week per 5 points in the Difficulty or part thereof. The inventor works for 8 hours each day. He cannot rush the process by working longer each day but the days need not be consecutive and the inventor can use the rest of his time as he sees fit. A character can work on only one machine at a time. If a character starts work on a new research, all effort spent on the ongoing research is wasted.

CONSTRUCTION

The construction phase involves many Craft checks. First come those for the power source (if the inventor is building it himself) and all special features that have an independent Craft Difficulty. The independent Craft checks represent that the inventor has the parts ready and only needs to install them in the machine's body during its construction. As in the research phase, special features that indicate a Craft Difficulty modifier add that

particular craftsmanship category to the construction. For example, if a machine's special features include one Difficulty modifier for Craft (structural) and three Difficulty modifiers for Craft (mechanical), it means that the inventor must make one Craft (structural) check

and one Knowledge (mechanical) check, adding all the modifiers together. Special features that express the modifier in optional pairs (i.e. 'mechanical or structural') give the inventor the option to add the modifier to either one of the Craft categories, meaning that he can possibly avoid one type of Craft check altogether. Special features that express the modifier in inclusive pairs (such as 'mechanical and structural') add their modifier to both Craft Difficulties and therefore add both categories to the construction.

Craft check Difficulty = 5 + special features' Difficulty modifiers.

The inventor only makes one check for every Craft category. Construction time is one week per 5 points in the Difficulty or part thereof. The inventor works for 8 hours each day. He cannot rush the process by working longer each day but the days need not be consecutive and the inventor can use the rest of his time as he sees fit.

A character can work on many machines concurrently but may only do this by devoting one full day to each machine's work at a time, as the days add up to the weeks required for the construction.

SUCCESS AND FAILURE

The better the inventor does in the different checks, the faster his results will come about. For every point above the Difficulty that the character succeeds, he cuts 1 day from the check's duration.

Likewise, doing badly in the checks will have detrimental effects on the machine. The degree of failure determines the severity of the inventor's blunders, which translate as errors in design or in the actual construction. If the character fails a check by up to 5 points, the machine's malfunction threshold increases by 1 for every function; this increase stacks with those of deficiencies such as Faulty Function. If the threshold ever reaches 1-5, any further failed check does not increase the threshold but instead gives a +1 modifier to the malfunction effect rolls.

If the roll fails by more than 5 points but up to 10, the inventor makes a serious mistake and must begin again. In the case of research this only means wasted time, but in the case of construction this also means that the inventor spoils part of the raw materials and must replace a portion of them. He must purchase replacement material at the same Purchase Difficulty minus 4 before he can begin the process once more. If he does not renew his work in one week, all materials are wasted.

If a roll fails by more than 10 points, research goes in an entirely erroneous direction and imposes a -2 penalty

on all Knowledge checks during the inventor's next try on the same machine. If the failed roll corresponds to a Craft check, things go seriously wrong and there is an accident involved, dealing +3 points of damage to the inventor and a surrounding area of 10 feet. In this event, all materials are lost beyond recovery.

ADAPTING ITEMS

A creator can use items that already exist such as those available in the Equipment and Wealth chapter and add special features to them, making them into amazing machines. There are some guidelines to follow when doing this.

*Completed items have only one hard slot available. An inventor may use the Additional Hard Slot feature if he wants to fit more machinery in the item but each hard slot adds one-tenth of the item's weight. A completed item cannot have more than 6 additional hard slots installed on it.

*Completed items cannot fit special features that require charges without having a power source installed or already in place, as is the case of vehicles. If an item is to be fitted with a power source, use the size most closely describing the item.

*The additions have a base Purchase Difficulty of 15 + total CP. These are independent from the base item's own Purchase Difficulty.

*Determine whether the base item is simple, moderate, complex, advanced or extreme for purposes of the Craft skill and use the Difficulty given as a base for both research and construction. Add all skill modifiers for the special features to the base Difficulty.

*Follow the process of construction as normal, including the addition of malfunctions.

USING AN AMAZING MACHINE

The machine's type determines mostly how it will be used. Vehicles will be ridden, weapons will be fired and structures will either be left to fulfill their functions or they will be inhabited. The different operations of machines determine whatever rolls are needed to make the machines perform.

FUEL CONSUMPTION

All machines that are left running consume 1 charge per day in addition to the charges used up by their different functions. The machine uses this charge to maintain its machinery and fuel any accessory or internal function.

