The Imperial Age
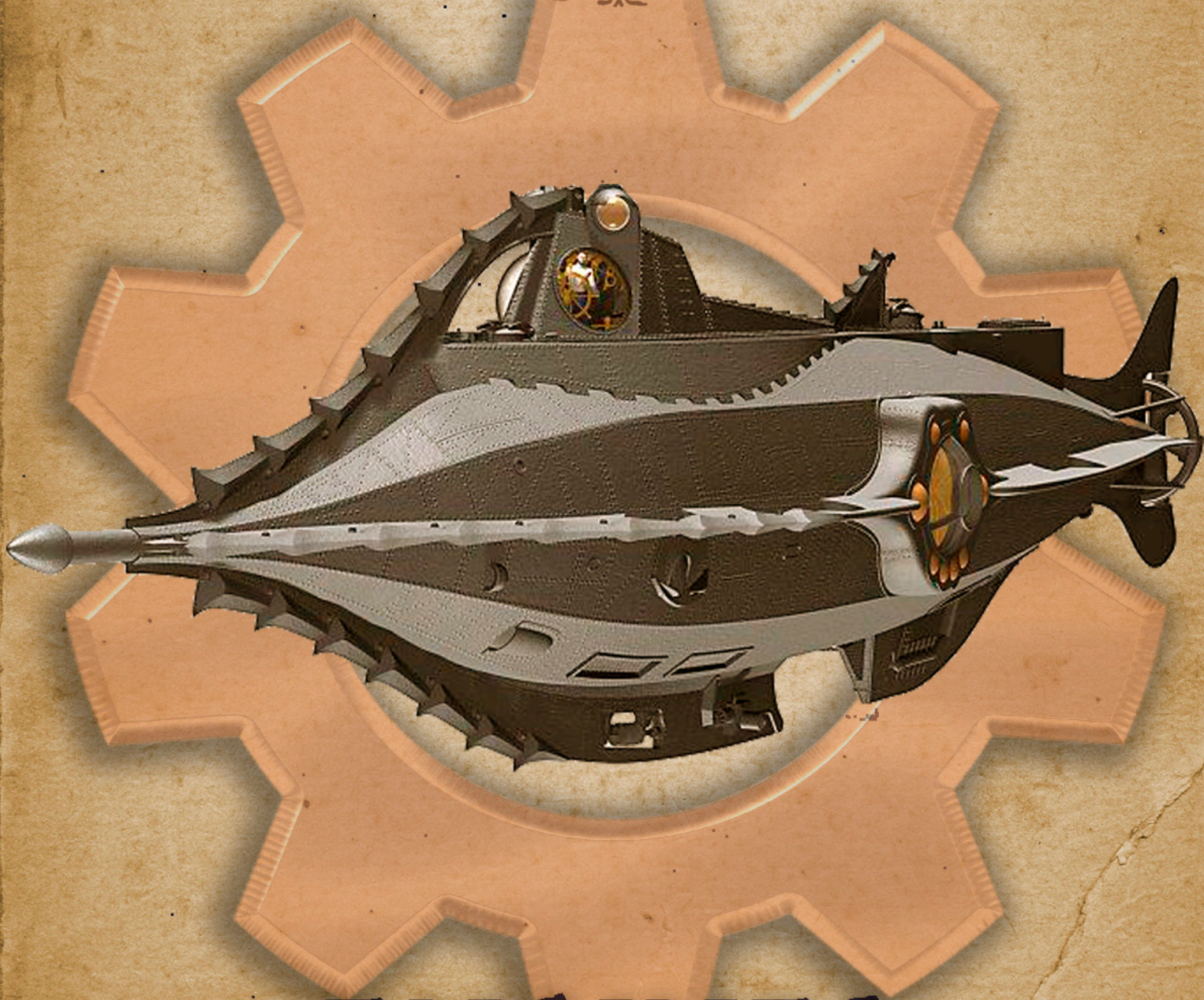

ENGINES

Introduction: Welcome to the Age of Steam

*T**he Imperial Age: Engines*** is designed to aid Game Masters who wish to add fantastic machines (known more commonly in the Imperial Age as "engines") in their Imperial Age campaigns. Fantastic engines fired the imaginations of 19th century authors such as Jules Verne and H.G. Wells, and adaptations of their works, especially those that imagine their machines in a retro style, have fired the imaginations of future authors, directors, and roleplayers. An entire subgenre of science fiction, steampunk, has arisen within the last two decades, applying cyberpunk style to the Victorian era.

This supplement gives the GM the tools he needs to design powerful engines of cogs and steam, as well as new advanced classes, skills, and feats suitable for an engines campaign. In addition, a new race, the intelligent automaton, is offered in the appendix.

- **Chapter One** provides a brief overview of how engines can be presented in an Imperial Age campaign

- **Chapter Two** provides new skills and feats suitable for an engines campaign. Each skill includes a list of classes that consider it a class skill.

- **Chapter Three** provides two new advanced classes: the Engineer and the Engine Pilot. The engineer designs and builds fantastic engines, while the engine pilot is trained to operate them.

Imperial Age: Engines

by
Walt Ciechanowski

- **Chapter Four** provides detailed rules on engine design.

- **Chapter Five** provides rules on creating weapons for human and engine use.

- **Chapter Six** takes a look at prosthetic engines that are designed to replace damaged limbs.

- **Chapter Seven** provides a list of sample engines that can be used in any engines campaign.

- **Chapter Eight** offers advice on creating and running engine-powered Imperial Age campaigns.

- **Appendix One** offers a list of real world inventions created during the Imperial Age.

- **Appendix Two** offers a new player character race, the intelligent automaton.

CHAPTER ONE:
Engines in the Imperial Age

While steam is the most popular method of propulsion in the Imperial Age, it is by no means the only method. Clockwork devices have existed long before steam engines, and both electricity and the internal combustion engine are in their infancy during the Imperial Age. Some early automobiles actually ran on steam or electricity rather than petrol. When designing Imperial Age engines, the Game Master should keep this in mind. A steam-driven prosthetic eye may sound ludicrous, but an electrical one may be more palatable.

Game Masters should also feel free to experiment with other types of energy, as long as they stay true to the spirit of the Imperial Age. Wind-powered airships might be possible, as well as a submarine that takes in water to power its generators. GMs wanting to go a bit further a field can build engines that run on sound waves or even fictional elements such as ether (the imagined gas in outer space) or any other fantastic resources left to the GM's imagination. GMs combining genres could even have giant automatons powered by magical gems or elementals.

VICTORIAN FLAVOUR
There are generally four words to define Victorian engines in relation to their modern counterparts: bulky, primitive, ornate, and dirty. Game Masters should always keep these four words in mind when designing engines for his Imperial Age campaign.

Victorian engines are bulky. Without modern materials and miniaturisation, Victorian engines tend to be larger than their modern equivalents. The use of steam requires large tubes to push pressure throughout the engine. Armour plates are denser and heavier.

Victorian engines are also primitive. They lack many of the features of their modern counterparts. A difference engine can easily be outperformed by most modern pocket calculators. A steam automobile will typically not have radios, air conditioning, and global positioning systems.

Victorian engines, especially those catering to passengers, tend to be ornate. Persian carpets line the floors of passenger locomotives and airship cabins. Beautiful paintings and gilded decorations line the walls. While modern machines emphasize utility and safety, Victorian engines emphasize elegance and style.

Finally, Victorian engines are dirty, belching smoke from coal smokestacks. A locomotive can be seen from miles away by the plume of smoke filling the air. Noise also accompanies this dirt, as the pressure of steam blows whistles and turns pistons.

Of course, there are always exceptions. GMs may allow for quieter engines run on electricity or magic. Steam locomotives may have air conditioning, and portable radios may be invented a few decades early.

ENGINE CAMPAIGNS

Historical Engines

In a historical engines campaign, only real world engines appear, and only at about the same time that they actually did appear. For example, a prototype steam-driven automobile might appear in a campaign set towards the end of the Imperial Age, but an airplane or steam-powered armour would not. Note that a historical engines campaign need not be historically accurate. For example, a PC engineer might invent the telephone a couple of years earlier than Alexander Graham Bell. An engineer working on an "iron horse" might be able to develop a gasoline-powered motorcycle in 1883. It is important to keep in mind that PC engineers will have to invent the tools to invent the tools. If an engine requires a new technology then that technology will have to be invented as well.

GMs will have to decide whether failed or abandoned real world inventions are fair game. In the real Imperial Age, Charles Babbage's calculation engine fell by the wayside, but an enterprising PC could develop a successful model. Should the GM allow something like this then the historical engines campaign may develop into a marvellous or fantastic engines campaign.

Marvellous Engines

The marvellous engines campaign is similar to the historical engines campaign in that most of the world may only have access to historical engines. There are, however, a few marvellous engines in the world for PCs to encounter. Two of Jules Verne's creations, the submarine Nautilus and the airship Albatross, were placed in settings where the rest of the world had normal technology. The plot of an entire adventure or campaign can be written around a single marvellous engine. A modern example of a marvellous engine campaign is the typical superhero movie, in which the rest of the world is normal but for a couple of costumed aberrations.

PC engineers may develop fantastic devices of their own of which the general public will react with awe or suspicion. A hissing engine belching steam may be looked upon as the Devil's work or dangerous experimentation. Such engineers may find themselves the subject of ridicule as acquaintances, friends, and relatives may try to sway them from their folly. Even working inventions may never be truly accepted by the general public; they are simply accidents waiting to happen.

Marvellous engines tend to be unique objects that are rarely replaced or mass-produced. Once the Nautilus sinks, there will never be another (at least for several years). If an evil engineer creates a suit of steam armour to commit crimes, he will never build an army of them (barring the occasional improved suit). A marvellous engines campaign that does allow for this will quickly slide into a fantastic engines campaign.

Fantastic Engines

The fantastic engines campaign pulls out all of the stops. Steam-powered airships ferry passengers from London to Paris. Naval wars are fought with submarines while lumbering automatons face off on the battlefield. Skyscrapers rise from major cities, piercing through the black smog of the factories. Wounded soldiers find their limbs replaced with steel. In many campaigns, these innovations largely leave the politics and cultures of the Imperial Age intact, with perhaps one or two exceptions (a small German state with advanced industrialization may resist unification; the Confederate States of America were able to use new weapons from Great Britain to secure their independence, etc.).

PCs could be British cavalry officers riding their armoured steam engine walkers against the Afghans northwest of British India. A scientific detective may search for clues in the factories of Paris. A monster hunter may have to pursue an unspeakable horror through the steam tunnels beneath Princeton University. In many ways, a fantastic engines campaign would appear to be a warped version of our own modern world, with towering skyscrapers, trans-world flights, and instant communication.

A TOUCH OF MAGICK

Fiction, especially the steampunk genre, tends to portray steam engines as capable of doing most anything. It's generally a question of style rather than substance, especially in visual mediums. Steam-driven airships, with smokestacks puffing away, turning pistons to make propellers spin aren't imagined because they are practical, but because it has visual appeal. It seems that any modern or near-future technology can be replicated as steam engines, as long as the object appears larger, bulkier, and filled with cogs and steam pipes.

In some cases, this is appropriate. Working steam-powered (and fully electric) automobiles were invented and available in the late 19th century. It's not a large stretch to armour a steam-powered vehicle and have steam-powered tanks rolling over European battlefields in the Imperial Age. It is conceivable that the airship, or zeppelin, could have been invented a decade or so earlier. London and New York did have steam-powered subway systems.

Other inventions are less practical. While some imagined vehicles flapping their wings as they flew across the sky or whipping their tails beneath the sea, modern technology uses no such mechanisms for airplanes, helicopters, or submarines (the wing-flapping ornithopter remains a curiosity). It is hard to imagine a feasible, steam-driven prosthetic arm without requiring a large harness that includes a bulky (and properly insulated) furnace strapped to one's back, never mind the impracticality of programming the arm to follow commands. The same goes for automatons (robots). How do they process visual information? How can they be programmed for anything but the most basic orders, and how can they adapt to new obstacles or situations?

In campaigns that include magick, miracles, or psychical powers, the answer is simple: F/X lends a helping hand. A prosthetic arm can be made feasible with an animate object spell and a magickal connection to its owner. Airships become more valuable in war if magic can make cloth as hard as steel. Automatons may have a ghostly operator.

It is up to the Game Master to determine whether magic works in his campaign and if it can be used with technology. Some possibilities are noted here.

• In a "segregated" campaign, magic and technology exist side by side, but neither can enhance the other. Magicians stick with traditional methods, materials, and rituals, while engineers build engines. Placing a rune or magical spell on an engine will not enhance its performance in any way. This may be due to the legends of "cold iron," in that magic is ineffective against or on metal objects.

• In a "melting pot campaign," magic and technology may be combined with no limits. An invisibility spell could make a steam automobile disappear. Bolt-action rifles could have their accuracy increased. A steam elemental may power an airship. The sky is the limit in this campaign, and the GM will have to be careful to ensure that the integrity of the campaign holds. See Appendix Three for details.

• In a "dampening campaign," magic and technology interfere with each other. Magicians must practice their rituals in the countryside, away from the cities and factories. The mere presence of a magician on a steam locomotive could cause the train to stop. An engineer that dabbles in magic may find her engines infected with gremlins. GMs looking for something different could have the PCs be agents of the Ministry of Progress, enforcing the Queen's edict on the outlawing of magical practice.
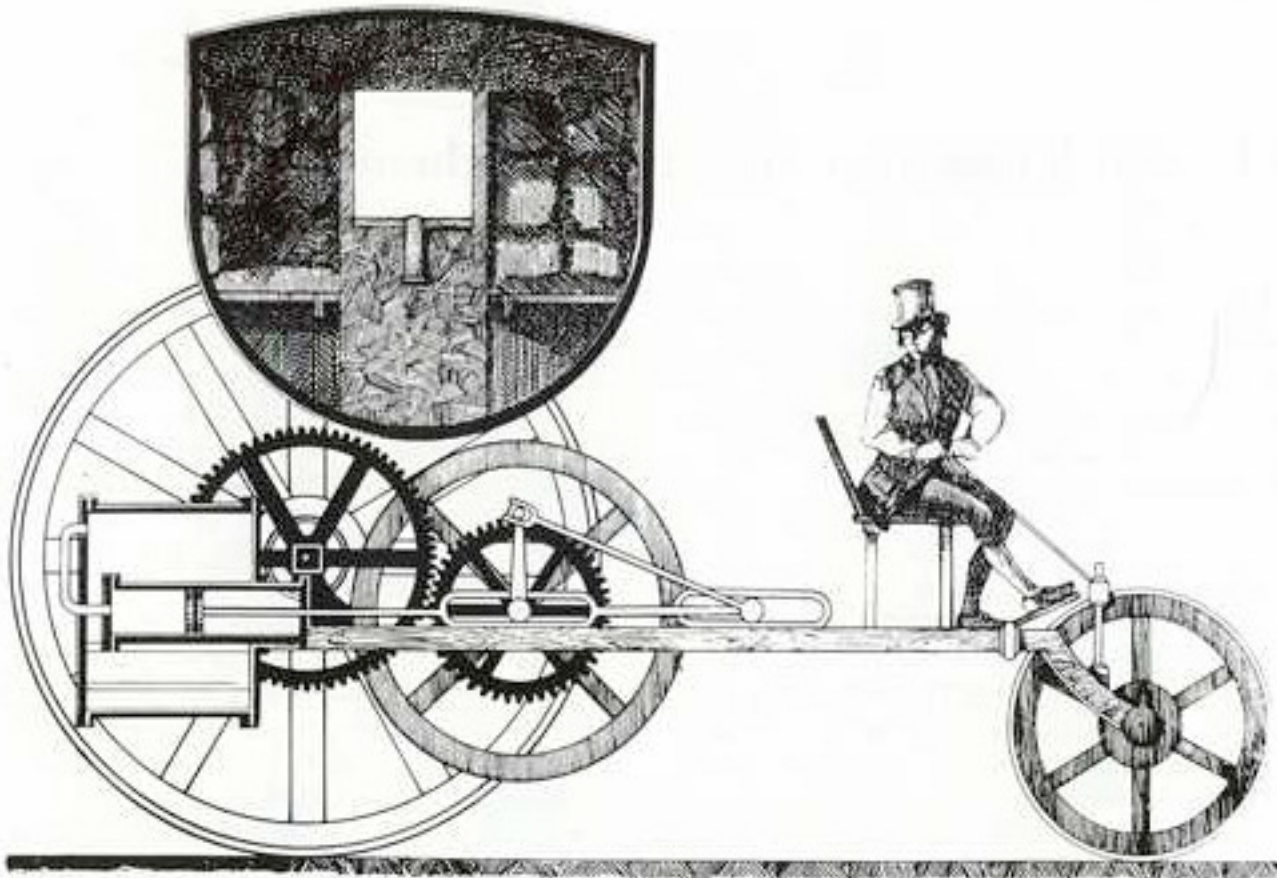
CHAPTER TWO: SKILLS & FEATS

An Imperial Age: Engines campaign may require some appropriate new skills and feats. Please note that some of these skills and feats depend on the type of Imperial Age: Engines campaign being run; this is noted where appropriate.

NEW SKILLS

The following is a list of new or modified skills pertinent to **Imperial Age: Engines**. Advanced classes from the Imperial Age line are noted with an asterisk (*). While appropriate skills are noted for Techies, it is suggested that the Techie not be used in Imperial Age campaigns (his role is taken by the Engineer).

Craft (engine) (Int)
Trained Only

Engine construction is only starting to hit its stride during the Imperial Age. As a result, the diversification of Craft (mechanical) and Craft (electrical) simply hasn't happened yet. Instead, a character with the Craft (engine) skill can produce all kinds of engines.

Engines are created according to the engine creation rules in this document. Engineers that build their own engines from raw materials pay less than the normal cost. An Engineer that makes a successful Craft (engine) check may purchase an engine at a –4 purchase DC discount (this represents a raw material cost of 25% of the total). An Engineer may use his engine point reserve to reduce the purchase DC cost prior to the discount.

Engineers do not add the government/military bonus to purchase DC even if they are building it for the government or military. They also do not add the bonus for custom-built engines.

Special: A character without an engine tool kit takes a –4 penalty on Craft (engine) checks.
A character with the Builder feat gets a +2 bonus on all Craft (engine) checks.

Class Skill: Fast, Tough, Smart, Engineer*, Techie

Craft (rune) (Int)
Trained Only

Craft (rune) enables a character to scribe runes. Without the Inscribe Rune feat, the character is unable to enchant the scribed runes (although a caster with the Inscribe Rune feat may enchant it). See the Inscribe Rune feat for the full use of this skill.

Class Skill: Smart, Dedicated, Acolyte, Mage, Occultist, Hermetic Disciple*, Spiritualist*

Disable Device (Int)

You can use this skill to disable an automaton or prosthetic attachment.

Check: Disabling an automaton is a full-round action and requires a successful Disable Device check (DC 30). The automaton must be pinned before the check can be made.

Disabling a prosthetic attachment is a full-round action and requires a successful Disable Device check (DC 30). The creature to which the prosthetic is attached must be pinned before the check can be made.

Special: A disabled automaton or disabled prosthetic attachment can be re-enabled with a successful Repair check (see Repair). This skill will work on intelligent automata.

Class Skill: Smart, Engineer*, Engine Pilot*, Techie

Fantastic Science (Int)

Trained Only

This is the Imperial Age version of the Computer Use skill. Use this skill to figure out how to use fantastic engines or shut them down.

Check: Most fantastic science is based on (or at least presented as) sound scientific theory. Because it is presumed to have a rational basis, a character with this skill should be able to examine an engine and recognize its key components, such as an on/off switch, the power source, how it is controlled, etc. These uses of the skill do not require a Fantastic Science check (though you might have to make a Search or Spot check if something is well-hidden on the object).

Understand Utility: This application of the Fantastic Science skill allows you to understand what the engine is capable of doing beyond the immediately obvious. The GM should set a Difficulty Class based on how complex or obscure the engine is. For example, a small steam engine attached to a bicycle would have an Easy DC (5). A warehouse-sized engine that calculates and categorizes the entire British population might be Formidable (DC 25) or Heroic (DC 30). You need to understand the utility of the engine before you can attempt to control or thwart it.

Control Engine: Once you understand the engine, you may attempt to control it. Again, the GM should set a DC based on the actual complexity of controlling the engine as well as any other circumstances that must be overcome (such as the original operator of the engine already working the controls).

Thwart Engine: Once you understand the engine, you may attempt to thwart it. The DC for the attempt is normally 15, although the GM may adjust this. Success does not destroy the engine; it merely gives you the information you need to thwart it. For example, you may learn that the death ray gun needs the quartz crystal to operate, but you're going to have to figure out how to pry it out of the gun.

A Fantastic science check to thwart an engine is only necessary if the weakness isn't obvious. For example, if a giant robot is approaching, you don't need a Fantastic Science check to figure out that destroying one of its legs is a good way to stop it.

Special: You can take 10 or 20 when using the Fantastic Science skill. You cannot take 20 if you need to make immediate assessments.

Time: Fantastic Science requires at least a full-round action. The GM may determine that some tasks require several rounds, a few minutes, or longer.

Class Skill: Smart Hero, Engineer*, Field Scientist, Techie.

Fig. 1.
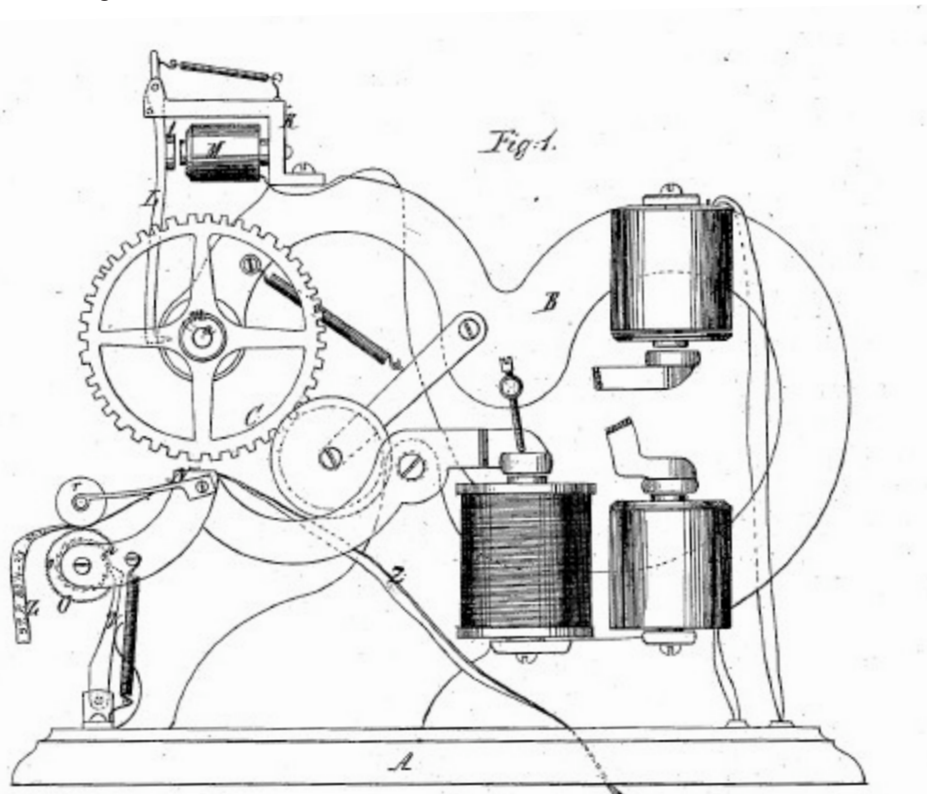
Knowledge (Fantastic Engines) (Int)

This category encompasses knowledge of new theories, experiments and technologies, as well as prominent researchers and scientists in these areas. In a Fantastic Engines campaign, this would merely be part of Knowledge (Technology). This skill replaces Knowledge (arcane lore) in most Imperial Age campaigns, although a campaign that includes magic would retain Knowledge (arcane lore) as a separate skill.

Class Skill: Dedicated Hero, Smart Hero, Scientific Detective*, Engineer*, Engine Pilot*, Field Scientist, Techie.

Repair (Int)

You can use this skill to repair engines (including prosthetics and automata). You can also use the Repair skill to safely remove the "brain" of a destroyed automaton.

Check: Repairing damage to an engine takes 1 hour of work, a mechanical tool kit, and a proper facility such as a workshop or hangar bay. (Without a tool kit, you take a –4 penalty on your Repair check.) At the end of the hour, make a Repair check (DC 20). Success repairs 2d6 points of damage. If damage remains, you may continue to make repairs for as many hours as it takes to restore the engine to full hit points.

The same rules apply to prosthetic attachments, except that each successful application of the Repair skill restores 1d10 points of damage (instead of 2d6), and the Repair check is more difficult to achieve (DC 30).

This skill may also be used to transplant the "brain" of a destroyed automaton into a similar but intact engine. See Automaton Resurrection for more information on automaton brain transplants.

Special: An engine that is reduced to 0 hp cannot be repaired. It can be salvaged for parts, however (see the Salvage feat description).

Class Skill: Strong, Smart, Engineer*, Techie*

AUTOMATON RESURRECTION

An automaton's core programming and experiences are contained within its central processor—its brain. The brain's "drive to survive" is determined by its force of personality, as represented by the automaton's Charisma.

Whenever an automaton is destroyed (reduced to 0 or fewer hit points), some brain degradation occurs. Each time its body is destroyed, the automaton suffers a permanent drain of 1 point of Charisma. The brain ceases to function and the automaton "dies" if its Charisma drops to 0 as the result of a permanent ability drain.

If an automaton has at least 1 point of Charisma left after its body is destroyed, its brain can be removed and transplanted into another automaton of the same size and frame. Removing an automaton's brain from a destroyed engine and installing it in a similar but intact engine requires 10 minutes of work, a mechanical tool kit, and a successful DC 20 Repair check. Not using a tool kit imposes a –4 penalty on the Repair check.

An automaton that gains a new body retains the memories of its previous "life," as well as any previously known skills. It also retains its original mental ability scores (subject to the Charisma loss). It also gains any physical abilities that are part of the new engine.

Advanced Automaton Operation

You have received advanced training or extensive practice in automata movement.

Prerequisite: Engine Operation.

Benefit: Choose a size of automaton (Large, Huge, Gargantuan, or Colossal). When you are operating an automaton of the chosen size, you gain a +1 dodge bonus to Defence. Furthermore, manoeuvre penalties for operating the automaton are 2 less than they would otherwise be (minimum penalty –0).

Armour Proficiency (Personal Armour)

You are proficient with personal armour.

Prerequisites: Armour Proficiency (light), Armour Proficiency (medium).

Benefit: When you wear personal armour, you may use personal armour without penalty.

Normal: A character not proficient with personal armour receives a –4 to all initiative and manoeuvre checks while wearing it.

Automaton Crush

You can hurl your automaton's body onto opponents to deal tremendous damage.

Prerequisite: Engine Operation.

Benefit: As an attack action, you can manoeuvre your automaton to jump or fall onto opponents, using the automaton's body to crush them. This attack is useful only against creatures at least two size categories smaller than your automaton. The base damage for a crush attack depends on your automaton's size category, as given below. Add 1.5 times your automaton Strength bonus to this base damage to determine the total damage for the attack.

Automaton Size	Damage
Large	2d6
Huge	2d8
Gargantuan	4d6
Colossal	4d8

A crush attack deals bludgeoning damage and affects as many creatures as can fit under your automaton's body. Each creature in the affected area must succeed on a Reflex save (DC 10 + your automaton's size modifier for grapple attacks). On a failure, the creature is pinned and automatically takes crush damage each round the pin is maintained.

Automaton Fling

You can pick up an opponent with your automaton and fling it.

Prerequisite: Engine Operation, at least one free automaton hand.

Benefit: Your automaton can make a grapple check at a –20 penalty against an opponent at least two size categories smaller than it. If the grapple succeeds, you can use an attack action to fling the held opponent on your next action. The range increment for the thrown foe is 10 feet, and the maximum range is 100 feet. A creature may be thrown horizontally or vertically. If thrown vertically, it takes normal falling damage. If thrown horizontally, it takes damage as though it had fallen half the distance thrown (rounded down), and you may apply your automaton Strength bonus to the damage.

Your automaton may also fling your opponent at another engine or creature. To do so, make an attack roll at a –4 penalty, with appropriate range penalties, against the target. If you hit, both the thrown creature and the target take the amount of damage that the thrown creature would have otherwise taken, as given above.

Automaton Sweep

You can use your automaton to wield improvised weapons and attack several spaces at once.

Prerequisite: Engine Operation, Power Attack, two free automaton hands.

Benefit: You can use your automaton's great size and strength, along with your own knowledge of balance and leverage, to pick up a heavy object (such as a large tree or boulder) and attack an area as an attack action. The area affected is a half-circle with a radius equal to your automaton's reach. This attack deals damage to all creatures two or more size categories smaller than your automaton within the area. The base damage dealt depends on your automaton's size, as given below. Add 1.5 times your automaton's Strength bonus to this base damage to determine the total damage for the attack.

Automaton Size	Damage
Large	1d6
Huge	1d8
Gargantuan	2d6
Colossal	2d8

Though it can deal significant damage, this form of attack is awkward and unbalancing. You take a –2 penalty to your automaton's Defence and on Reflex saves until your next turn.

Automaton Trample

Your automaton can knock down and crush opponents.

Prerequisite: Engine Operation, base attack bonus +4.

Benefit: When you attempt to overrun an opponent while operating an automaton, the target may not choose to avoid your automaton. If your automaton knocks down the target, your automaton may make one free slam attack against the target, gaining a +4 bonus on the attack roll because the target is prone.

Builder

This feat replaces the Builder feat in the SRD.

Benefit: Pick two of the following skills: Craft (chemical), Craft (engine), and Craft (structural). You get a +2 bonus on all checks with those skills.

Special: You can select this feat twice. The second time you may apply it to skills you did not take previously. You may also take Craft (engine) a second time for a +4 bonus.

Collector

You have acquired various scraps and materials useful in the construction of new engines.

Benefit: You gain 200 engine points to use as you wish. You may save them, pour them into one engine, or spread them out among multiple engines.

Special: This feat may be taken multiple times. Each grants an additional 200 engine points.

Craft Prosthetics

You can construct engine-driven prosthetic attachments.

Prerequisites: Craft (engine) 10 ranks, Knowledge (life sciences) 5 ranks.

Benefits: You can build prosthetic attachments. You must first make a Wealth check against the purchase DC of the attachment (to acquire the necessary components), then invest 24 hours in its construction. At the end of that time, you must succeed at a Craft (engine) check (DC 30).

If both Craft checks succeed, the prosthetic attachment functions properly and can be installed at any time (see the Prosthetic Surgery feat). If either or both checks fail, the attachment's design is flawed; another 24 hours must be spent fixing the problems, and two new checks must be made at the end of that time.

Engine Operation

The character is proficient with operating engines.

Prerequisite: Drive 4 ranks or Pilot 4 ranks (as appropriate)

Benefit: The character takes no penalty on driving/piloting or attack rolls when operating the engine.

Normal: Characters without this feat take a –4 penalty on Pilot/Drive checks made to operate an engine that falls in any of these classes, and on attacks made with engine weapons.

Engine Weapon Proficiency

You know how to accurately fire your engine's weapons.

Prerequisite: Engine Operation.

Benefit: You no longer suffer the standard penalties on attack rolls while you're in your engine. You can use any feats that refer to firearms with your ranged engine weapons.

Normal: Characters without this feat take a –4 penalty on attack rolls made while in an engine cockpit. Furthermore, they cannot apply firearm feats to an engine's ranged weapons.

Gearhead

This feat replaces the Gearhead feat in the SRD.

Benefit: The character gets a +2 bonus on all Fantastic Science checks and Repair checks.

Special: Remember that the Repair skill can only be used untrained in certain situations.

Heart of Coal

You can have more prosthetic attachments than normal without suffering ill effects.

Benefit: The maximum number of prosthetic attachments you can have without suffering negative levels increases by 1.

Special: You can gain this feat multiple times. Its effects stack.

Inspired

You are a natural genius. Your mind is full of amazing ideas and fantastic designs for machines and steamworks, and you can see methods and solutions for any challenge put before you.

Prerequisites: Intelligence 13+.

Benefit: A character with the Inspired feat can benefit from a flash of inspiration and ingenuity once per day, allowing them to take 20 on a skill check once per day without having to spend a longer period of time that would be needed to take the check normally.

Inscribe Rune

You can inscribe runes on engines, granting them magical powers.

Prerequisite: Caster level 3

Benefit: You can inscribe a rune of magical energy on an engine. You may inscribe a rune of any spell that you can normally cast. The cost of such a rune (including ritual materials) is the purchase DC of the corresponding spell-like ability quality –4. You must also make a Craft (rune) check at 15 + spell level + caster level. If the check fails, you still pay the purchase DC but the rune has no effect.

Master Engineer

You are adept at creating mastercraft engines (and other equipment).

Prerequisite: Craft (engine) 8 ranks

Benefit: When successfully completed, a mastercraft engine provides an equipment bonus on skill checks made to use the engine. A mastercraft weapon provides a bonus on attack or damage rolls (your choice). A mastercraft suit of armour improves the armour's equipment bonus to Defence. In each case, the bonus can be +1, +2, or +3, and no single object can have more than one mastercraft feature. (For instance, you cannot build a mastercraft weapon that gains a bonus on attack rolls and damage rolls.)

On average, it takes twice as long to build a mastercraft engine as it does to build an ordinary object of the same type. The cost to build a mastercraft engine is equal to the purchase DC for the object (or its components) + the bonus provided by the mastercraft feature (+1, +2, or +3).

In addition to the Wealth check, you must also pay a cost in experience points equal to 250 _ the bonus provided by the mastercraft feature. The experience points must be paid before making the Craft check. If the expenditure of these experience points would drop you below the minimum needed for your current level, then the experience points can't be paid and you can't make the mastercraft object until you have sufficient experience points to remain at your current level after the expenditure is made.

Apply the following modifiers to the Craft check DC for mastercraft features:

Mastercraft Feature	DC Modifier
Mastercraft (+1)	+3
Mastercraft (+2)	+5
Mastercraft (+3)	+10

You can add the mastercraft feature to an existing engine or a lower-grade mastercraft engine by making a Wealth check and then making the Craft check as though you were constructing the object from scratch.

Prosthetic Surgery

You can graft engine-driven prosthetic attachments onto living tissue as well as safely remove them.

Prerequisites: Treat Injury 8 ranks, Surgery.

Benefit: You can make a Treat Injury check (DC 20) to install or remove a prosthetic attachment. If you do not have a surgery kit or access to a medical facility, you take a –4 penalty on the check. Prosthetic surgery takes 1d4 hours.

The consequences of failure are severe: If your check result fails by 5 or more, the installation or removal of the prosthetic attachment causes undue physical trauma to the patient, who suffers 1d4 points of Constitution damage. If the check result fails by 10 or more, the Constitution damage is treated as Constitution drain instead.

A character that undergoes prosthetic surgery (successful or not) is fatigued for 24 hours. Reduce this time by 2 hours for every point above the DC the surgeon achieves. The period of fatigue can never be reduced below 6 hours in this fashion.

Normal: Characters without this feat take a –8 penalty on Treat Injury checks made to perform prosthetic surgery (–4 penalty if they have the Surgery feat).

Salvage

You can salvage electrical and mechanical parts from destroyed engines.

Benefit: Salvaging a destroyed engine takes time, as noted in Table: Salvage. 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.

TABLE: SALVAGE

Salvaged Engine	Time Required	Search Check DC	Wealth Increase
Vehicle			
Huge or smaller	30 min.	15	+1
Gargantuan	1 hr.	20	+2
Colossal	3 hr.	25	+3
Automaton/Personal Armour			
Tiny or smaller	10 min.	20	+1
Small to Large	30 min.	25	+2
Huge or Gargantuan	1 hr.	30	+3
Colossal	3 hr.	35	+4
Prosthetic Attachment			
Any	10 min.	15	+1

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

CHAPTER THREE:
ADVANCED CLASSES

T his chapter presents two Advanced Classes for use in your *Imperial Age* campaigns: The Engineer, who maintains, repairs, and builds engines, and the Engine Pilot, trained to manoeuvre these steam and iron vehicles.

ENGINEER

The Engineer maintains, repairs, and builds engines. In a historical engines campaign, he is the one that keeps the locomotives maintained. In a marvellous engines campaign, he is a specialist with one or more marvellous engines. A fantastic engines campaign sees the Engineer come full circle, as fantastic engines are routine.

The Engineer replaces the Techie in the core rules.

Requirements
To qualify to become an Engineer, a character must fulfil the following criteria:

Skills: Craft (engine) 6 ranks, Knowledge (fantastic science) 6 ranks, Repair 6 ranks
Feats: Gearhead

Class Information
Hit Die: The Engineer gains 1d8 hit points per level. The character's Constitution modifier applies.

Action Points: The Engineer gains a number of action points equal to 6 + one-half his character level, rounded down, every time she achieves a new level in this class.

Class Skills: The Engineer's class skills are as follows: Concentration (Con), Craft (any)(Int), Decipher Script (Int), Demolitions (Int), Disable Device (Int), Drive (Dex), Fantastic Science (Int), Knowledge (Any) (Int), Pilot (Dex), Profession (Wis), Read/Write Language (none), Repair (Int), Research (Int), Search (Int), Speak Language (none).

Skill Points at Each Level: 8 + Int Modifier

THE ENGINEER

Level	BAB	Fort	Ref	Will	Special	Def	Reputation
1	+0	+0	+0	+2	Engine Reserve	+0	+0
2	+1	+0	+0	+3	Jury-Rig +2	+1	+0
3	+1	+1	+1	+3	Bonus Feat	+1	+1
4	+2	+1	+1	+4	Sabotage	+1	+1
5	+2	+1	+1	+4	Quick Craft	+2	+1
6	+3	+2	+2	+5	Bonus Feat	+2	+2
7	+3	+2	+2	+5	Jury-Rig +4	+2	+2
8	+4	+2	+2	+6	Quick Craft	+3	+2
9	+4	+3	+3	+6	Bonus Feat	+3	+3
10	+5	+3	+3	+7	Superior Repair	+3	+3

Class Features

The following features pertain to the Engineer advanced class.

Engine Reserve: An Engineer tends to collect various components, scrap metal, and other odds and ends that can be incorporated into new engine designs. When creating a new engine, the Engineer may use some of the points in his engine reserve to reduce the engine point cost.

The Engineer receives 200 engine points per class level. Once these points are spent, they are gone forever. At the GM's option, an Engineer may recoup any points used in an engine that has been destroyed.

Jury-Rig: At 2nd level, the Engineer gains a +2 competence bonus on Repair skill checks made to attempt temporary or jury-rigged repairs. See the Repair skill for details on jury-rigging. At 7th level, this competence bonus increases to +4.

Bonus Feats: At 3rd, 6th, and 9th level, the Engineer gets a bonus feat. The bonus feat must be selected from the following list, and the Engineer must meet all the prerequisites of the feat to select it.

Cautious, Collector, Craft Prosthetics, Educated, Engine Operation, Gearhead, Inspired, Master Engineer, Personal Firearms Proficiency, Prosthetic Surgery, Salvage, Studious, Vehicle Expert.

Sabotage: At 4th level, the Engineer can sabotage an engine so that it operates poorly. The Engineer must succeed on a Disable Device check (DC 20) to accomplish the downgrade, and sabotaging a mastercraft object is slightly harder (DC 20 + the mastercraft object's bonus feature). Noticing the Engineer's handiwork without first testing the sabotaged engine requires a successful Search check (DC = the Engineer's Disable Device check result). Fixing the sabotaged engine requires a successful Repair.

Sabotage Engine: As a full-round action, the Engineer can reconfigure an engine so that anyone who uses it suffers a penalty equal to the Engineer's class level on skill checks made to use the engine.

Sabotage Weapon: As a full-round action, the Engineer can sabotage a weapon so that it misfires or breaks the next time it is used. A sabotaged weapon cannot be used effectively until repaired. This use of sabotage also applies to engine-mounted weapons.

Quick Craft: At 5th level, an Engineer learns how to craft ordinary scratch-built engines and structural objects more quickly than normal. When using the Craft (engine) or Craft (structural) skill to build an ordinary scratch-built item, the Engineer reduces the building time by one-quarter. At 8th level, the Engineer reduces the building time of ordinary objects and engines by half.

Superior Repair: At 10th level, an Engineer learns improved ways of repairing engines. An Engineer with a mechanical tool kit and an appropriate facility (a workshop, garage, or hangar) can repair damage to an engine. (Without a mechanical tool kit, the Engineer takes a –4 penalty on the Repair check.) With 1 hour of work, the engineer can restore a number of hit points based on his Repair check result, as shown in Table: Superior Repair. If damage remains, the Engineer may continue to make repairs for as many hours as needed to fully repair the damaged engine.

TABLE: SUPERIOR REPAIR

Repair Check Result	Damage Repaired
Less than 20	None
20–29	2d6 + Engineer class level
30–39	3d6 + Engineer class level
40+	4d6 + Engineer class level

Engine Pilot

Once Engineers build fantastic engines, someone must pilot them. While many Engineers test and pilot their own creations, patrons and sponsors are a bit hesitant to risk these genius' lives on the battlefield. The Engine Pilot is trained to manoeuvre these steam and iron vehicles. While many of these individuals pilot a single type of engine most of their lives, a good Engine Pilot is a generalist.

Requirements

To qualify to become an Engine Pilot, a character must fulfil the following criteria:

Skills: Drive 6 ranks, Pilot 6 ranks
Feats: Engine Operation

Class Information

Hit Die: The Engine Pilot gains 1d10 hit points per level. The character's Constitution modifier applies.

Action Points: The Engine Pilot gains a number of action points equal to 6 + one-half his character level, rounded down, every time she achieves a new level in this class.