Every time a machine uses a special feature that has a cost in charges, it deducts that number of charges from the power source's capacity until the power source is depleted.

An operator can renew the power source by the method expressed in the engine's description before it runs out

of charges, in order to ensure a smooth and continuous operation. Alternatively, the Energy Conservation feature allows the machine to be shut down in order to preserve its charges from being spent by continuous operation.

OVERTAXING THE POWER SOURCE

Sometimes, a character will need more power from the machine that it was designed to deliver, which is the case when activating several features during the same round. This is usually done in combat but also during extreme situations where the machine is expected to perform well in order to save its owner's life.

To overtax a power source, the operator makes a skill check to squeeze more power out of the machine. Acceptable skill checks are Drive, Pilot, Knowledge (technology), or Craft (mechanical).

Overtax check
Difficulty = 15
+ number of
charges needed.

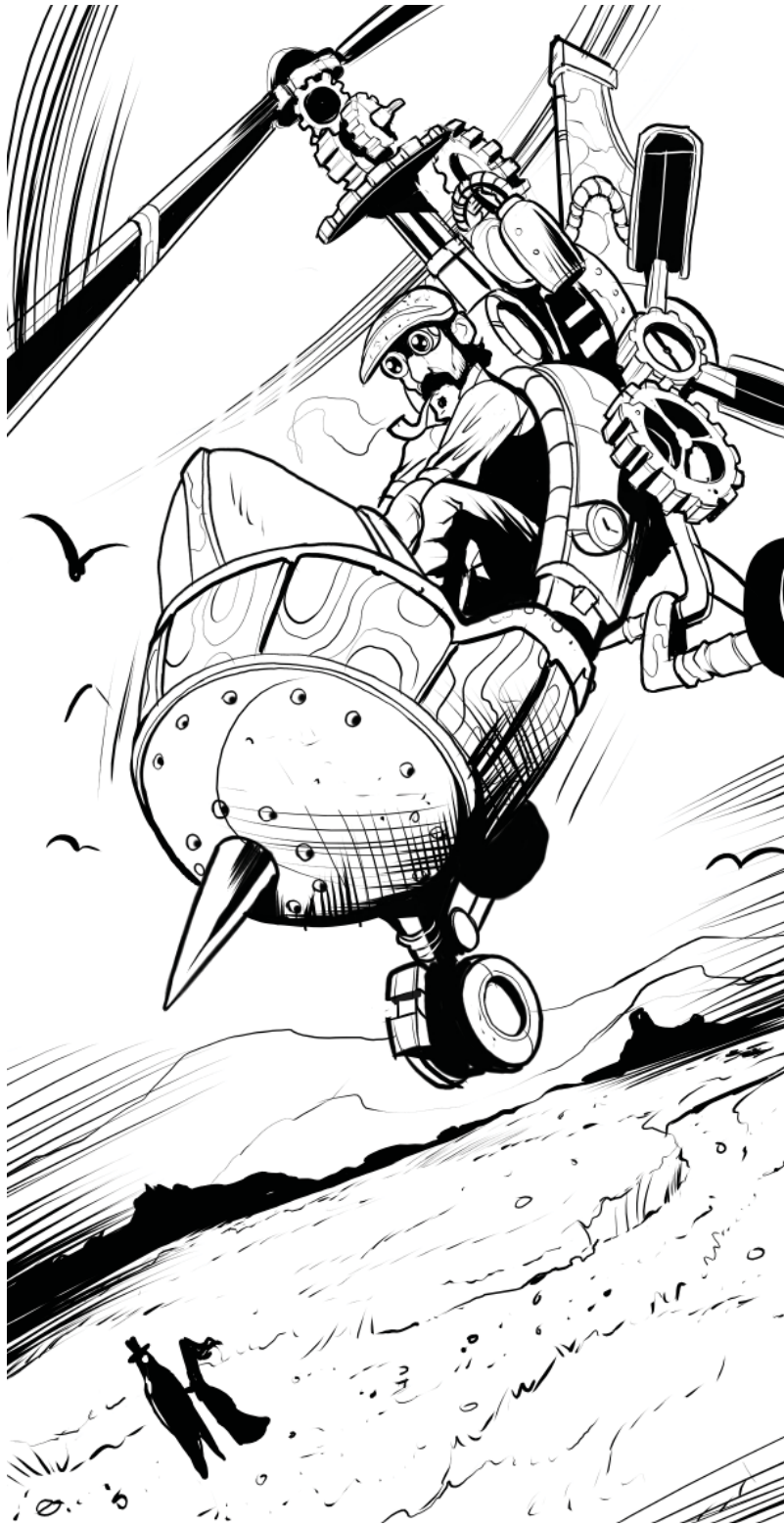
A failed check means that the operator is not able to squeeze more power from the engine. This outcome has no further effect beyond failing to deliver enough power to do what the operator wants to do. Success means that, during one round, the overtaxed power source provides the desired number of charges above its ordinary delivery rate.