Class Skills: The Engine Pilot's class skills are as follows: Bluff (Cha), Drive (Dex), Fantastic Science, Knowledge (current events, engines, popular culture, streetwise) (Int), Navigate (Int), Pilot (Dex), Profession (Wis), Read/Write Language (none), Repair (Int), Sleight of Hand (Dex), Speak Language (none), Spot (Wis), Tumble (Dex).

Skill Points at Each Level: 5 + Int Modifier
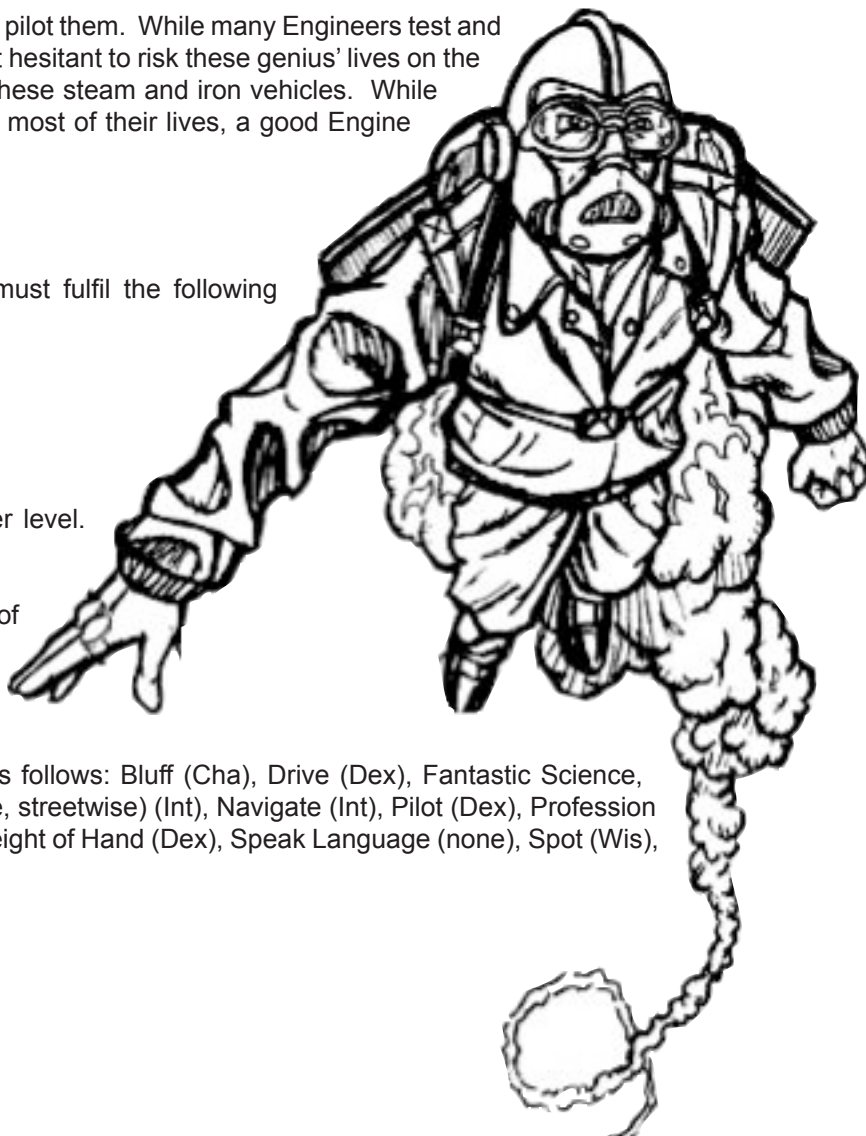
THE ENGINE PILOT

Level	BAB	Fort	Ref	Will	Special		Def
Rep							
1	+0	+2	+2	+2	Combat Ace +1	+1	+0
2	+1	+3	+3	+3	Skilled Pilot +2	+1	+0
3	+2	+3	+3	+3	Bonus Feat, Vehicle Evasion	+2	+1
4	+3	+4	+4	+4	Combat Manoeuvres	+2	+1
5	+3	+4	+4	+4	Combat Ace +2, Skilled Pilot +4	+3	+1
6	+4	+5	+5	+5	Bonus Feat, Improved Gunner	+3	+2
7	+5	+5	+5	+5	Defensive Piloting	+4	+2
8	+6	+6	+6	+6	Greater Evasion, Skilled Pilot +6	+4	+2
9	+6	+6	+6	+6	Bonus Feat, Combat Ace +3	+5	+3
10	+7	+7	+7	+7	Master Gunner	+5	+3

Class Features

The following features pertain to the Engine Pilot advanced class.

Note: *Many of the class features below involve bonuses to Drive and Pilot. During the game, the Engine Pilot should use whichever skill is appropriate rather than which has the higher bonus.*

Combat Ace: An Engine Pilot is trained to excel in vehicle combat. When making ranged attacks from a vehicle (whether with a mounted or personal weapon), a pilot gains a bonus on attack rolls. The bonus is +1 at 1st level, +2 at 5th level, and +3 at 9th level.

Skilled Pilot: With extensive training and natural talent, an Engine Pilot is recognized as an expert in the operation of steam-powered vehicles. Beginning at 2nd level, an Engine Pilot gains a +2 competence bonus to all Drive and Pilot checks. As the Engine Pilot's training progresses and he gains new experience, this bonus increases to represent this improved level of skill. At 5th level the bonus increases to +4, and at 98h level it increases to +6.

Bonus Feats: At 3rd, 6th, and 9th level, the Engineer gets a bonus feat. The bonus feat must be selected from the following list, and the Engineer must meet all the prerequisites of the feat to select it.

Advanced Firearms Proficiency, Advanced Automaton Operation, Automaton Crush, Automaton Fling, Automaton Operation, Automaton Sweep, Automaton Trample, Automaton Weapon Boost, Burst Fire, Cleave, Combat Expertise, Dead Aim, Dodge, Double Tap, Far Shot, Force Stop, Great Cleave, Improved Sunder, Mobility, Personal Firearms Proficiency, Point Blank Shot, Power Attack, Precise Shot, Shot on the Run, Skip Shot, Strafe, Stun Engine, Thruster Blast, Weapon Focus (engine weapon only).

Vehicle Evasion: With training and practical application, an Engine Pilot becomes incredibly adept at maneuvering his craft through combat zones while avoiding large explosions and other such hazards associated with aerial combat. At 3rd level, if his craft is exposed to any effect that normally allows a Reflex saving throw for half damage, an Engine Pilot may use a Drive or Pilot check instead of the Reflex saving throw to check for half damage.

Combat Manoeuvres: Gaining experience as a combat ace, an Engine Pilot develops the skills necessary to ensure his survival on the battlefield and in the skies. At 4th level, an Engine Pilot's craft gains a +2 dodge bonus to Defence while engaged in combat.

Improved Gunner: As an experienced mechanized warrior, an Engine Pilot learns to fire with pinpoint accuracy and to gain a tactical advantage in combat. Beginning at 6th level, an Engine Pilot deals 1d6 points of bonus damage with any successful ranged attack made with a mounted vehicle weapon.

Defensive Piloting: Beginning at 7th level, an Engine Pilot's vehicle gains a +2 bonus to all Fortitude saving throws and gains 2d6 temporary hit points as long as the Engine Pilot operates it.

Greater Evasion: With continued training and practical application, an Engine Pilot becomes more adept at maneuvering his craft through combat zones and avoiding hazards in aerial combat. At 8th level, if an Engine Pilot and his craft are exposed to any effect that normally allows a Reflex saving throw for half damage, the craft suffers no damage with a successful save. The Engine Pilot can use his vehicle evasion ability to make a Drive or Pilot check instead of a Reflex save.

Master Gunner: As a well-trained and seasoned ace, at 10th level an Engine Pilot becomes a master gunner. His damage bonus gained from Improved Gunner increases to +2d6.

Chapter Four:
Engine Design

This Chapter is the heart of *Imperial Age Engines*. It provides detailed rules for constructing engines of all shapes and sizes. A checklist is provided at the beginning of this chapter to provide guidance for the engine creation process. While this list might seem daunting at first, engine creation is a relatively straightforward process that will result in the familiar vehicle stat block found in the core book, along with an appropriate purchase DC.

The most important "pre-step" to engine design is concept. It helps to have an idea of the resulting engine before starting the process of designing it. Imperial Age Engines is not limited to weight restrictions, equipment slots, or any other hard limitations. A GM can design exactly the sort of engine he wants knowing that it will be reflected in the purchase DC. This is in line with the vehicle descriptions in the core book.

Basic Steps to Building an Engine

1. **Choose Engine Type.**
2. **Choose Size.**
3. **Choose Power Source.**
4. **Choose Hit Points.**
5. **Choose Occupants and Cargo.**
6. **Choose Defence and Hardness.**
7. **Choose Strength, (if applicable).**
8. **Choose Speed.**
9. **Choose Initiative.**
10. **Choose Manoeuverability**
11. **Choose Special Abilities.**
12. **Choose Defects.**
13. **Design Weapons.**
14. **Add up all Engine Point costs. This gives the actual cost.**
15. **Determine what Skills or Feats are needed to control the engine.**
16. **Convert the final cost into a purchase DC.**
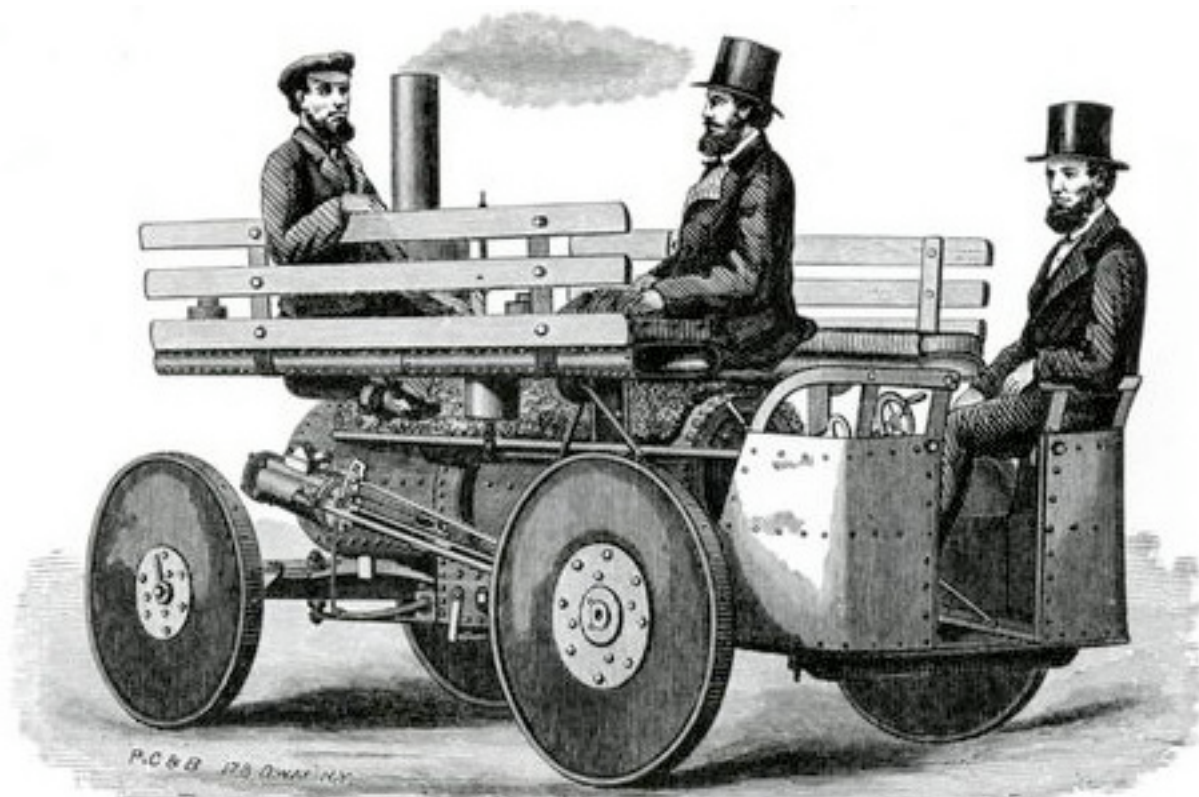
Engine Type

There are four broad types of engine: analytical engine, automaton, personal armour, or vehicle.

Analytical Engine

Charles Babbage designed the difference engine (essentially what we would call a calculator today) and tinkered with a programmable analytical engine (a computer). These machines would be relatively large (a difference engine built from his plans in the late 1980s stood eight feet tall and weighed over 15 tons). In the real world, Babbage's inventions would not see fruition until the mid-20th century. In a fantastic engine campaign, however, his engines could be built and improved upon. A steampunk campaign may even have a self-aware analytical engine in charge of the British Empire.

Imperial Age analytical engines would be monstrous affairs, often taking up a large room or even a city block. They are usually immobile (as mobile analytical engines are considered automata or vehicles). Most analytical engines output information on paper, but some advanced engines may actually speak (processing the output in a series of bells, whistles, and vibrations to mimic human speech).

Automaton

An automaton is normally a piloted humanoid or animal-shaped vehicle that is larger than its pilot and has creature-like agility and/or manipulatory ability, via means of limbs and/or a flexible body and jaw. An automaton could be anything from a humanoid fighting machine to a mechanical sea monster. If it stays on the ground, and moves at less than High Speed (750'/round), an automaton has the advantage that it moves like a character or creature — there is no need to use the vehicle movement rules when it goes into combat.

Some Imperial Age campaigns may allow for self-operating automata, such as domestic servants or soldiers. These automata are not operated by a crew but have the artificial intelligence quality instead. Such automata are still built as engines, but can be of much smaller size than a crew-operated automaton

Personal Armour

Personal armour is a bulky exoskeleton that completely encases the wearer. Personal armour has no room for extra gear: the wearer must wear limited clothing (no extra armour) and bring no extra equipment. Getting out of personal armour can be embarrassing and even shameful in mixed company.

Vehicle

A vehicle is a piloted engine that is notably larger than its pilot and not classed as an automaton. Vehicles include everything from ordinary wagons and cars to ironclads and airships. A machine with a simple bulldozer blade or tow arm is still considered a vehicle rather than an automaton, since it lacks any flexibility of movement. Since vehicles do not acquire Strength they are cheaper than automaton.

Patented Feb. 26, 1889.
Inventor:
No. B. Smith
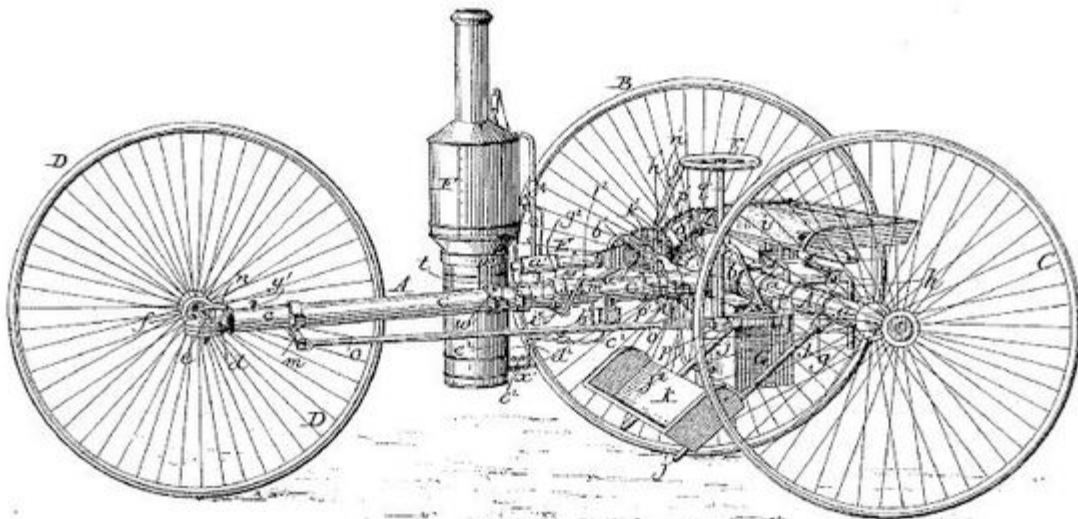
Engine Size

The next step is to determine the actual size of the engine. Personal armour must be the same size as the intended wearer (i.e. the same vehicle size as personal size). In most cases, this will be medium, but some Imperial Age campaigns may have wearers of different races. Automata and vehicles must be at least one category larger than the largest being it is intended to carry. Thus, an automaton or vehicle big enough for a human to ride inside must be at least large. If the wearer will ride on the engine, then it can be up to two sizes smaller.

Specify its dimensions (tall) or (long). Most vehicles are long; personal armour and automata tend to be tall if humanoid, or long otherwise. Specify the engine's longest dimension (height if tall, length if long) and empty weight, choosing from within the available ranges given on the Size and Weight chart.

Size and Weight Chart

Size	Example	Modifier	Dimensions	Empty Weight
Fine	Coin	+8	up to 1"	up to 1/2 lb.
Diminutive	Pocket Watch	+4	1-6"	1/4 to 10 lbs.
Tiny	Doll	+2	6"-1'	5 to 50 lbs.
Small	Wheelbarrow	+1	1-4'	25 to 250 lbs.
Medium	Bicycle, Personal Armour	+0	4-8'	100 lbs. to 1 ton
Large	Hansom	-1	8-16'	1/2 to 4 tons
Huge	Coach	-2	16-32'	2 to 40 tons
Gargantuan	Heavy tank	-4	32-64'	10 to 400 tons
Colossal	Zeppelin	-8	64'+	50+ tons

The modifier is the size modifier of the engine. A good way to estimate weight for very large engine:
weight in tons = (longest dimension x longest dimension x longest dimension) divided by 1,000.

Power Source

All engines must have a power source. This could be steam, clockwork, wind, electricity, or anything else that the GM can imagine. GMs running F/X campaigns could have necromantic, crystal, or even psychically powered engines. Power source is a matter of style and costs no points. An engine is assumed to have unlimited power unless modified by the reduced endurance defect. Other defects also contribute to shaping the engine, such as restricted path (for rail-bound locomotives) and noisy (for most steam engines).
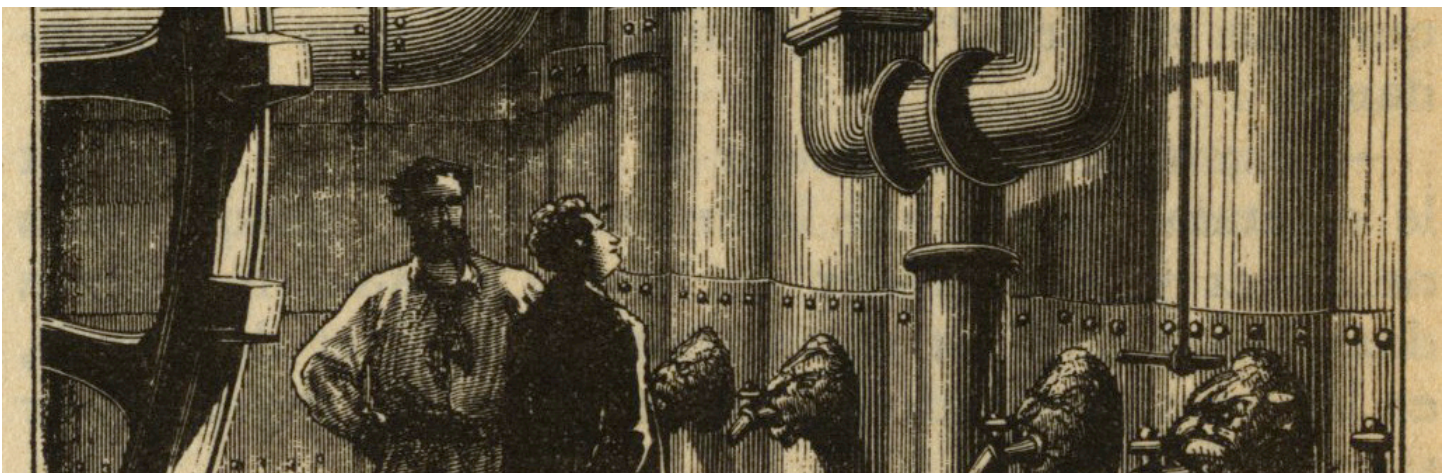
Hit Points

Hit Points measure the damage a engine can sustain before being knocked out of action. The "base" column lists the default values.

Engine Hit Point Examples

Sizes	Base	Range	Examples
Tiny	0 HP	1-10 HP	Doll (3 HP)
Small	0 HP	1-15 HP	Mechanical dog (15 HP)
Medium	0 HP	1-25 HP	Steam Bicycle (15 HP)
Large	10 HP	10-40 HP	Steam Automobile (30 HP)
Huge	20 HP	20-50 HP	Ironclad (48 HP)
Gargantuan	40 HP	40-120 HP	Land Ironclad (64 HP)
Colossal	100 HP	100+ HP	Armoured Airship (150 HP)

The overlap between size categories is intentional, since a smaller engine might be tougher than a larger one if made from especially durable materials. Hit Points on the lower end of the scale are appropriate to engines that are smaller or more lightly built within a category; larger or heavier engines have more hit points.

Engine Point Cost: Base Hit Points are 0 if medium size or smaller, 10 if large, 20 if huge, 40 if gargantuan, 100 if colossal. Each extra hit point beyond base hit points costs 2 Engine Points.

Occupants & Cargo

Occupants

Determine how many occupants can be inside the engine. This is simple for personal armour, as only a single person whose size is the same as that of the suit may fit inside. Thus, if the suit is medium size, it is usable with a medium-sized occupant. A suit has no cargo capacity.

For vehicles and automata, decide how many medium-sized occupants are carried. Use the Maximum Occupants chart to determine the maximum number of crew and passengers allowed. With colossal engines, the only limit is the optional realism consideration detailed under Maximum Loads.

Maximum Occupants

Sizes	Number of Occupants
Small	1
Medium	2
Large	4
Huge	10
Gargantuan	20
Colossal	see text

There are two types of occupants for an automaton or vehicle, crewmen and passengers. Crewmen are those who can use the engine's systems in action: pilots, gunners, battery commanders, as well as equipment operators who main crucial systems such as sensors or communications. Many engines have only one crewman, the pilot or driver; other engines may have several crewmen. In a large naval vessel or airship, these are usually the bridge crew and gunners. Engines that require many people simply to keep it operational have the Service Crew Defect.

Passengers are everyone else. This includes passengers as well as maintenance and service crew, such as cooks, medics, engineers, sailors, troops, battery weapon loaders, and even off-duty crewmen for smaller engines carried aboard. Not all engines have passengers.

Decide on how many Operators and how many passengers are carried. All engines must have at least one crewman, but the engine need not carry the maximum number of occupants.

Engine Point Cost: 10 per crewman; 4 per passenger. Exception: If the engine is colossal and has 25+ passengers aboard, their cost decreases: 26-50 passengers cost 100 Points, 51-100 passengers are 150 Points, 101-200 cost 200 Points, 201-400 cost 250 Points, etc., at +50 Points per doubling of capacity.

Cargo
An engine may devote space to cargo. This can be either an internal cargo hold or trunk, or an external cargo bed, or even underwing pylons. Some or all of an engine's cargo may be designated as coal storage or hangar space if desired; there is no extra cost for this, but it cannot easily be used for much else. Not all engines have cargo spaces.

Engine Point Cost: 1 per 200 lbs. or 10 per ton. Exception: If the engine is colossal and has 10+ tons of cargo aboard, cost is reduced: 10-20 tons cost 100 Points, 21-40 tons cost 150 Points, 41-80 tons cost 200 Points, 81-160 tons cost 250 Points, etc., at +50 Points per doubling of capacity.

Maximum Loads
For realism's sake, total weight of occupants and cargo in an automaton or vehicle should rarely exceed half the engine's weight. Treat occupants (including seats, etc.) as 400 lbs., that is, 5 occupants to a ton.

DEFENCE & HARDNESS

Determine the engine's actual Defence (Def) number using this formula: **10 + size modifier.** Defence can be increased by the pilot's Dex bonus and any class abilities or Feats that increase engine defence.

Engines are tougher than people. Assign the engine a hardness value (the organic equivalent is "damage reduction"). This is a value from 1 to 30, which is subtracted from any damage inflicted to the engine's hit points. The chart below gives sample hardness values for real-world vehicles. These are suggestions and not meant to constrain designs.

Engine Hardness Examples

Vehicular Example	Typical Hardness
Rubber raft, rowboat	0-2
Motorcycle, oared galley	2-5
Automobile, light aircraft	4-6
Large sailing ship, jet airplane	4-8
Pick-up truck, jeep	5-7
Semi-truck, cargo steamship	5-9
Attack helicopter	7-10
Armoured car or limousine	10-11
Typical "powered armour" suit	10-14
Armoured Personnel Carrier	9-15
Infantry Fighting Vehicle	13-16
Medium tank (WWII era)	12-18
Battleship (WWII era)	18-20
Main battle tank (modern era)	18-25
Powerful giant battle robot	15-30

Another way to select a hardness value is to decide what sort of weapon the engine can routinely ignore and assign it sufficient hardness to stop the average damage of that attack. To use a modern example, if a 0.50-caliber machine gun inflicts 2d12 damage (an average of 6.5 points per d12) and the engine should stop most 0.50-cal. bullets, a hardness of 13 or more is required.

If the GM permits players to build their own engines, he or she may choose to restrict them to a certain range of hardness values to ensure they are balanced against likely opposition. There is nothing wrong with the characters (or their foes) being tough, but they should not be utterly invulnerable.

Engine Point Cost: 5 times hardness value. Note that large hardness values will increase the cost of speed.

ENGINE STRENGTH

Any engine that can manipulate objects or perform melee attacks will have a strength score. This excludes most vehicles. Personal armour usually adds bonus to the strength of the wearer, while automata will have their own strength values. The Engine Strength Range Chart gives the values of strength for automata and personal armour.

ENGINE STRENGTH RANGE CHART

Sizes	Automaton	Personal Armour bonus
Fine	Str 1	Str +0
Diminutive	Str 1-3	Str +0
Tiny	Str 1-10	Str +0
Small	Str 5-15	Str +0 to +5
Medium	Str 10-25	Str +0 to +15
Large	Str 15-35	Str +5 to +25
Huge	Str 20-50	Str +10 to +40
Gargantuan	Str 30-75	Str +20 to +65
Colossal	Str 40-100	Str +30 to +90

Engine Point Cost: For automata, this is (Str-10) x 3 Points. An automaton with Str 40 would pay (40-10) x 3 = 90 Points. For personal armour, this is 3 per +1 Str. Personal armour with a Str +10 would pay 30 Points.

SPEED

There are six types of speed: Land, Air, Water, Underwater, Burrowing, and Space (in an Engines campaign, space travel is usually limited to the inner solar system). An engine can have ratings for some or all of them. An engine's speed (except for space) is measured in miles per hour. See also Combat Speeds for Engines, below.

Use these rules to determine vehicle or automaton speed. Special rules apply to personal armour; see Personal Armour Movement.

Combat Speed for Engines
It is also important to calculate the combat speed of the engine. This is its speed when moving during six-second combat rounds. The Imperial Age uses the standard character scale and chase scale for speed. To convert to character scale, multiply miles per hour (mph) by 1.76 to get squares per round. To convert to chase scale, multiply mph by 0.176 to get squares per round. Round off to the nearest square.

Land Speed
Land speed is the maximum speed the engine can move on solid ground. An engine will have a land speed statistic if it is capable of sustained movement and manoeuvre on the ground. This usually means it has legs, wheels, tracks, or a combination, or perhaps even a snake-like body.

Land speed is unnecessary if the engine, such as an airship or a boat, cannot move on land or only does so as a short takeoff or landing (e.g. an aeroplane). Select the land speed in mph. Then calculate its combat speed. Some examples of land speeds:

  • 10 mph is typical of bulldozers or lumbering steam-powered engine.
  • 45 mph is the top speed of the Ford Model T, which is still over two decades away.

  Engine Point Cost: Hardness multiplied by 1 per 10 mph (16 kph) of land speed; treat a hardness of 4 or less as 5.

Burrowing Speed
An engine given a burrowing speed can move earth and/or tunnel underground. Top speed assumes the engine is going through sand or packed earth. Tunnelling through solid rock is 1/10 speed. The tunnel it leaves behind can be either

permanent or collapse after it — specify which when the engine is created. Select burrowing speed in mph, and then calculate combat speed.

Engine Point Cost: 1 if fine, 2 if diminutive, 3 if tiny, 5 if small, 10 if medium, 20 if large, 30 if huge, 40 if gargantuan, or 50 if colossal size per 2 mph of burrowing speed.

Water (and Underwater) Speed

This is the maximum speed the engine can move in or under water. Select the engine's water speed in mph, and then calculate its combat speed. If the engine can move underwater, select an underwater speed and a surface speed that is the same or higher than the underwater speed.

Some examples of water speeds:

   • 5 mph is typical of slower sailing craft or rowboats.
   • 10 mph is typical of faster sailing craft or galleys.
   • 10 mph is typical of early submersibles.

If the engine can dive and travel underwater, select its maximum dive depth in feet . Historically, the first 19th-century submarines could dive no deeper than 50' (15 m). Steampunk engines may be far more capable than that.

Engine Point Cost: 1 per 5 mph per point of hardness; if hardness is 4 or less, treat as 5. Double the cost for underwater movement. If the engine can travel underwater but has a faster surface speed, buy the underwater speed, and pay normal cost for each extra 5 mph over the underwater speed.

Each 10' of diving depth x the hardness of the vehicle costs 1 Engine Point, or 2 Points if the engine is of colossal size.

Air Speed

Some engines can fly through the air. If the engine can fly, decide how: propellers, rotors, rockets, flapping wings, hot air, magic, etc. Then select air speed and ceiling.

Select the engine's flight ceiling in feet. This is the highest altitude it can reach. The base ceiling is 500,' suitable for an autogyro. A higher ceiling can be selected; typical ceilings are 6,000-12,000' for airships and 10,000-40,000' for propeller aircraft.

Choose the air speed that the engine can attain. Most balloons should take a low speed and the Wind Powered Defect.

Select the engine's air speed in mph and then calculate its combat speed. If the engine lacks any propulsion system (such as a flying building or tethered balloon) pay only for its ceiling.

Examples of air speeds:

   •   20 mph is a good balloon speed.
   •   55 mph is the maximum horizontal speed of a peregrine falcon, the fastest bird.
   •   150 mph is typical of light propeller aircraft.
   •   17,000 mph is the speed required to reach orbit
   •   25,000 mph is Earth's escape velocity, enough to escape its gravity into deep space.

Engine Point Cost: 10 for a ceiling of up to 500'; for a higher ceiling, +1 per 1,000' (300 m). Each 10 mph of air speed costs 1 per point of hardness; if hardness is 4 or less, treat as Armour 5.
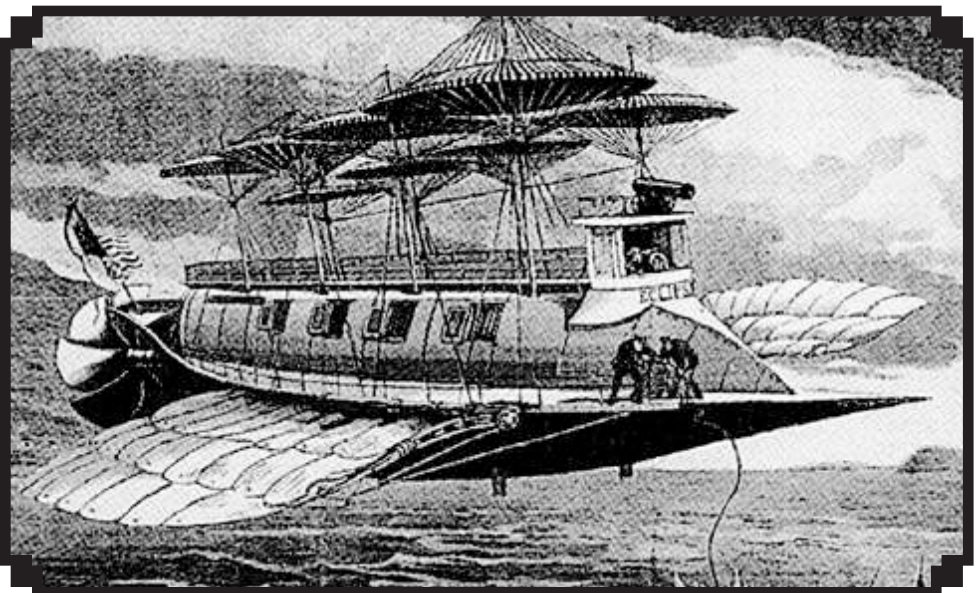
Space Flight

The engine can propel itself in space. Choose the craft's thrust. This is how fast the spacecraft can increase its velocity or change its course — both are the same thing. It is measured in gravities, or G: a thrust of 1G is an acceleration equal to Earth's gravity, roughly 32' or 9.8 m per second per second. In game terms, it can be assumed — with a great deal of abstraction — that each G of thrust lets the engine increase or decrease its current velocity by about 1,000'/round. If the engine stops accelerating, it will continue moving at its listed speed. It can decelerate instead of accelerating, reducing its speed by its thrust rating (thus, -100' for 0.1 G or -6,000' for 6G).

The engine can accelerate constantly for as long as it has power. The top speed is limited only by its endurance (see Defects) or any physics-based considerations the GM wishes to impose, like the speed of light.

Engine Point Cost: (1 + thrust in G) times Hardness times 10. Treat thrust under 1/20 G as 1/20 G, and Hardness under 4 as 5.

Personal Armour Movement

Unlike a giant automaton or vehicle, personal armour movement is based on the capabilities of its wearer. Sometimes the armour's weight will slow the wearer down, but personal armour often (but not always) includes a powered assist that allows the wearer to run faster and jump greater distances.

Select the personal armour's speed multiplier. This can be x2/3, x1, x1.5, x2, or x3. If the wearer is capable of multiple movement types, select the multiple for each movement type (paying Engine Points separately). The speed multiplier will be applied to armour wearer's normal speed to determine his or her speed when using the armour. A human's normal speed is 30', so in personal armour with a x1.5 multiplier he would move at 45' per turn. A speed multiplier of x2/3 means the suit has no power assist, slowing the wearer to 2/3 his or her speed, much like a normal suit of medium or heavy armour does.

Engine Point Cost: This is 2 x speed multiplier x hardness (but treat hardness 4 or less as 5). For example, if the speed multiplier was x1.5 and Armour was 10, it would cost (2 x 1.5 x 10) 30 Engine Points.

Personal armour may also include air, water, or space (but not land) movement if its wearer does not normally posses that capability. For example, a human's suit could buy air speed and manoeuvrability, representing a steam jet pack or mechanical wings. Use the rules for automata to determine the Point cost of this movement.

INITIATIVE

All engines have an initiative modifier. It is usually based on a vehicle's mass and momentum, and thus is normally a negative number equal to the engine's size modifier. Initiative is rarely increased above the starting value, but an increase could be justified for one that (for example) flew using magical rituals or was fast to accelerate. It should not go above or below +/-10.

Engine Point Cost: 0 Points for the base value equal to the size modifier. Each +1 over this base value costs 5. Each -1 below this starting value gives back the same amount of engine points.

MANOEUVERABILITY

Every engine has a manoeuvre modifier. It is based on how agile and quick to accelerate or turn the engine is. This is equal to the engine's size modifier. Agile engines like automata or steam bicycles usually add +1 to +4 points. Manoeuvre should not go above +10 or below -10.

Engine Point Cost: 0 Points for the base value equal to the size modifier. Each +1 over this base value costs 5. Each -1 below this starting value gives back the same amount of engine points.

Special Abilities

These are innate capabilities that an engine may possess. They are all optional — no engine is required to have any of the special abilities described in this section.

Accessories
These are additional features for the engine, which provide useful but mundane non-combat-related advantages. Examples of Accessories include: airlock, emergency lights and siren, loudspeaker, luxurious decor, tow cable, or wet bar.

An engine need not acquire accessories that are implied by its other capabilities or which are ubiquitous (like chairs in a passenger airship).

Engine Point Cost: 1 per Accessory.

Automatic Programming
The engine can operate automatically, but has no self-initiative. It can be given orders or programmed with directives, but obeys in a slavish, unimaginative fashion. The engine has no emotions or desires. Fully intelligent automata should be created according to the rules in Appendix 2.

An engine with automatic programming can have Intelligence, Wisdom, and Charisma abilities. These ability scores are only used for purposes of the Skill quality. Strength is built as per engine strength and Dexterity is based on the lower of initiative or manoeuvrability.

Engine Point Cost: The sum of the ability scores x5.

Ejection Seat
This escape system allows the crew to eject from a damaged engine. It is possible that not all crew will be equipped with them. They are not usable in personal armour.

As a free action, the character sitting in an ejector seat may eject at any time. Any canopy or rooftop is blasted clear by explosive bolts, and the seat launched at least 100' into the air by some contrivance. If the user ejected in an atmosphere, on the next round a parachute unfolds, carrying the occupant down to Earth. The ejectee may make a Pilot Skill check (DC 20) to guide the parachute to a specific place within 300' of the engine. If the occupant has no Pilot Skill, or fails, the GM randomly determines where he or she lands. Make a Reflex save (DC 10, or DC 15 if landing in woods, mountain, or urban areas; +5 DC if dropping from orbit) to avoid falling damage.

Usually, ejection seats are controlled by the person that is seated in them, but some vehicles (for example, as a theft precaution) may have seats that are controlled by the driver or another crewman. These may omit a parachute.

Engine Point Cost: 3 per ejection seat.

Environmental Systems
Engines may be equipped with climate control (allowing the crew to be comfortable in a wide variety of temperatures) or life support. Life support includes climate control as well as its own oxygen supply and is useful if the engine is submerged or at high altitudes.

Engine Point Cost: For Climate Control: 1 if medium or smaller, 2 if large, 3 if huge, 4 if gargantuan, 5 if colossal. Multiply cost by 4 for life support.

Extra Arms (Automaton only)
An automaton is assumed to have two arms, but it could have more (for example, a mechanical octopus).

Engine Point Cost: Each extra arm costs 1 per 2 points of Strength the engine possesses (round down). For example, an engine with Str 20 and three extra arms (a total of five arms) would pay 30 Engine Points.

Feats

An engine, especially an automaton, may have abilities that emulate an SRD feat. Feats may only be taken with a GM's permission.

Engine Point Cost: 80 engine points per feat.

Firing Ports

The engine has one or more firing ports sufficient to let passengers fire out of the engine with their own ranged weapons. The firing ports provide 9/10 cover (equivalent to arrow slits).

Engine Point Cost: +1 per firing port

Hangar (Automaton or Vehicle only)

Any portion of an engine's cargo capacity can be designated as a hangar bay for storage of other (smaller) engines. For example, if the engine has a 200-ton cargo capacity, it might designate that 150-tons are devoted to its hangar bay. Use common sense in determining the maximum number of engines that can fit in a bay of the specified capacity, based on their described size and mass.
Engines can also be carried as ordinary cargo, but cannot be effectively launched into battle, refuelled, etc. while in the cargo bay. It takes several rounds (or possibly much longer) to unload carried engines.

Engine Point Cost: The hangar cost is equal to the largest size of engine that can fit through the bay's opening: 1 if fine, 3 if diminutive, 5 if tiny, 10 if small, 15 if medium, 20 if large, 25 if huge, 30 if gargantuan, or 100 if colossal.

Headlights or Searchlight

The engine has either headlights equivalent to those of a modern automobile, allowing it to drive at night (range 500'), or a longer-ranged searchlight (5,000').

Engine Point Cost: 1 Point for headlights, 2 for searchlight.

Jumping

The engine can make very high, unaided vertical jumps, but not actually fly. It may use jets, powerful leg muscles, etc. Assign the engine a jump multiplier from x2 to x10.

Engine Point Cost: Jump multiplier x.25 (round up) if tiny or smaller, x.5 (round up) if small, x1 if medium size, x2 if large, x3 if huge, x4 if gargantuan, or x5 if colossal.

No. 669,210.

C. E. S. BURCH.
ICE LOCOMOTIVE.
(Application filed June 11, 1900.)

(No Model.)

Fig. 1.