Overtaxing an engine does not come for free. The machine's malfunction threshold increases by 1 and at the end of the round the operator rolls 1d20; if the result is within the malfunction threshold, he rolls for a malfunction

effect. The new malfunction threshold remains in place until the engine is fixed with a normal Craft check. The Difficulty for the power source is in its description.

DAMAGE AND REPAIR

A machine becomes damaged when it is attacked, when it suffers from a major malfunction or by simple wear and tear. On each day on which an amazing machine has unrepaired damage and is operated anyway, its malfunction threshold increases by 1. A simple Craft check returns the threshold to its normal levels. Note that this Craft check does not get rid of an increased malfunction threshold derived from failed checks during research and construction, nor from deliberate deficiencies. Leaving an amazing machine idle for a day without operating it at all does not increase its malfunction threshold. Craft check Difficulty = Difficulty of highest Craft check used to build the machine - 5. In addition to reducing the malfunction threshold, a successful Craft check to repair a machine removes one damage condition from the machine's damage track. Consult the Craft skill description for the costs for spare parts to make the repairs, using the closest Difficulty to that of the machine.



AN EXAMPLE OF AMAZING MACHINE CONSTRUCTION

1. Select Type. Professor Weatherby wants to invent a flying machine, some sort of amazing clockwork gyrocopter to propel him through the air at remarkable velocity. This is an amazing vehicle.

2. Select Size, Base Attributes and Options. Since it must only be large enough to accommodate one person, Prof. Weatherby decides that his gyrocopter will be Large. It has the following base attributes.

VEHICLE BASE ATTRIBUTES									
Size	CP	HS	Toughness	Armor	Maneuverability*	Speed	Turn Rate	Acc/Dec	Cargo
Large	50	10	+7	+1	Average (−1)	100 ft.	20 ft.	40/60	8 lb.

3. Select Materials. To help keep costs down, Prof. Weatherby is going to construct the body of his gyrocopter from wood. That is an inert organic material, which has no effect on the CP of the machine; they remain at 50. The armor bonus for inert organics is +3, which stacks with the base armor bonus of a Large machine for a total armor bonus of +3.

4. Install Features and Deficiencies. This is to be an agile flying machine that Prof. Weatherby can turn off by applying a brake to the spinning gears that power it. It is made of wood, which has its own inherent drawbacks, and the further disadvantage of requiring some time for the rotor blades to reach sufficient speed to propel the craft skyward. The good Professor selects the following features: Aerial Movement (gyrocopter, +7 CP and takes up 1 HS), Energy Conservation, Maneuverable (to Good, +3 CP), Flammable (wood, −3 CP), and Start-Up Time (1 minute, −1 CP). The vehicle's current CP is now $50 + 7 + 3 - 3 - 1 = 56$. He has spent 1 of the vehicle's 10 Hard Slots.

5. Install Power Source. Prof. Weatherby has decided that his gyrocopter will be powered by a highly efficient clockwork mechanism, transferring power from a tightly-wound spring to a system of intricate gears, cogs, and flywheels. Since it is a Large vehicle, its engine does not have any increase in its cost or Craft Difficulties. It has a separate Purchase Difficulty of 24, and takes up 2 more of the vehicle's 9 remaining Hard Slots. The clockwork engine holds 45 charges total, and can deliver 5 charges per round. Since Aerial Movement only expends 3 charges per hour, the engine delivers more than enough power to keep the gyrocopter airborne.

POWER SOURCES				
Power Source	HS	Purchase Difficulty	Craft (Build) Difficulty	Craft (Repair) Difficulty
Clockwork Power	2	24	Mechanical, 20	Mechanical, 15

6. Calculate Derived Values. The features and deficiencies for the Professor's gyrocopter make its total CP 56, and leaves it with 7 Hard Slots. Professor Weatherby converts the remaining Hard Slots into storage space, allowing him to stow up to 56 pounds of cargo. This is intended to be a personal conveyance, not a war machine, so the good Professor doesn't see the need to take up the remaining Hard Slots with weapons, extra armor plating, or other needless contraptions.