WITNESSES:

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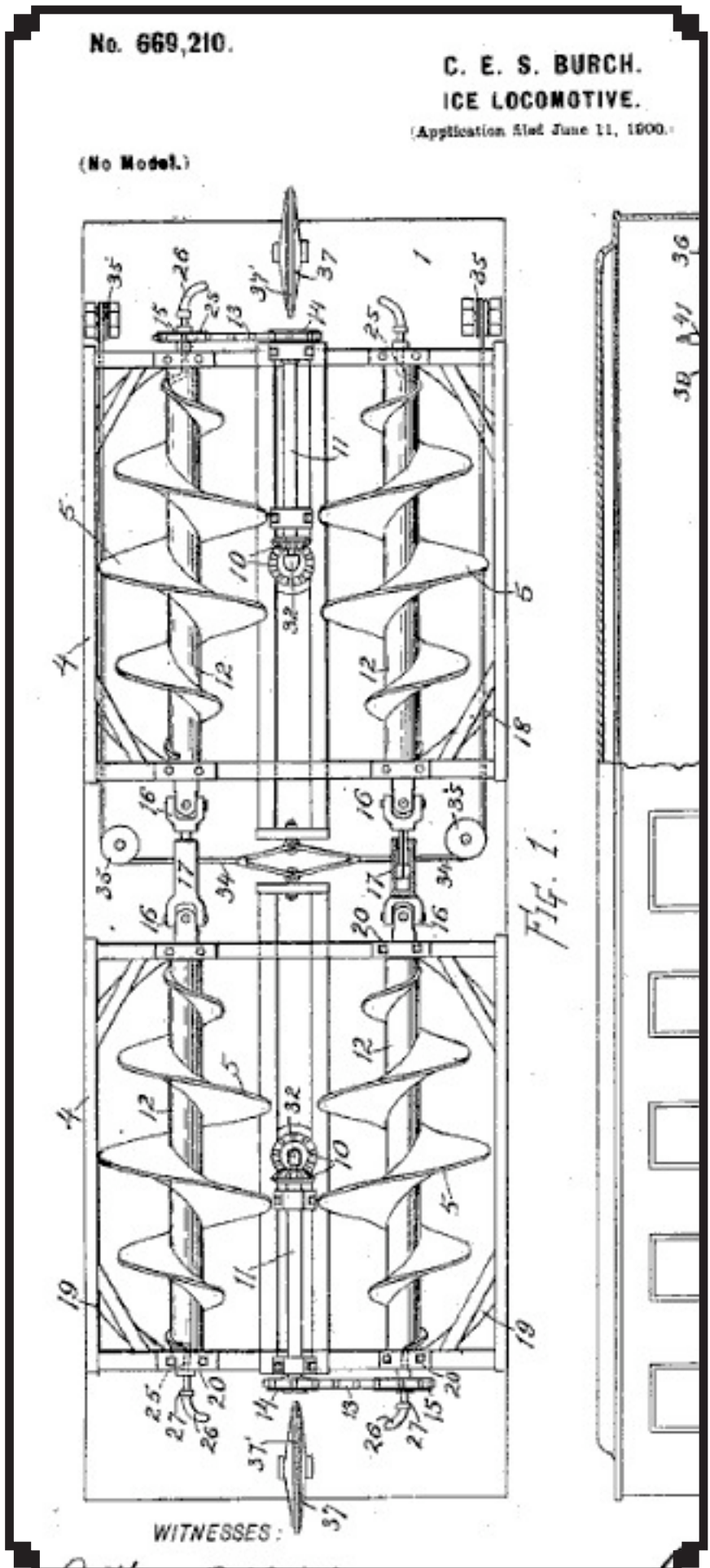
Launch Catapult

This system uses steam to accelerate other engines, boosting them to top speed. This allows flyers to take off in a much shorter distance. If launching into battle, the catapult also provides a +1 initiative bonus on the first round of combat.

Engine Point Cost: This is determined by the size of the catapult, which sets the maximum size of engine that can be launched: 1 (small or smaller), 2 (medium), 4 (large), 8 (huge), 16 (gargantuan), 32 (colossal).

Navigation Aids

Appropriate basic navigation is free in most cases. Superior navigation capabilities are also available. Modifiers are not cumulative. Having accurate positional data is very useful for accurate indirect fire.

Basic Navigation: maps, compass, lodestones, etc. +2 equipment bonus to Navigate checks.

Inertial Navigation System: A gyroscopic system that provides a +3 equipment bonus on Navigate checks.

Engine Point Cost: 1 for basic navigation, 2 for an inertial navigation system.

Remote Control

The engine has some form of control mechanism that enables it to be operated by remote control. If the engine has a crew requirement, a team equal in size to that requirement must be used to control it. There are two types of remote control, basic and advanced.

Basic Remote Control: The engine is controlled from outside the engine by the owner, who will use his voice (or other) control system. Doing so requires the Operator's full attention: he or she cannot do anything else, just as if actually inside the engine piloting it. This also means the Operator can only run one engine at once. It uses the Operator's stats as if he or she was aboard it. The control system must be specified as located in another engine, a base, or a Hand-Held unit. The GM should decide what limitations (range, susceptibility to ECM, etc.) it has.

Advanced Remote Control: As Basic Remote Control, but the engine requires less supervision: the Operator can also do other things at the same time (including operating his or her own engine, or controlling more than one advanced remote control engine). If he or she divides his concentration in this way, the character suffers a cumulative -2 penalty on all actions for each engine being remotely controlling.

Engine Point Cost: 5 for Basic Remote Control, 10 for Advanced Remote Control.

Rooms (Vehicle Only)

Colossal vehicles may have specialised internal rooms. These reduce occupancy as indicated.

Kitchen: Meals may be prepared aboard the engine, providing room for two cooks to work (buy multiple kitchens for larger facilities). Counts as 3 occupants. 1 Engine Point

Conference Room: Meetings are held in this room. Counts as a number of occupants equal to its capacity. 1 Engine Points

Science Lab: This fully equipped science lab gives a +2 Equipment bonus to any relevant scientific Skill check. Two scientists can work at a time; for larger facilities, buy multiple labs. Counts as 5 occupants. 5 Engine Points

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. Counts as 5 occupants. 5 Engine Points

Workshop: This fully equipped machine shop includes a variety of specialised tools and spare parts. It grants a +3 equipment bonus on Repair checks for mechanical or, if technology allows, electronic, devices and lets character to make Craft (mechanical), (electronic), or (structural) checks without penalty. Counts as 5 occupants. 5 Engine Points

Self-Repair

The engine is maintained by a good repair crew. A engine cannot be repaired if it is destroyed. The engine can regain 1 hit point per day of repair.

Engine Point Cost: 1 per 5 hit points.

Sensors

Engines may be equipped with various instruments and electronics to enhance their ability to detect objects at a distance.

Sensors are usually used to make Fantastic Science skill checks to spot targets. Instead of the normal penalty of -1 per 10', the penalty is -2 per 1,000' times the range in miles. Thus, a radar with a range of 10 miles allows Fantastic Science checks to be made at a penalty of only -2 per (1,000' times 10) 10,000'. The maximum range is 10 increments.

Sensors noted as useful for targeting can be used when aiming attacks or navigating in the dark, bad weather, etc.; this negates the effects of darkness or concealment through which the sensor can see. Not all sensors are useful for targeting.

Infrared, Meta-Scanner, and Radar Sensors detect targets in a single direction — usually in a cone-shaped direction. A sensor can be specified as "global" (seeing in all directions) for double cost. Seismic and magnetic sensors are unaffected by solid objects and can "see" over the horizon; other sensors cannot scan through solid objects nor over the horizon. Sensors include:

Infrared (IR): The engine has infrared sensors like modern main battle tanks or attack helicopters. These give its crew the ability to see in the dark (in monochrome) as if it were day; this is effectively Darkvision, except that the range is much greater. Infrared cannot see through solid objects. It can pick out heat shapes, see through ordinary darkness, smoke or fog, and detect people hiding in trees or bushes. It is useless underwater, but very effective in space. In space, range is 100 times greater. The sensor cannot see over the horizon. It can target opponents.

Optics: These are telescopes. Unlike other sensors, they do not provide any ability to see through concealment, but simply increase the range at which objects can be visually spotted. They can be used for targeting.

Radar: The engine bounces radio waves off objects and analyses the reflections to determine the range and direction of targets. Radar lets the crew detect objects at long distances, but does not resolve colour or fine detail: it only gives the approximate size, range, and course of the object detected. Radar is an active sensor, so it can be jammed or detected. This is effectively Blindsight except that it does not work underwater, but does work in vacuum. It can see through darkness, fog, smoke, and vegetation; ignore concealment modifiers. In space, multiply range by 10. Radar can target opponents.

Sonar: The engine has sonar sensors, similar to that used by a submarine or dolphin for detecting objects underwater. It may use passive sonar to "listen" for moving or noisy objects or use active sonar to resolve the object's exact range and shape, or detect objects that aren't making noise, search the sea floor for wrecks, etc. If active sonar is used, passive sonar on other engines can detect it at longer distances: add the range of the active sonar to their passive sonar detection range. Sonar does not work in space, and gets only 1% of its normal range if used in air. Active sonar can target opponents.

Seismic: This sensor can detect large moving objects by the vibration they produce in the ground. They are less precise than other sensors (-8 on rolls to spot targets) and cannot be used for targeting. Seismic sensors ignore concealment or intervening objects, but cannot detect stationary things (unless they produce vibrations, such as jumping up and down, drilling, etc.). Both the engine and the object must be on the ground. Seismic sensors can provide an approximate size of the target (medium, large, etc.) but no actual information as to its shape or nature. They can detect large explosions and earthquakes at many times their base range. A seismic sensor is "global" automatically. It gains +5 to spot burrowing targets.

Engine Point Cost: 1.5 per mile of range if optics; 3 per mile of range if Radar or Sonar; 5 per mile if Infrared; 10 per mile if Seismic. Global Sensors are x2 cost; Seismic are Global at no extra cost.

Shield (Automaton only)

A shield is a Hand-Held barrier that engines can interpose to absorb damage from attacks. An engine requires at least one arm in order to use a shield; if the engine only has one arm, it can't use a Hand-Held weapon and a shield at the same time.

An Engine Pilot must have Shield Proficiency and the Automaton Fighting feat to use a shield without suffering a -2 penalty on all attack rolls, and all Dex- or Str-based Skill checks.

A shield may give a defence bonus of up to +5.

Engine Point Cost: Cost is 3 per +1 defence up to def +3; after that, it is defence bonus x defence bonus.

Skills (Automatic Programming only)

Engines with automatic programming may be hardwired with skills. Domestic servants, for example, may be hardwired with Profession (servant) and Search. An automaton butler may have Bluff and Diplomacy skills. The GM should determine what skills are available to an engine and the skill rank ceiling.

Engine Point Cost: 40 engine points per skill rank.

Skill Bonus

This is a catchall quality for skills not covered by other engine stats or qualities. This quality adds an equipment bonus to the user's skill check.

Engine Point Cost: 1 engine point for a +2 bonus, 2 engine points for a +3 bonus, 4 engine points for a +4 bonus, and 8 engine points for a +5 bonus. Skill bonuses of +6 or higher are extremely rare; continue doubling the cost.

Spell-like Ability

The engine, either through fantastic science or via truly magical means, has the ability to generate an effect similar to a spell. The most common method is through runic inscription. The GM must approve all spell-like abilities that are assigned to an engine as they must fit within the parameters of his campaign setting. If a spell's effects depend on the caster's Level, treat it as if cast by a character of the engine's ECL.

Engine Point Cost: The cost of a spell-like ability is equal to the spell Level (treat zero Level spells as Level 1) cubed times the number of times per day the ability can be used: Spell Level x Spell Level x Spell Level x Number of times usable per day

Stabilisation Gear

The engine's ranged weapons are gyrostabilised. They can be fired when moving without penalty, even if the gunner lacks special Feats. Exception: Weapons with the Static quality can still only be fired when the engine is stationary.

Engine Point Cost: 10.

Targeting Bonus

An engine may have a targeting bonus as a result of a built-in sighting system. A targeting bonus must be bought individually for each weapon. Each purchase grants a +1 for that system.

Engine Point Cost: 5 per weapon

Wall-Crawling

The engine can use spikes, adhesive pads, or some other means to climb walls and ceilings as if it were an insect. The engine must have a land speed to use this ability. It gets +8 on all Climb checks, and may take 10 while climbing, even if threatened or distracted.

Engine Point Cost: 2 per point of Hardness (treat Hardness 4 or less as 5).
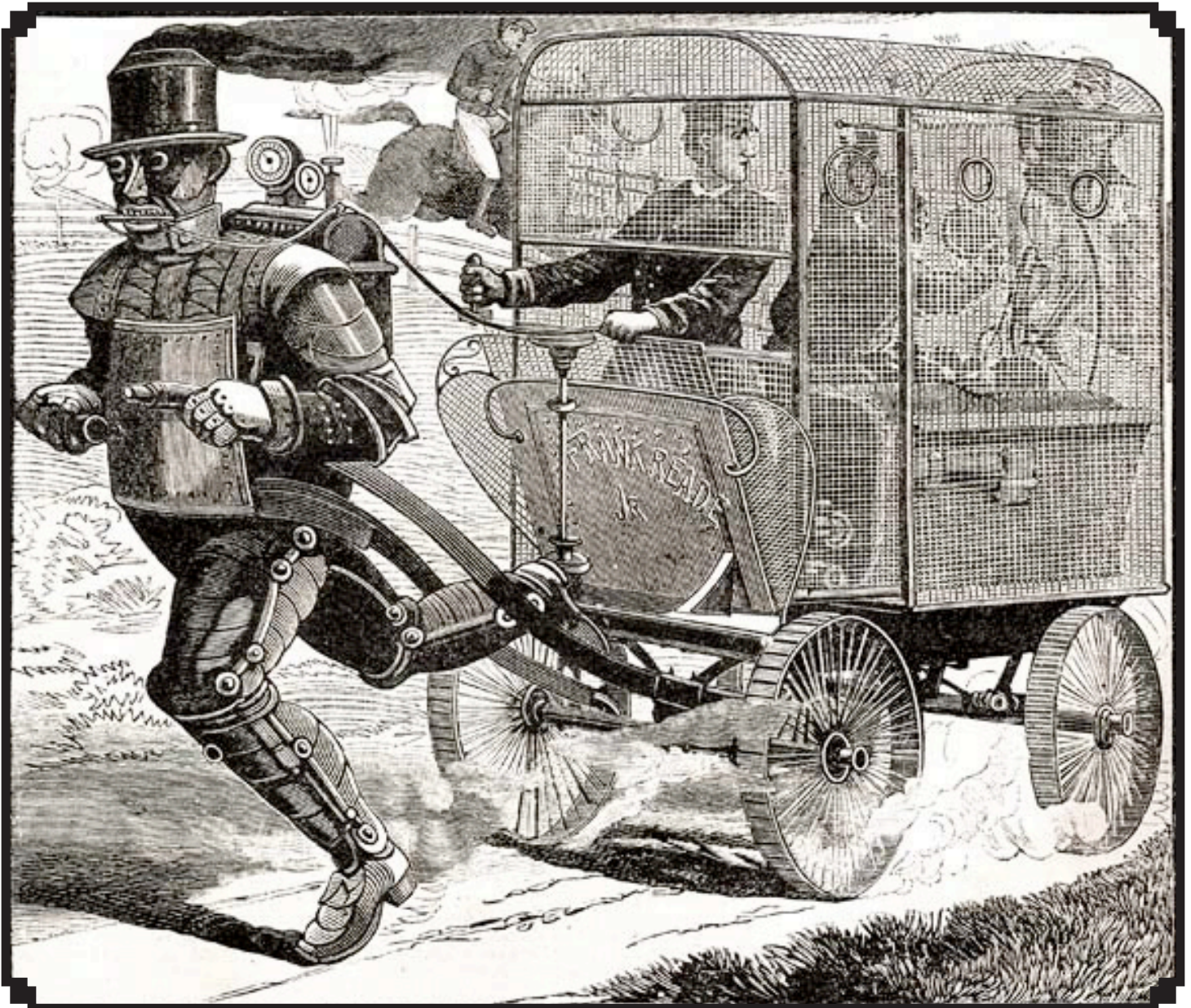
DEFECTS

These are Defects that affect the workings of the engine. Defects reduce the Engine Point cost. Engine Defects cannot reduce the Engine Point Cost of an engine below 1 Point. If this happens, treat the engine as costing 1 Engine Point.

[Direction]-Optimised Hardness

The hardness's full value protects against attacks from one direction (usually front-optimised). Attacks from other directions (for example, the side, rear, top, and bottom) are protected at 2/3 Hardness (round down).

Engine Point Cost: -1 per point of hardness the engine has.

Flammable

The engine's structure and armour are made of wood or similar flammable material. Its hardness does not protect at all against fire or other fire-based damage. Saves against fire are made at a -4 penalty.

Engine Point Cost: -1 per point of hardness.

Glider

Glider can be taken by an engine that can fly and does not have the Hovercraft or Wind-Powered Defects. It means the engine can only take off if launched from a fast-moving vehicle or high place, and can only gain speed by diving or gain altitude by riding thermals. Assume a glider has a glide ratio of about 60:1 if average manoeuvrability, 30:1 if poor manoeuvrability, or 20:1 if clumsy. A 60:1 glide ratio means (for example) that if dropped from a height of 1 mile, it could glide for 60 miles before landing. A pilot check (DC 10) can extend glide ratio by 10% for every point by which the check succeeded.

Engine Point Cost: -2 per 10 mph of air speed.

Hangar Queen

The engine requires extra careful maintenance to work properly. If this is not available, the GM should feel free to impose breakdowns of various systems whenever seems dramatically appropriate. The engine spends much of its time in a garage, shop, port, etc. undergoing repairs. For every hour it was used, it should be given at least an hour of maintenance.

Engine Point Cost: -10

High Ground Pressure

This Defect can only be taken if the engine has a land speed. It means that the contact area of its wheels, legs, or tracks is slight compared to the engine's weight. Consequently, it tends to sink into the ground. Most civilian cars and trucks possess this defect while specialised all-terrain vehicles or dirt bikes do not have it. Most tanks do not have a high ground pressure due to the width of their tracks, but a "realistic" two-legged giant robot may have this problem unless it has very large feet.

The engine will bog down in any swamp, deep snow, or mud (no movement). It moves at 1/2 speed when crossing sand, light snow, or soggy ground. This is cumulative with the penalties for Road Vehicle.

Engine Point Cost: -1 per 10 mph of land speed.

Noisy or Very Noisy

The engine is noisier than an ordinary person. A noisy engine is also detected more easily by sonar or Listen checks. A noisy engine can never attempt to Move Silently.
"Noisy" means the engine is as noisy as an ordinary automotive engine. +10 on Listen or sonar checks to notice it; weapons with the Sonar Homing quality get a +4 to lock on and attack.
"Very Noisy" means the engine is as noisy as an aircraft engine. +20 on Listen or sonar checks to notice it; weapons with the Sonar Homing quality get a +8 to lock on and to attack.

Engine Point Cost: -5 if noisy, or -10 if very noisy.

One Hand/No Hand (Automaton only)

An automaton is assumed to have two arms with hands, but it could have only one, or even none, instead having legs or no limbs at all. If it has one hand it cannot hold onto something at the same time it punches someone or uses a Hand-Held weapon.

Engine Point Cost: -1 per 2 points of Strength the engine possesses if one hand, or -1 per point of Strength if it has no hands.

Open

The engine's hardness does not protect the crew or passengers, only the engine itself. This is common for engines like galleys, steam bicycles, gliders, or robot horses. The engine provides 1/2 cover, or no cover if the engine is the same size or smaller than the rider. Open engines can never have the Poor Visibility defect. Engines that are solely operated by automatic programming or remote control cannot have this defect.

Engine Point Cost: -2 per point of hardness the engine has.

Poor Visibility

The engine has very poor visibility, due to small or no windows and a lack of compensating sensors, or other problems. The only way to get unrestricted vision is to actually stick one's head out a hatch or window (leaving one with only half cover, as per the Open defect). Otherwise, attempts to spot something visually from inside are at -2 if looking directly forward and -4 if looking in any other direction. Engines with the Open Defect can never have this Defect.

Engine Point Cost: -5

Reduced Endurance

The default assumption is that an engine has an indefinite range — it can operate for months at a time, like a sailing ship, provided supplies of food and water are available. If the engine must refuel or recharge before then (something that should take at least half an hour of effort) it has Reduced Endurance.

Select one of these operational periods: a few weeks, several days, a few days, several hours, a few hours, several minutes. In this context, "several" means 5-30; "a few" means 1-4.

Engine Point Cost: -5 if a few weeks, -10 if several days, -15 if a few days, -20 if several hours, -25 if a few hours, -30 if several minutes.

Restricted Path

For one reason or another, the engine cannot leave a narrowly restricted area. This may represent a railway train, a cable car that cannot leave its track, or a towed trailer/carriage.
  Another way to interpret this is an engine that is attached to a generator by a power cable. The engine can operate normally unless the cable is unplugged, then has only a few rounds reserve power (and an enemy engine that grabs it might unplug it).
  Decide if it is a long path (like a railway line) or a short path (like a tether or a building interior)

Engine Point Cost: -1 fine, -3 diminutive, -5 tiny, -10 small, -15 if medium, -20 if large, -25 if huge, -30 if gargantuan, or -50 if colossal; x2 if a short path.