PROFESSOR WEATHERBY'S AMAZING CLOCKWORK GYROCOPTER										
Size	CP	HS	Defense	Toughness	Armor	Maneuverability*	Speed	Turn Rate	Acc/Dec	Cargo
Large	56	7	8	+7	+3	Good (−1)	100 ft.	20 ft.	40/60	8 lb.

7. Calculate CP. Professor Weatherby's Amazing Clockwork Gyrocopter has a total CP of 56, adding in all of its special features and deficiencies.

8. Calculate Cost and Weight. The weight of the craft is unimportant, as weight only applies to equipment and weapons. However, its total purchase Difficulty is $56/2.5 = 22$. The purchase Difficulty for raw materials, then is 19. Separately, the cost for the clockwork power supply is 24.

9. Research, Design and Construction Checks. Professor Weatherby has Craft (mechanical) +8, Craft (structural) +5, and Knowledge (physical sciences) at +8. He also has the Inventor feat, which is required in order for him able to create amazing machines. The Professor's flying conveyance has the following features and deficiencies:

Aerial Movement: Knowledge (physical sciences) +2, Craft (mechanical) +3

Energy Conservation: Craft (mechanical) +1

Maneuverable: Knowledge (physical sciences) +2, Craft (structural) +2

Flammable: Craft (structural) -4

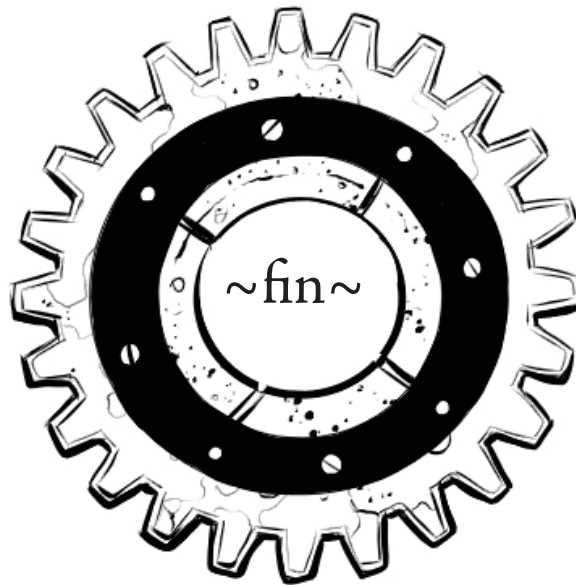
Start-Up Time: Craft (mechanical) -2

Researching the science behind the gyrocopter requires a Difficulty 14 Knowledge (physical sciences) check and 3 weeks of work (1 week per 5 points of Difficulty, rounded up). This is derived from the base of 10 + 2 for Aerial Movement +2 for Maneuverable. During the research phase, he rolls a 16, for a total of 24. Since that is 10 points higher than the Knowledge check Difficulty, he manages to shave 10 days from his research. He was just brushing up on the principles of flight and physics. A task that would have taken a lesser scientist over 20 days he completes in half the time. Now that he has the schematics for his remarkable conveyance, he retreats to his workshop to build it.

Building the clockwork power source requires a Difficulty 20 Craft (mechanical) check, which takes 4 weeks. He rolls a 10 on his Craft (mechanical) check to construct the clockworks, for a total of only 18, so there is a fly in the ointment somewhere. Since he failed by less than 5, the gyrocopter's malfunction threshold increases by 1 (it malfunctions on a roll of 1-2). He loses a week's work and rolls again. This time he discovers the improperly aligned cog that was confounding his efforts and rolls a total of 23 to successfully build the clockworks in about a month (5 weeks - 3 days).

Building the craft prompts a flurry of activity in Professor Weatherby's workshop. He must make a Difficulty 7 Craft (mechanical) check, taking 2 weeks. This is derived from the base of 5 + 3 for Aerial Movement +1 for Energy Conservation -2 for Startup Time. He takes 10 on the check, for a total of 18. Since he succeeded the Difficulty by 11, he reduces his construction time from 2 weeks to 3 days. Next, he must make a Difficulty 3 Craft (structural) check, taking 1 week. This is derived from the base of 5 + 2 for Maneuverable -4 for Flammable. Again he takes 10, easily making the Difficulty with a total of 15 and thus reducing the time to the minimum of 1 day.

Thus, after 11 days of research and 36 days of construction, Professor Weatherby's Amazing Clockwork Gyrocopter is ready for its first flight.



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