D. L. KLAHR.
TRICYCLE.
Patented Mar. 3, 1891.
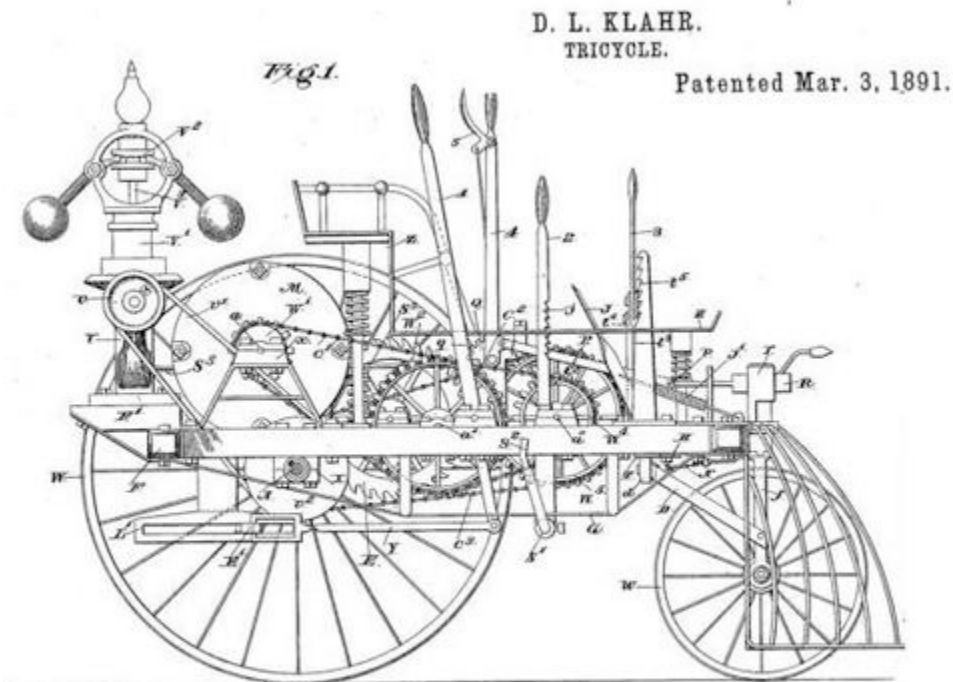
Road Vehicle (Vehicle Only)

Take this Defect for most wheeled vehicles. The engine attains full land speed only on a smooth flat surface such as a paved road. Its land speed is cut in half in other circumstances, such as on a dirt road, off-road, etc.

Engine Point Cost: -1 per 10 mph of land speed.

Service Crew

The engine is large enough that it requires a crew of engineers, sailors, or other individuals to perform maintenance, man rigging, cook, etc. Service crew are in addition to any regular crewmen (pilot, commander, equipment operators, or gunners). For weapon loaders, use the Crew-Served restriction instead. The engine must have sufficient passenger occupancy to carry that many crew. If an engine loses service crew it will not stop functioning (provided there is someone to pilot it), but it will not run smoothly.

For each 25% an engine is undercrewed (round up), the GM can impose a -2 penalty on all engine-related Skill checks rolls or pick a system (sensors, maintenance, a weapon) that has gone unmanned and thus cannot be used. A short, overworked crew is also more likely to make mistakes, leading to equipment breakdowns.

Engine Point Cost: Depends on the Service Crew requirement: -2 if one crew member, -4 if two crew, -6 if 3-4 crew, -8 if 5-8 crew, -10 if 9-16 crew, -12 if 17-32 crew, -14 if 33-64 crew, and -16 if 65-128 crew, etc.

Stall Speed

This can only be taken by an engine that has a ceiling and air speed. If the engine has a stall speed, it must always fly faster than the stall speed to remain in controlled flight. If it does not, it will go out of control.
  Ordinary airplanes will have a stall speed. Engines that use flapping wings, such as an ornithopter, may have a low stall speed or none at all if they can hover like a hummingbird. Other types of flying engines (such as autogyros) will not have a stall speed.
  A typical stall speed is about 10-25% of air speed. Decide on the speed in mph, and also determine the combat stall speed (see Combat Speed).

Engine Point Cost: -1 per 10 mph of stall speed x hardness. Treat hardness 0-4 as 5.

Start-Up Time

If the engine is shut down, a character cannot just climb into it and blast off cold. For example, it might be a complicated personal armour suit that takes a few minutes to put on or a power plant that takes time to warm up (early steam automobiles could take a half hour to warm up). Start-Up Time should only be taken for engines that have Reduced Endurance of a day or less, as the time is trivial if the engine runs constantly.

Engine Point Cost: -2 if 1 minute (10 rounds), -4 if 10 minutes, -8 if an hour, -16 if 4+ hours.

Volatile

Fuel, a boiler, or ammunition may explode if the engine is disabled or destroyed. If the attack that disables or destroys the engine dealt damage past its hardness equal to or greater than half its normal full Hit Points, the engine will explode after 1d6 rounds. This explosion deals 1d6 damage per full 5 HP the engine had when undamaged (minimum 2d6) to everyone within the engine (Reflex save, DC 20, for half damage). Half that damage is inflicted to everyone and everything within a number of feet equal to the engine's full hit points of the blast (Reflex save, DC 15, for half damage).

Engine Point Cost: -1 per full 5 hit points the engine has.

Weak Point

Due to a flaw in the design, there is a weak point in the engine. If an attacker knows where it is (this may require study of enemy wreckage, espionage, sensor scans, etc) an attack to that point is much more likely to cripple or destroy the engine.

A critical hit strikes the weak point and ignores the engine's hardness. If an attacker knows about the weak point, an attack made at a -8 penalty may deliberately target the weak point and ignore the engine's hardness.

Engine Point Cost: -1 per point of hardness the engine has.

Windows

The engine has large windows (like an automobile or airship) or canopy that does not protect against attacks aimed through them. This may not be taken in conjunction with the Open Defect.

If an engine's occupants are attacked, they can only claim three-quarters cover. Occupants that lean out of windows (for example, to shoot) will get only one-half cover. An attack can deliberately target a window at -4 to hit, ignoring the vehicle's hardness.

Engine Point Cost: -1 per point of hardness the engine has, if it has Armour 2+. Otherwise, there is no cost.

Wind-Powered (Vehicle-Only)

The engine is a sailing craft, powered by the wind. Its top speed will never exceed the present velocity of the wind, and it cannot move against the wind (it can tack upwind, but cannot move directly against the direction from which the wind is blowing).

This is most appropriate for engines with Water Speed, though wind-powered land or air vehicles are possible. It's usually inappropriate for engines with top speeds over 30 mph. This cannot be taken in conjunction with the Glider Defect.

Engine Point Cost: -1 if large or smaller, -2 if huge, -3 if gargantuan, -5 if colossal.

WEAPONS

Engines do not need to be armed, but may possess an array of impressive weapons. Building weapons is covered in **Chapter Five.**

Personal armour or an automaton's fists can inflict damage even if it has no weapons. Base damage is 1 if tiny, 1d2 if small, 1d4 if medium, 1d8 if large, 2d6 if huge, 2d8 if gargantuan, and 4d6 if colossal, plus strength modifiers. More potent attacks — including bite or claw attacks — should be built using the engine weapon creation rules.

If the engine has multiple weapons, design each one individually. If the pilot can make multiple attacks, several weapons may be used each round. The same holds true for multiple crew aboard an engine assigned as gunners. If you want one weapon to have multiple ammo choices, take the Alternate Ammo option. A "weapon" does not necessarily mean a single gun or missile. A set of multiple missiles on rails or pods is best treated as a single weapon (with several shots). A ship-of-the-line's broadside of dozens of cannons facing in the same direction is best handled as 1-3 weapons with extra damage and qualities such as Volley.

FINAL COST

Once the engine is designed, it is important to determine how much it will cost. Use the following formula for the purchase DC of a "factory model":

(Square root of Engine Point Cost) + 15, rounded to nearest whole number

- • Add +4 to the DC if the engine was built for the government or military.

- • Add +7 to the DC if the engine can fly.

- • Add +10 to the DC if the engine is custom-built or a prototype (this is the default purchase DC for marvellous engines).

These costs are cumulative. A military airship would add +11 to the purchase DC, or +21 if it is a prototype.

Game Masters should feel free to adjust the purchase DC to encourage or discourage purchases, especially if the final cost seems too high or low. Engines will be much cheaper in a heavy steampunk campaign than in a realistic historical campaign.
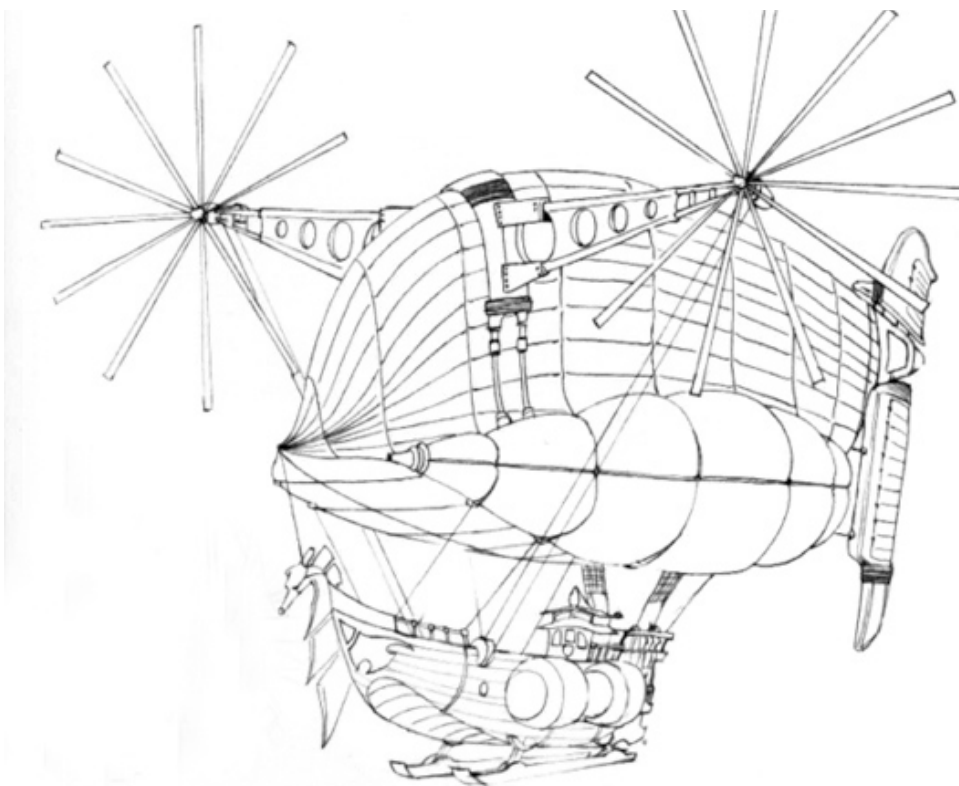
Chapter Five: Weapons

While not normally "engines" per se, weapons are an important part of a military Engineer's job. A land fortress that can rumble over broken terrain is impressive, but a lumbering land fortress that can bombard enemy lines is downright terrifying. Engineers can spend a great deal of time designing new and improved weaponry.

While the assumption in Imperial Age Engines is that Game Masters will use this section to design weapons for their engines, these rules can also be used on their own to create "normal" handheld weapons. As with engines, weapons are built with engine points. See Chapter Five for the purchase DC of weapons.

Designing Weapons

Take the following steps when designing a weapon:

1. Name Weapon

2. Determine the Type of Damage

3. Determine Damage Amount.

4. Determine Critical Threat Range

5. Determine Rate of Fire

6. Determine Range Increments

7. Determine Magazine Capacity

8. Determine Weapon Qualities

9. Determine Weapon Restrictions

10. Determine Other Considerations

11. Calculate Total Engine Point Cost
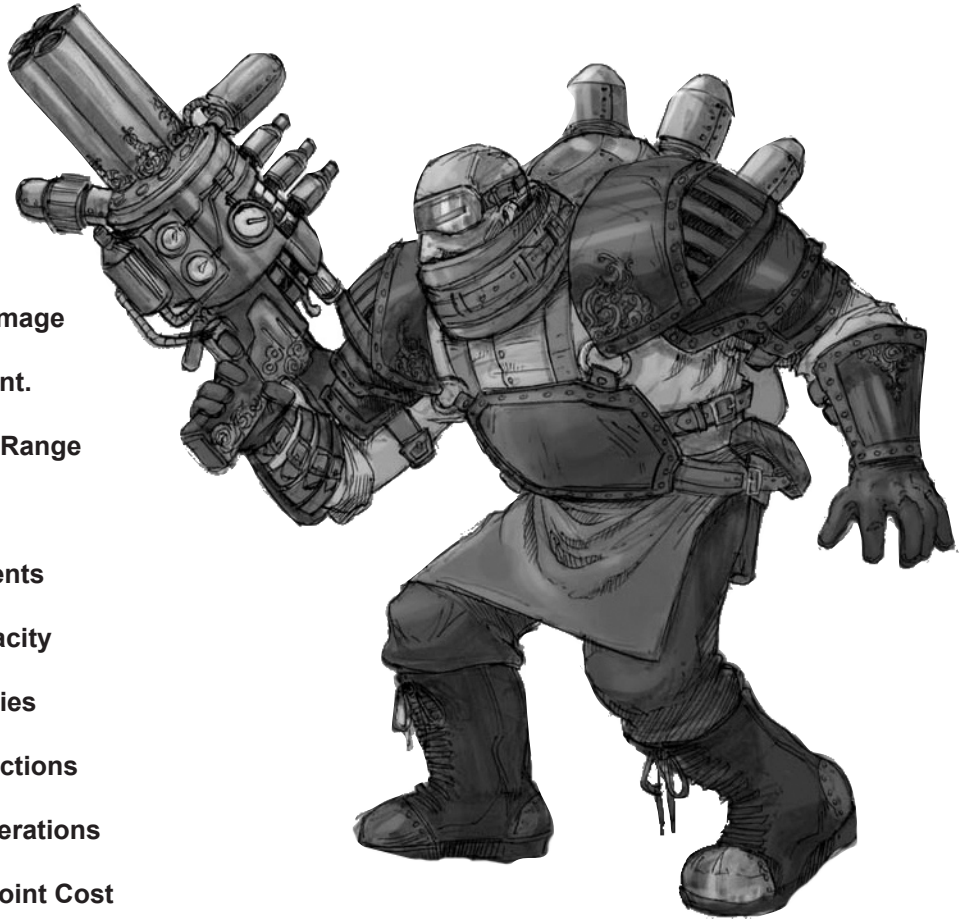
Weapon Name

Before designing a weapon, the Game Master should have an idea of what he wants the weapon to do. This will often suggest a name. In the Imperial Age, many Engineers follow the convention of giving elaborately descriptive or evocative names to their weaponry, such as the "steam-powered ballistic projectile cannon" or the "electric discharge generator."

Type of Damage

What makes a weapon a weapon is the damage it causes. This is usually, but not always, implicit in the name. A large cannon probably fires ballistic projectiles, but a dragon's breath cannon could emit a ballistic projectile, a flamethrower, compressed steam, or even a firebomb. Type of damage is important because some engine hardness or creatures may be resistant or immune to certain types of damage.

Types of damage are generally ballistic (bullets and other high-velocity projectiles), piercing (pointed thrusting or ranged weapons like spears, arrows, etc.), slashing (swords, whips, etc.), bludgeoning (clubs, fists, tails, etc.), energy (of a specific type: fire/plasma, laser, electrical, cold, sonic), or blast (explosions).

DAMAGE AMOUNT

Once the type of damage is determined, the next obvious question is the amount of damage it causes. Most weapons will inflict a certain amount of damage in terms of number of dice. The Game Master needs to select the type of die and the number rolled.

Some attacks do not deliver ordinary damage, but instead, have other effects: Flare, Nerve Gas, Riot Gas, Smoke, or Tangle. These special attacks are treated as ranged touch attacks. The GM should assign each special attack a modifier (usually 1 to 20), which applies to DCs and determines the weapon cost.

All damage amounts have an engine point cost as indicated on the Weapon Damage Cost Chart. Engine point cost is multiplied by the number of dice rolled (Example: a pistol doing 2d6 points of damage would cost 14 engine points).

Special Attacks

Flare: If hit (or in the radius of a Blast-effect or Emanation-effect) the target may be blinded. Everyone looking in the direction of the flash when the attack strikes must make a Fortitude save with a DC of (15 plus the Flare modifier) or be blinded for 2d6 rounds.

Nerve Gas: If hit, this will kill individuals who fail a DC (15 plus the Nerve Gas modifier) Fortitude save. Anyone wearing a pressurised suit, or in an engine with NBC filters or life support is unaffected. This must be combined with the Emanation quality.

Riot Gas: If hit, this requires individuals in the area of effect to make a Fortitude save against DC (15 plus the Riot Gas modifier) or be blinded and stunned for 2d6 rounds. Anyone using a gas mask, wearing a pressurised suit, or in an engine with life support is unaffected. This must be combined with the Emanation quality.

Smoke: The attack produces an obscuring smoke cloud. Smoke gives a 50% concealment modifier, and is also treated as 3/4 cover vs. lasers. The smoke remains for a number of rounds equal to the Smoke modifier. If the attack is assigned the Emanation quality then the base duration doubles (or the area of effect may double; see Emanation rules).

Hot Smoke: As smoke, but affects infrared sensors.

Tangle: The attack projects a web or net. This is treated as a Web spell except it requires an attack roll; if combined with Blast it will affect everyone in the area; if combined with Emanation, it is sticky, and will affect anyone who moves into the area as well. The DC to break free is (20 plus the Tangle modifier).

WEAPON DAMAGE COST CHART

Die Type	Engine Point Cost
d2	3
d3	4
d4	5
d6	7
d8	9
d10	11
d12	13
d20	21
Smoke	Modifier +10
Flare	(Modifier +10) x2
Hot Smoke	(Modifier +10) x2
Riot Gas	(Modifier +10) x2
Tangle	(Modifier +10) x2
Nerve Gas	(Modifier +10) x3

CRITICAL THREAT RANGE

A weapon's normal critical threat rating is 20. Adding the Increased Threat Quality (see below) will expand the threat rating.

RATE OF FIRE

The default ranged weapon rate of fire is single shot (SS) — one shot per round. Weapons may have faster or slower rates of fire as a result of their chosen qualities or restrictions (see below).

RANGE INCREMENT

A weapon's base range increment is 50' for a special attack. If the attack inflicts damage though, the range increment is determined on the Range Increment Table. The table shows the base increment for a single die of damage (e.g. if the weapon inflicts 1d10 damage, then the range increment is 50'). If the weapon inflicts multiple dice of damage then the GM should multiply the range increment by the amount of dice (e.g. a weapon that inflicts 3d10 damage would have a range increment of 150'). Squares are given for easy reference when using miniatures.

RANGE INCREMENT TABLE

	Dice Type								
	d2	d3	d4	d6	d8	d10	d12	d20	Special
Increment (feet)	10'	15'	20'	30'	40'	50'	60'	100'	50'
Increment (5' squares)	2	3	4	6	8	10	12	20	10

The actual increment can be modified by taking weapon qualities or restrictions. Each level of Long Range may up to double range; each level of Short Range may up to halve it.

Magazine

A weapon has an ammo capacity (magazine) of 17-30 shots before running out of projectiles or power. This may be modified via the Extra Ammo quality or the Low Ammo restriction.

Note that "magazine" does not necessarily mean that a weapon has an actual box or belt feed. Weapons that must be loaded manually should take the Slow-Firing restriction.

Weapon Qualities

Some weapons have additional capabilities beyond simply inflicting damage. These are known as weapon qualities. Weapon qualities can increase or decrease the default values above (larger magazine, increased range increment) or provide entirely new abilities (armour-penetrating rounds, concealment). Qualities marked with an asterisk (*) can only be used with attacks that inflict dice of damage.

Most weapon qualities count as a single unit for engine point cost purposes. A few qualities are especially powerful, and hence count as two or even three qualities. Each quality may only be taken once unless specifically permitted.

Armour-Penetrating*

This weapon is especially good at punching through heavy armour. It ignores the first 10 points of hardness or the target's hardness protects at half value (round down), whichever gives the best effect.

Armour-Penetrating can be taken multiple times: two levels ignore the first 20 points of hardness (or divide hardness by 3), three levels ignore the first 30 points (or divide by 4), and so on.

Automatic*

Automatic weapons fire a burst or stream of shots as long as the trigger is held down (until they run out of ammunition). They can be set on auto-fire or be used with Feats that take advantage of automatic fire.

There are two ways to use auto-fire:

• Area Auto-fire

This affects an area and everyone in it, not a specific creature. The character sprays an 10' x 10' (3 m x 3 m) area, or strafes an area 20' (6 m) long and 5' (1.5 m) wide, and makes an attack roll vs. Defence 10. If it succeeds, every creature or engine in the affected area must make a Reflex save (DC 15) or be hit by a single shot. Area auto-fire expends 10 shots; and can only be used if the weapon has 10+ shots left.

• Burst Auto-fire

This is fired at a specific target, and may expend from 2 to 5 shots (decide before firing). The target is attacked normally. Roll once to hit. A successful attack means the target is hit once; for every 5 the attack succeeded by over the target's defence, it is hit by an additional shot, up to a maximum of the number of shots that were fired in the burst. Roll damage individually for each shot that hit; if the target has damage reduction or Armour, subtracting it separately from every shot's damage.

Multiple Assignments of Automatic

Automatic can be taken twice. This emulates gatling guns or multiple linked machine guns. They can fire as above, or instead use Saturation Auto-fire or Extended Bursts. Saturation Auto-fire is treated as Area Auto-fire, but requires expending 50 shots, covers twice the area, and victims must make a DC 20 Reflex save. Extended Bursts may fire 10-50 per burst, at a +1 to hit per 10 shots.

Blast

The attack affects not only the target but also anyone adjacent, such as an explosive warhead or plasma blast. The radius of effect is 10' (3 m). Blast can be taken multiple times. Each time it is taken, double the radius of the blast. Thus, taking it 4 times gives an 80' (24 m) blast radius.

When a target is hit, everyone caught in the blast (other than the target directly hit) may make a Reflex save (engine Operators roll for their engine) against a DC of 15 to halve damage. The target of the attack, if hit, takes full damage — no Reflex save is allowed. Alternatively, an attacker may fire a Blast weapon at the ground next to a target (treat as Defence 10), rather than the target itself. This is a ranged touch attack. This can have a better chance of hitting, but has the disadvantage of always granting a Reflex save. This tactic is not possible against a flying or space target unless the attack has the Guided quality.

Burning*

This represents flaming liquid, acid, or similar weapons that deliver continuing damage. If the initial attack hits, the target takes continuous damage each round, for the next 5 rounds, or until somehow neutralised (GM call: it should depend on the type of attack). Armour or Force Fields do protect against the damage.

It can be taken multiple times; each extra time doubles the duration. The first level of Burning counts as two qualities.

Concealed

An engine's weapons are normally obvious, at least to someone who knows where to look for the gun barrel, missile port, or laser lens. Take this quality to install a disguised or retractable weapon in a craft that looks like it would be unarmed, such as an ordinary-appearing carriage.

It takes a move action to "pop up" a hidden weapon so that it can be used in battle.

Cone

A cone attack shoots away from the weapon in the direction he or she designates. A cone starts in a square adjacent to the engine and widens out as it goes. A cone's width, at a given distance, equals its current range — a cone is 50' wide when 50' away from the attacking engine. At its far end, a cone is as wide as the effect is long.

A cone attack's maximum range is 1 range increment; cone attacks have very short range.

A cone attack is not resolved as an ordinary attack. It automatically hits everything in the target area, but targets get a Reflex (DC 20) save. Success means they suffer half damage, failure means they take full damage. Cover will give a bonus to the Reflex save, and if the cover is sufficient (such as a slit trench, building, etc.) a success means the targets dove or moved behind the cover. These targets would take no damage rather than half damage (GM discretion).

Cone counts as three qualities.

Emanation

Some attacks have an area like a blast, except that the effect continues to radiate from the point of origin for multiple rounds. The effect is the same as Burning, above, lasting 5 turns, but affecting everyone who enters an area only for as long as they remain in it (unless also combined with burning).

The radius of effect is 5' (or 1.5 m). The quality can be taken additional times. Each time it is assigned to a weapon, double the radius or the duration (designer's choice).

The first level of Emanation counts as two qualities.

Extra Ammo

This increases the weapon's total shots from the default up to 50. It can be taken multiple times: twice gives up to 200 shots; three times is 1,000 shots.

Flexible*

This represents long, flexible, or extendible attacks like a whip, energy-lash, razor-ribbon, or similar weapon.

A flexible attack can be used like a giant whip to disarm or trip any opponents of equal or smaller size than the weapon's size; for example, a huge whip can trip or disarm opponents up to huge size. A character can make a trip attack with a flexible weapon by succeeding at a ranged touch attack. The character does not provoke an attack of opportunity when using a flexible weapon in this way.

A flexible weapon also gives a +2 bonus on an opposed attack roll when attempting to disarm an opponent (including the roll to keep from being disarmed if the character fails to disarm the opponent).

If this quality is chosen for a weapon, the Melee Weapon restriction must also be taken. A flexible weapon can reach out farther than normal, however: 15' (5 m) for a medium weapon, doubled for each successive size class.

Guided

The weapon fires a projectile that homes in on its target. The weapon has its normal range (usually 10 increments). On the round the projectile is fired, the attacker must normally specify a target. Each round (on the attacker's initiative) the missile moves toward the target, closing a distance equal to its range increment, and making up to a 45-degree turn, climb or dive. When it reaches the target, an attack roll is made, with no range penalties to hit. Other rules depend on the guidance system used. Pick one of these systems:

• Operator-Guided
The weapon fires a missile that is steered toward the target by the attacker, transmitting commands via a wire or a tight-beam radio link. The attacker must take full actions each round to guide the projectile to the target. The attacker uses his or her own attack bonus; the guidance system negates range penalties, but has no other effect.

• Semi-Active Radar Homing
The weapon fires a missile that homes on radar reflections emitted by the engine's own radar. The engine must have a Radar, High-Res Radar, or Meta-Scanner. It must lock onto the target (this requires a ranged touch attack, using the Radar's range increment); failure allows additional attempts. Once a lock-on is achieved, launching the missile is an attack action. Once fired, the Radar must continue to track the target or the missile will automatically miss, but no other character actions are required; if the Radar only faces forward, that means keeping the engine pointed at the enemy. As long as it does so, the missile closes on the target. When the missile reaches the target, it attacks on its own, with a +8 attack bonus.

• Radar Homing
The missile uses its own onboard radar. The attacker must lock onto the target. This is a ranged touch attack, using the weapon's range increment. If the lock on fails, it can be attempted again in future rounds. If it succeeds, the missile can be launched; this is an attack action. The missile will follow the target with no further intervention required. When it reaches the target, it attacks the target itself. A radar homing missile has a +10 attack bonus. Concealment effective against radar will penalise the attack.

• Sonar Homing
The missile — a torpedo — uses its own onboard sonar. It can only be fired at underwater targets. Treat as radar homing, except that concealment effective against sonar will penalise it.

• Other Homing
The GM may allow players to create other specialised homing missiles, such as ones that home on magical emanations. Use the previous rules as a guideline.

An incoming missile can be targeted for attack. It has defence of 25. If hit, roll damage: 15+ points of damage disables/destroys it; otherwise it is unaffected.

Guided cannot be combined with Cone or Melee. It can be combined with Automatic, representing a salvo of missiles; when the missile makes its attack roll, it is treated as a Burst attack using as many missiles as were fired, minus any that were shot down. "Smart bombs" can be created simply by adding the Dropped and Short Range restrictions.

A weapon may take multiple guidance options by taking this quality multiple times. This makes it harder to jam the weapon, and gives it a second lock on or attack roll if the first fails. For example, many modern torpedoes are both sonar-homing and operator-guided.

The first level of Guided Missile (any type) counts as two qualities.

Hardpoint or Hand-held

A "Hardpoint" weapon is mounted on a hardpoint, pod, or pylon. It can be traded in a later mission for any weapon of the same size and same or lower Engine Point value, subject to its availability. It takes about 10 minutes to remove and replace a Hardpoint weapon with another weapon. A character may buy "spare" weapons at 1/20th their Engine Point value that are kept at base for replacement in this way, or may swap weapons with other engine of similar size and type.

A "Hand-held" weapon is carried in the hand. It is treated as a hardpoint weapon except that it is vulnerable to being disarmed, lost, dropped, etc., but can be exchanged in only one round. An engine cannot have more Hand-Held weapons ready to use than it has hands.

Increased Threat

Most weapons have a threat of 20. This quality increases the threat range by 1 (for example, to 19-20). It can be taken multiple times, further increasing the threat range.

Indirect Fire

The weapon can fire shots in a high ballistic arc, like a grenade launcher, ballistic missile, or Howitzer. This lets the gunner shoot at targets hidden behind buildings, hills, or other obstacles (or shoot over the horizon, if the range is long enough).

If it is used to make an indirect fire shot, the attacker must be able to see the target, or someone else must spot it and communicate its position to the attacker. This will usually require a Fantastic Science check. In most cases, indirect fire involves using weapons with the Blast quality to attack an area. If a creature or engine, rather than area of ground is attacked, it is treated as having full concealment (50% miss chance).

A weapon can fire indirectly at 10 times the usual number of increments (100 increments for most weapons). Note that the actual range increment is not increased: thus, Long Range fire will be rather inaccurate.

If the attack misses, an observer can note where the attack hit and send a correction (or the attacker can correct by his or her self, if the target is in sight). Each correction gives a +2 bonus to hit, only to cancel any range increment penalties. It takes a full action for a distant observer to transmit a correction via communicator.

A weapon with Indirect Fire quality can be used normally at no penalty. It cannot be Melee, Cone, or Stream.

Long Range

This quality increases the range increment. Long Range can also be taken multiple times; each time it is taken, double the increment.

The base increment is suitable for machine guns, short-range rockets, and light cannons. Taking one level of Long Range is good for tank guns and guided missiles. Taking two levels is good for long-range missiles and spacecraft weaponry.

A lower increase can be specified if the GM desires — for example, Long Range could also be used to multiply the increment by 1.1 to 1.99 rather than 2. This is useful if trying to duplicate a real weapon.

Muscle-Powered

This lets the engine add its Str bonus to damage if this weapon is used as a one-handed Melee weapon, or 1.5 times Str bonus if used as a two-handed Melee weapon, or half Str bonus if the weapon is Thrown.
A Muscle-Powered weapon can make any number of attacks unless it has the Thrown weapon restriction (in which case it can make another attack only after the Thrown weapon is recovered...).

A weapon can only be Muscle-Powered if it has the Melee or Thrown Weapon restriction.

Semiautomatic

A semiautomatic weapon fires one shot per attack (effectively acting as a single shot weapon). Some Feats, however, allow characters armed with semiautomatic weapons to fire shots in rapid successions, getting in more than one shot per attack.

Stream

The effect of a Stream weapon is similar to a cone, except that the weapon's effect is narrow and linear (affecting everyone in a stream 5'/1.5 m wide). Otherwise, use the rules for Cone, including the reduction of the range, with the exception that a successful save always negates damage rather than halves it.

Stream counts as two qualities.

Stun

The attack only inflicts subdual damage.

Trap

This weapon lays a minefield, spikes, or some other similar device. The projectile "sits and waits" until someone triggers it. If someone walks into the target area, they get a Reflex Save (DC 15) to avoid it. Trap can be taken with the Melee restriction to simulate a booby trap placed by hand or released from the engine. Without these weapon restrictions, it can be deployed at range — a successful ranged touch attack against a Defence of 10 means the Trap was fired into the correct area.

Unlimited Shots

The weapon does not run out of ammunition or power. It can fire indefinitely, usually drawing on the engine's own power supply. This need not be taken if the weapon has Muscle-Powered. It usually cannot be taken in conjunction with Automatic, Guided Missile, or Volley.

Unlimited Shots counts as 4 qualities.

Volley

An attack with the Volley quality fires a large volley of poorly guided projectiles, such as a salvo of unguided rockets or a broadside of cannon balls from multiple guns. The attacker may fire a number of shots up to the weapon's entire magazine capacity. He or she does not add a Base Attack Bonus or Dexterity Bonus but does add +1 per projectile fired.

The maximum number of shots that can hit is the number fired. On a critical hit, rather than increasing damage, double the number of shots that hit (up to the maximum).

If firing against a group, the attacker determines how many shots to aim at each target. Separate attack rolls are made for each target. Determine how far the furthest two targets are from one another. The attacks are made as for volley fire against one target, but for each 10 m/30' or part thereof that separates the furthest two targets, all the attack rolls suffer a -1 penalty.
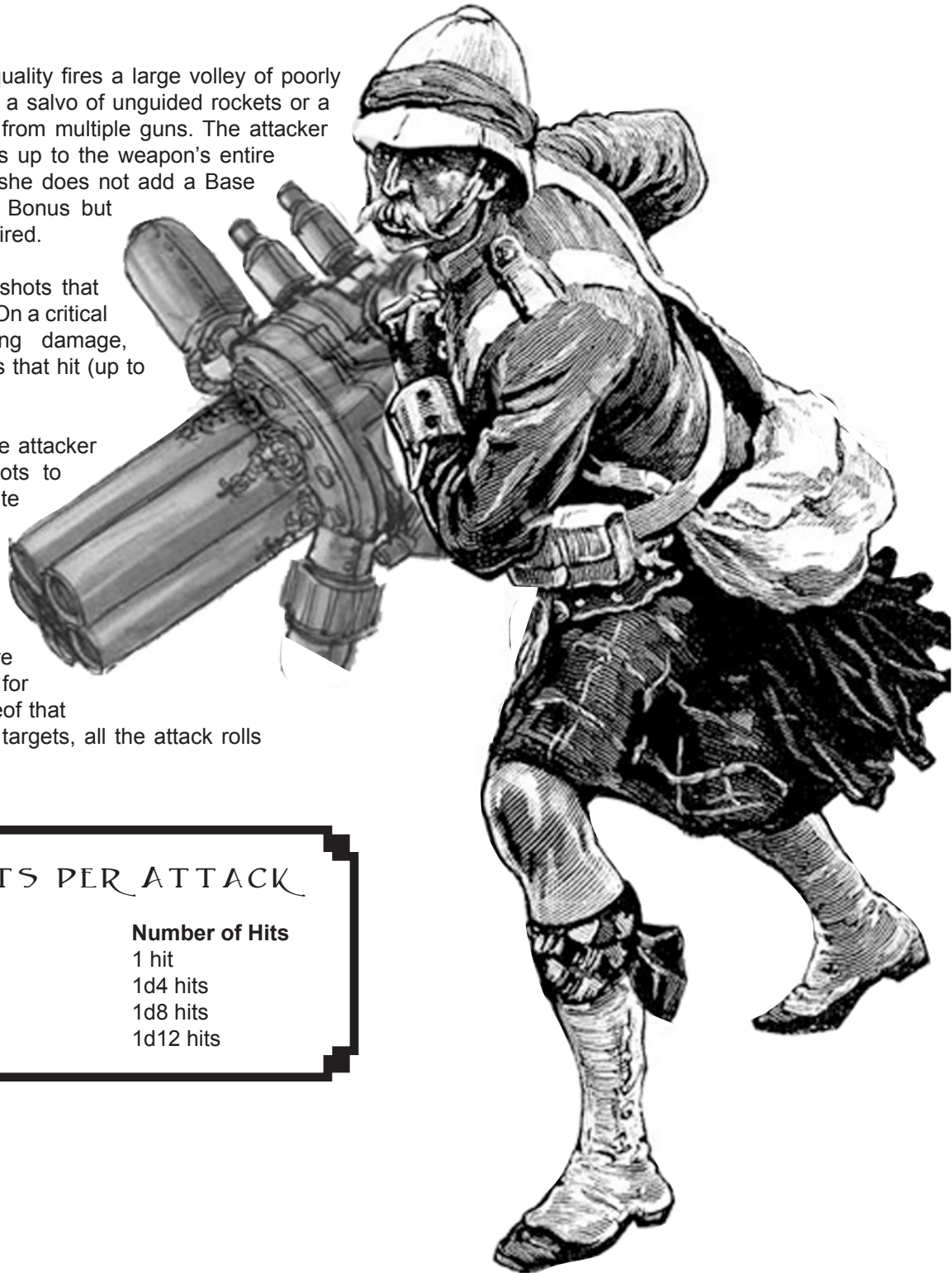
VOLLEY HITS PER ATTACK

Attack Succeeded by	Number of Hits
0-4	1 hit
5-9	1d4 hits
10-14	1d8 hits
15+	1d12 hits

WEAPON RESTRICTIONS

Few weapons do everything well, and many have various disadvantages. These are known as weapon restrictions. As with weapon qualities, a single restriction can only be taken once unless specifically permitted. Some restrictions are especially onerous and so count as two or even three restrictions (some even require the purchase of another restriction).

Crew-Served (Vehicle only)

The weapon requires two or more people to operate it — usually the gunner and one or more loaders.

This must be taken in conjunction with the Slow-Firing restriction; it can be taken multiple times. Each time, double the number of crew required to load the weapon; they must all perform full actions to do so. Thus, a cannon that requires a crew of 8 to operate is a x3 restriction.

Dropped

The weapon is a bomb, mine, etc. that must be dropped from a flying engine that is approaching the target. Instead of the usual 10 range increments, the dropped weapon can reach a base 1 range increment per 1,000' (300 m) of the sum of altitude and speed of the releasing engine. Bombs take a -4 instead of -2 penalty per range increment. This cannot be used with Cone, Stream, Melee, or Thrown.

Exposed (Vehicle only)

The gunner must be outside the engine's Armour on the round the weapon fires (and stay exposed until his or her next action in the following round). An exposed character can be fired at with no Armour protection. An example of this weapon restriction would be a machine gun mounted on a bracket atop a tank whose gunner must lean out the hatch to use. It cannot be taken if the engine already has the Open Defect.

Fixed Arc of Fire (Vehicle and automaton only)

The weapon has a very limited arc of fire and must be aimed by pointing the engine. For example, a set of fixed forward-firing guns on a fighter plane, or a ramming prow. The weapon can only be fired at targets in the specified arc that may require a successful Pilot Skill check (which can be opposed by the pilot of a target engine).

Specify the arc of fire: Front, Rear, Left, Right, or Top. Engine that can fly or move underwater can also specify a Bottom arc.

Less Ammo

The weapon is only good for a few rounds of firing, and then runs out of ammunition or power, or burns out. This restriction can be taken up to 5 times.

If the weapon is Slow-Firing, number of shots refers to the total ammunition aboard the engine, not in the magazine.

Taking this restriction once means the weapon has 9-16 shots; twice limits it to 5-8 shots; three times to 3-4 shots; four times to 2 shots, five times to 1 shot.

Low Penetration*

The attack is easily defeated by hardness (examples include a shotgun blast or hollow-point bullet). Armour or Damage Reduction stops twice as much damage as usual. If the target's protection grants an equipment defence bonus, it is doubled vs. the attack.

Melee

The weapon can only be used as a melee weapon. It can be used to attack or parry within the engine's natural reach. Specify the weapon's size class (normally within one size of the engine that will wield it) and whether it is bludgeoning, piercing, or slashing.

It is usual to take this restriction in conjunction with the Muscle-Powered quality.

Melee counts as two restrictions.

Only In (Specified Environment)

The attack or weapon can only target objects that are on or in a particular limited environment, for example, "only in water" (representing a torpedo) or "only in space" (representing a powerful weapon that requires a vacuum to work). The environment should not be one that is ubiquitous in the campaign (for example, "only in air" is not valid unless a lot of the game action will take place in airless environments). If the environment is very rare in the campaign, the GM may allow this to count as two restrictions.

Short Range

This restriction halves the range increment (round down). It can be taken twice if desired, to get 1/4 range. An even lower increment can be specified if the GM wants to duplicate a weapon in other d20 System books with a low increment, but there's usually no extra cost benefit.

Short range may not be taken if the weapon has Melee or Thrown restriction.

Slow-Firing

The weapon has a restriction that reduces its rate of fire, such as requiring a full action (to aim, charge, or load the weapon) before making each attack. Perhaps the attack generates heat that must be dissipated before it can again fire safely. Consequently, the weapon fires every other round. The weapon cannot be used to attack multiple times in a round, nor can a different character fire it on the round it is being loaded. This cannot be used with Semi-automatic or Automatic.

Record a rate of fire of 1.

This can be taken multiple times; each time it is taken, loading requires an extra round's full action.

Slow-Firing counts as two restrictions.

Static

The weapon cannot be fired while the engine is moving under its own power; perhaps it is too bulky, requires precise aim, or drains too much power, or maybe the engine's fire control system is not advanced enough to compensate for movement. This does not prevent firing while drifting, coasting, etc.

This restriction is commonly taken for artillery-type weapons (especially in conjunction with Indirect Fire).

Thrown

This restriction means it is a thrown weapon. Once thrown, it is useless until retrieved. Specify the weapon's size class and whether it is bludgeoning, piercing, or slashing. The weapon's range increment is divided by 10 (if the base is 500', it will drop to 50') and the weapon can be thrown a maximum of 5 increments.

It may not be taken in conjunction with the Melee or Slow-Firing restriction. It is often taken in conjunction with the Muscle-Powered quality.

It may be taken with Automatic Fire (representing a handful of small thrown objects, for example).

Record a rate of fire of 1, reflecting the fact that the weapon must be reloaded or charged after each shot.

Thrown Weapon counts as two restrictions.

Unreliable

The attack tends to jam. Any time the player makes an attack and rolls a "natural" 1, the weapon failed to fire and jammed, over-heated, or otherwise malfunctioned. It will not work until repaired. Clearing a jammed weapon requires a full action and a successful Dex check against a DC of 10. Note: a character cannot attempt to clear a jammed weapon if he or she does not have the appropriate Weapon Proficiency Feat. If unsuccessful, the character can try again next round. A natural "1" indicates the jam is severe and cannot be cleared without an hour's work and a successful Craft (engine) Skill check against a DC of 20.

OTHER CONSIDERATIONS

In addition to special qualities and restrictions, a weapon may have other considerations, as noted below. These considerations may affect the final cost.

Multiple Weapons on an Engine

A single crewman on an engine can only attack with a single weapon at a time, no matter how many are built into the engine. Exception: If he or she has multiple attacks, and uses a full attack action, these extra attacks can be made with the same weapon (unless it has a Single Shot or Slow-Firing Rate of Fire) or they may use a different Alternate Weapon (or Ammo).

Alternate Weapons (or Ammo)

If the engine's operator has access to multiple different attacks, each secondary weapon costs less. This is because he or she can only use one weapon per round. For 1/10 the original cost (minimum 1 Point), an engine can be given another weapon that is of the same or lower Point cost than the engine's first weapon. This can represent either a new weapon or the same one with alternate ammo.

Different Gunners

Weapons are normally designed to be used by the Engine Pilot. If the engine has multiple crewmen, however, some may have their own weapons, allowing each to fire. If a weapon is in this category, note it as requiring a "different gunner" and pay for it at full cost. After it is acquired, additional alternate weapons may also be bought for that extra gunner, at the reduced cost given above. Note: Two characters may not fire the same weapon in a round, however, even if using multiple attacks.

Hand-Held Weapons

It is assumed that weapons are attached to the engine, but they may, instead, be designated as Hand-Held. A Hand-Held weapon can be lost or grabbed by an enemy, and the engine must have arms to hold it. Engines can, however, swap Hand-Held weapons with other engines. To do this both weapons must be the same size so that handgrips and such are compatible. Hand-held weapons can never be assigned to different gunners; they must be fired by the Engine Pilot.

Multiple Attacks with Hand-Held Weapons

The wearer of personal armour or pilot of an automaton may use the normal rules for multiple attacks with two weapons if his or her engine has a weapon in each hand.

WEAPON COST

If the attack delivers damage, multiply the dice of damage by the cost shown for the chosen dice size on the Weapon Damage Cost Chart.

Example: A missile could inflict 5d6 damage (giving a 100' range increment). The cost of each d6 is 7 Points. The missile will cost 5 x 7 = 35 Engine Points.

If a special attack, the cost is equal to the (modifier + 10) multiplied by 1 if smoke, 2 if flare, hot smoke, riot gas, or tangle, and 3 if nerve gas. Thus a +5 nerve gas attack costs (10 + 5) x 3 = 45 Engine Points.

Weapon qualities or restrictions will also affect the Engine Point cost of the weapon. If the weapon has one quality multiply the engine point cost by 1.5. If it has two or more qualities, multiply the engine point cost by the number of qualities. Thus, a weapon with 3 qualities would cost three times as much in engine points.

If the weapon has a restriction, divide the engine point cost by 1.5. If it has two or more restrictions, divide the cost by the number of restrictions. Thus, a weapon with 2 restrictions would cost one-half as much.

Example: A weapon has an unmodified cost of 30 engine points. If it has one quality and three restrictions, then the cost is 30 times 1.5 (the quality) divided by 3 (three restrictions) = 15 engine points. If a cost is fractional, drop all fractions. Thus, 22.7 engine points is rounded down to 22 engine points.

Once the engine point cost is determined, the GM adds this to the total cost of the engine that houses the weapon. If the weapon is not part of an engine, then the GM can assign a Purchase DC based on the formulae in Chapter Four.

Chapter Six: Prosthetics

Prosthetic replacements are common in the Imperial Age, especially among veterans of the various battles and wars that plagued the century. Historically, these prosthetic replacements were limited to wooden legs and eye patches. In a fantastic engines campaign these prosthetics can be quite elaborate. A marriage of steam, clockwork, and electricity can produce adequate, if inferior, replacements for lost body parts. Most prosthetic limbs require some method of operation unless the campaign is advanced enough (or uses magick) to allow for neural impulses to move the parts. Prosthetic legs are easier to use than arms in this regard. The GM will need to make the call on how elaborate a prosthetic works when "turned on." For example, a PC with a prosthetic arm below the elbow may use the lower arm and hand as a club without needing to turn it on, while a full prosthetic arm may need to be activated before taking any action (such as reaching forward and picking something up).

The inferior aspects of prosthetics are important in an Imperial Age campaign. No one would voluntarily remove a perfectly functioning body part for such a replacement; therefore, prosthetic body parts are created out of necessity and lack designer modifications typical of a cyberpunk campaign. Imperial Age prosthetic limbs are bulky, obvious, and functional.

Operation

Most prosthetic engines are clockwork devices, since wearing a steam engine on one's person is both unwieldy and dangerous. Prosthetic limbs must be "turned on" in some way. The normal method is a switch that is operated by hand. Once on, the limb will perform a single function until it has either completed that function or is turned off.

Prosthetic legs are easier in this regard, as a single flick of the switch can order a leg to move forward or backward until the owner switches it off. A leg engine can also be programmed to ascend or descend a flight of stairs (although the owner would prefer a lift). Turning is usually a function of the owner, using his biological parts to actually make the turn.

Prosthetic arms and hands are more difficult. A hand can be programmed to grasp and release objects, while an arm can be programmed to reach and retract. More complex movements can be recorded and either hardwired into the prosthetic or added as a program. No matter how complex the movements, a typical prosthetic arm will never come close to the utility of a biological one.

Prosthetic limbs impose a –2 Dex penalty on the wearer. Turning on a prosthetic requires a move action, and any attack with the prosthetic is considered a full round action (to accommodate turning it on and the actual attack).

Perfect Operation
Some Game Masters may prefer an Engines campaign that includes fully functional prosthetics, even if that world does not allow magick or other F/X abilities. In this case, the rules regarding operation may be ignored, in whole or in part (some GMs may wish to keep the Dex penalty even if the prosthetics are fully functional). Purchase DCs and Craft DCs remain the same.

Construction and Repair

Engine-driven prosthetic attachments are complex devices, whether clockwork, steam-driven, or other exotic means. Consequently, a character must have the Craft Prosthetics feat and make a DC 30 Craft (engines) check to build a prosthetic attachment.

Repairing a damaged or non-functional prosthetic attachment requires 10 hours of work and a successful Repair check (DC 25). A character needs both an engineer tool kit to facilitate repairs. Without one, a character takes a –6 penalty on the check.

Installation and Removal

Installing or removing a prosthetic attachment requires a successful Treat Injury check. A character with the Prosthetic Surgery feat suffers no penalty on the check. Removing a prosthetic attachment without proper surgery causes lasting physical trauma to the patient's body, dealing 1d4 points of permanent Constitution drain.

Prosthetic Threshold

A biological creature can only have a number of prosthetic attachments up to 1 + his Constitution modifier without penalty. For each prosthetic attachment gained beyond that threshold, the owner suffers a negative level. For each negative level, the owner takes a –1 penalty on all skill checks and ability checks, attack rolls, and saving throws; and loses one effective level or Hit Die whenever level is used in a die roll or calculation. Further, a character with psionic powers loses the ability to manifest one power of the highest level she can manifest (player's choice), while a character with spellcasting ability loses the ability to cast one spell of the highest level he can cast. This loss persists until the negative level is removed. Negative levels caused by having too many cybernetic attachments remain until the offending attachments are removed.

The penalties for psionics and spellcasting may be ignored if the GM allows automata to use these powers in his campaign.

Creating Prosthetic Engines

The construction rules given in the Engines chapter applies equally to prosthetic engines. Most prosthetic engines will be small (limbs), tiny (a hand or lower leg), or diminutive (an eye). Prosthetics always have 1 crew, which is the wearer of the prosthetic engine. The strength of the prosthetic (if applicable) is independent of the wearer. Prosthetics do not have initiative or manoeuvrability modifiers, since dexterity is based on the wearer.

Prosthetics do not have a speed score unless the wearer has prosthetic legs. If the wearer has only one leg, then the prosthetic may not have a higher speed than the wearer. If the wearer has two prosthetic legs, then he moves at the slower speed (if different) of the two prosthetic legs.

Prosthetic engines generally have the noisy, open, and reduced endurance defects. Most prosthetics also have the restricted path defect.

The final cost is determined normally, although the GM may wish to add a bonus to the purchase DC for exotic parts (such as a "thought crystal" which enables the wearer to move the limb with his mind, or "living metal" that can translate nerve impulses). All prosthetics are considered custom-made, since they must be created or modified for the wearer.

Prosthetic Strength

Realistically, a prosthetic arm is not capable of lifting its maximum capacity without tearing apart the flesh and bones it is attached to. It is the GM's call whether he wishes to enforce this reality in his campaign and disallow wearers to hoist heavy loads, mitigate it with an F/X fix (the limb is enchanted to protect the wearer from lifting stress), or ignore it entirely. In any case, the engine cost is the same and the limb can still bring its full strength to bear when attacking or crushing objects.

A character with a prosthetic limb that is also wearing personal armour may use the full strength of the arm, as the armour will absorb the stress.

Prosthetic Engines in Combat

Defensively, prosthetics are ignored in combat. The wearer's own defence bonus and hit points are used against attacks. The only exception to this rule is when the prosthetic is directly targeted. The prosthetic still gets the benefit of the wearer's defence bonus, which is added to its own.

CHAPTER SEVEN: SAMPLE ENGINES

The following engines were built according to engine rules in the previous sections. Purchase DCs assume that the engines are factory models.

ANALYTICAL ENGINES

Detective Engine: This large device sits in Scotland Yard. While the engine cannot do any actual detecting on its own, it can analyse clues and information to determine whether a detective's theory is viable.

Crew 1, Defence 6, Hardness 5, HP 100, Size G, Qualities: Automatic Programming (Int 16), skill (Investigate +5), Defects: reduced endurance (several hours), restricted path (immobile), very noisy, Purchase DC 48.

Instant Phonogram: A variation of the telegram, this device allows one to transmit her voice across a telegraph wire and embed the message on a phonograph record at the destination. A messenger would then deliver the record to the intended recipient, who can play back the message on a gramophone. Because of the machinery required, instant phonogram recorders are more commonly found in middle and upper class households. Most people simply go to the telegraph station (telegrams are still popular when expediency is required) and record their message in a booth. If the recipient is at the receiving station, the telegraph operator may play the record for her at the station before giving her the record. Recipients who receive the record at home but do not have a gramophone may take the record to the nearest telegraph station and listen to the recording for a nominal fee.

Crew 1, Defence 9, Hardness 4, HP 30, Size G, Defects: reduced endurance (several hours), restricted path (immobile), very noisy, Purchase DC 16.

Library Engine: A few cities around the globe have installed a colossal library engine in their city libraries. The engine has an automatic card catalogue that can be accessed at a station. Once the appropriate book is found, the librarian need only punch in the key code of the book (based on the new Dewey Decimal System) and the engine rings a bell and displays the code to an "engine librarian" in the appropriate section of the library. This engine librarian plucks the book off the shelf and puts it on a conveyor belt that sends the book to the front desk (or research room).

Crew 10, Defence 2, Hardness 5, HP 100, Size G, Qualities: Automatic Programming (Int 16), skill bonus (Research +10), Defects: reduced endurance (several hours), restricted path (immobile), very noisy, Purchase DC 34.

Tactical Engine: This engine allows the military to better monitor troop movements. An officer using a tactical gains a +5 bonus when making a Knowledge (tactics) check.

Crew 1, Defence 6, Hardness 6, HP 150, Size G, Qualities: Skill bonus (Knowledge (tactics) +5), Defects: reduced endurance (several hours), restricted path (immobile), very noisy, Purchase DC 36.

AUTOMATA

Domestic Servant: This automaton is dressed as a butler and performs many of the same functions. This is an "Indian model," which means that it has a second set of arms (allowing it to hold a tray while keeping a set of hands free). The face is made of porcelain. The domestic servant is programmed to complement humans (which is why it has a Bluff skill). The domestic servant is a clockwork model, requiring rewinding every 2 hours. Affluent owners with multiple automaton domestic servants may program them to wind each other.

Init +2, Man +2, Top Spd 4 (1), Defence 12, Hardness 5, HP 25, Size M, Qualities: Accessory (sculpted appearance), Automatic Programming (Int 10, Wis 10, Cha 12), extra arms (2), skills (Bluff +3, Diplomacy +3, Profession +3, Search +3), Defects: noisy, reduced endurance, Purchase DC 42.

Iron Lancer: This soldier automaton sports a centaur design. The engine is located in the "horse body" and fed from beneath the tail. A rotating multi-barrel machine gun is built into the Iron Lancer's left arm. While a popular story paper, the Adventures of Tommy and Lance, involves a young soldier that rides an Iron Lancer like a horse, actual soldiers know that the body of the automaton gets way too hot to do this without adding weight to increase the armour and insulation. The legs would need to be reinforced as well, losing the speed advantage of the centaur design.

Pass: 2, Init -1, Man -1, Top Spd 12 (1), Defence 9, Hardness 15, HP 50, Size L, Qualities: Automatic Programming (Int 10, Wis 10), jumping x2, targeting (machine gun) +3, Defects: noisy, one hand, reduced endurance, Purchase DC 39.

> ***Machine Gun:*** *2d12 damage, automatic x2, extra ammo (200)*

PERSONAL ARMOUR

Dragon: This infantry war machine first saw combat in the Franco-Prussian War. It looks like an armoured giant. It is notorious for its horrific effects, including tearing things apart with its claws and burning infantry and cavalry with its flamethrower. The Dragon needs coal every 3 hours.

Crew: 1, Pass 0, Cargo 0, Init –1, Man –1, Top Spd 4 (1), Defence 9, Hardness 15, Str: +8, HP 100, Size L, Defects: noisy, poor visibility, reduced endurance, Purchase DC 39.

> ***Flamethrower:*** *4d6 damage, burning, cone, fixed area (front)*

> ***Claws (2):*** *2d8+8 damage, armour penetration (ignore 10 pts Hardness), muscle-powered, melee*

Infantry Body Armour: This steam-enhanced personal armour is common infantry equipment on battlefields involving land ironclads, kalis, and other war machines. The armour must be refuelled every 6 hours. Some variants include shoulder and arm-mounted weapons.

Crew: 1, Pass 0, Cargo 0, Init 0, Man 0, Top Spd 6 (1), Defence 10, Hardness 15, Str: +6, HP 40, Size M, Defects: noisy, reduced endurance, Purchase DC 34.

PROSTHETICS

Arm: This clockwork arm replaces the original. The wearer must turn it on and off on his own and the limb must be rewound every few hours.

Defence 11, Hardness 5, Str 15, HP 10, Size S, Defects: noisy, open, reduced endurance, restricted path, Purchase DC 30.

Centaur Harness: The centaur harness attaches to the lower body of a legless wearer, giving him four legs in a roughly horse-shaped frame. The frame also houses the engine (it is slightly awkward for the wearer to refuel himself). Controls are placed at the front of the harness, allowing the wearer to manually control the legs and any weapon mounts. The engine smokestack is placed at the rear.

Pass 2, Top Spd 12, Defence 9, Hardness 6, Str 18, HP 40, Size L, Defects: noisy, open, reduced endurance, Purchase DC 36.

Hand: This clockwork hand replaces the original. The hand is articulated but the fingers do not move automatically (they must be manipulated by another hand). The hand is usually kept in a fist, allowing for immediate use in combat.

Defence 12, Hardness 5, Str 12, HP 5, Size T, Defects: open, restricted path, Purchase DC 31.

Leg: This clockwork leg replaces the original. The wearer must turn it on and off on his own and the limb must be rewound every few hours.

Top Spd 5, Defence 11, Hardness 5, Str 15, HP 15, Size S, Defects: noisy, open, reduced endurance, Purchase DC 32.

Tripod Harness: This bizarre harness replaces the legs with a clockwork base and three legs. The wearer can wind the springs and turn the legs on to move in any of three directions. The springs must be rewound every 6 hours. Steam engine variants have been conceived but so far have not produced a practical design. Destroying one leg will topple the harness.

Top Spd 6, Defence 10, Hardness 6, Str 15, HP 20, Size M, Defects: noisy, open, reduced endurance, Purchase DC 33.

VEHICLES

Airship, Cargo: Cargo airships carry heavy loads that would be extremely difficult to ship via land or sea. The load an airship can carry is limited only by the size of its airbag. Cargo airships usually have larger boilers (which are more noisy) than passenger airships and are less maneuverable. The cargo capacity of these airships, of course, is the best in their class.

Crew: 5, Pass 15, Cargo 38,000 lbs, Init –4, Man –4, Top Spd 17 (1), Defence 2, Hardness 5, HP 200, Size C, Defects: noisy, volatile, Purchase DC 43.

Airship, Passenger: Essentially a long cabin or gondola slung underneath a steam-heated canopy of lighter-than-air gas, airships provide unparalleled service to transport cargo across any form of terrain. Among the most luxurious forms of transportation available are the passenger airships that provide amenities rivaling any of the great ocean liners.

Crew: 5, Pass 50, Cargo 28,000 lbs, Init –4, Man –4, Top Spd 17 (1), Defence 2, Hardness 5, HP 200, Size C, Qualities: accessories (luxurious interior), rooms (kitchen, sick bay), Defects: noisy, service crew (-10), volatile, windows, Purchase DC 44.

Airship, Warship: When it comes to warfare, air power can be essential to victory. The warship class of airships fills the role of air support admirably, serving as a well-armed firing platform that is extremely mobile and that has the advantage of height. Turrets with cannons are built on platforms that surround the heated airbag, and some warships are known to carry armed autogyros or rocket-pack squadrons to provide even more firepower. The great cargo capacity of warships makes them ideal for ferrying supplies and troops to the front lines of any conflict.

Crew: 15, Pass 15, Cargo 60,000 lbs, Init –4, Man –4, Top Spd 17 (1), Defence 2, Hardness 15, HP 200, Size C, Qualities: navigation (basic), rooms (kitchen, conference room, sick bay), search light, Defects: flammable, noisy, reduced endurance, service crew, volatile, weak point, Purchase DC 48.

> **Cannon (6):** 6d10 damage, crew served, fixed armament, slow-firing

Autogyro: A personal-transportation aircraft, autogyros are quite popular with amateur pilots and those that want the convenience of air travel. Usually, an autogyro seats only one or two people and carries little cargo, its main body suspended underneath a whirling propeller blade. Autogyros are incredibly agile, able to hover in place and take off or land almost anywhere. Many police agencies and journalists utilize autogyros to reach sites of special interest either in the city or country without having to worry about street traffic.

Crew: 1, Pass 1, Cargo 50 lbs, Init –1, Man –2, Top Spd 30 (3), Defence 6, Hardness 5, HP 50, Size M, Defects: open, very noisy, Purchase DC 33.

Bicycle: This two-wheeled vehicle runs on energy produced by its user (pedal-power). During the Imperial Age, most bicycles were of the "penny-farthing" type. These bicycles had one wheel that was much larger than the other. The driver sits atop the large wheel.

Crew: 1, Pass 0, Cargo 0 lbs, Init -1, Man +1, Top Spd 7 (1), Defence 10, Hardness 1, HP 5, Size M, Defects: High Ground Pressure, Open, Reduced Endurance (few hours), Road Vehicle, Purchase DC 13.

Hansom: This two-wheeled horse-drawn carriage is operated by a driver sitting above it. The carriage is open in the front, although some models have a door covering the legs.

Crew: 1, Pass 2, Cargo 100 lbs, Init -1, Man -1, Top Spd 0, Defence 9, Hardness 5, HP 30, Size L, Defects: High Ground Pressure, Open, Reduced Endurance (several hours), Restricted Path, Road Vehicle, Purchase DC 20.

Coach: This is a four-wheeled horse-drawn carriage. It comfortably seats two drivers and up to four passengers. Upper middle class households consider the coach a status symbol.

Crew: 2, Pass 4, Cargo 200 lbs, Init -2, Man -2, Top Spd 0, Defence 8, Hardness 5, HP 50, Size H, Defects: High Ground Pressure, Open, Reduced Endurance (several hours), Restricted Path, Road Vehicle, Purchase DC 25.

Icarus: This amazing vehicle can actually launch a crew into space in order to explore the moon. On Earth, the Icarus is propelled into space by a giant cannon. It is presumed that the Icarus will use its less-powerful engine to free itself from the moon. It will then use steam jets and a glider to return safely to Earth.

Crew: 1, Pass 3, Cargo 200 lbs, Init –2, Man –2, Top Spd .5G, Defence 8, Hardness 6, HP 100, Size H, Qualities: Environmental systems (life support), Inertial navigation aids, searchlight, sensors (optical – 2 miles), Defects: glider (200mph in atmosphere), noisy, reduced endurance (few days), Restricted Path (moon and back), Purchase DC 36.

Ironclad: This steel, steam-powered monstrosity marks the end of the sailing ship's dominance of the high seas. It is a low, blocky, unwieldy vessel with a metal hull propelled by a powerful steam engine. A pair of powerful cannons mounted in a rotating turret gives the ironclad warship tremendous firepower.

Crew: 10, Pass 0, Cargo 4000 lbs, Init –1, Man –2, Top Spd 24 (2), Defence 8, Hardness 15, HP 200, Qualities:, Defence: noisy, poor visibility, reduced endurance (few hours), Size H, Purchase DC 45.

> **Heavy Cannons (2):** *6d8 damage, armour-piercing, long range, crew-served.*

Kali: Originally called the Spider, British soldiers in the Afghan campaign re-christened this hexapod artillery war machine after the multi-armed Hindu goddess of death. True to its namesake, the Kali carries two machine guns and a flamethrower on its back. It requires fresh coal every 2 hours.

Crew: 1, Pass 0, Cargo 0, Init –2, Man –2, Top Spd 8 (1), Defence 8, Hardness 15, HP 75, Size H, Defects: reduced endurance, very noisy, Purchase DC 46.
> **Flamethrower:** *4d6 damage, burning, cone, fixed area (front)*
> **Machine Gun (2)**: *2d12 damage, automatic x2, extra ammo (200)*

Land Ironclad: A land ironclad is the steam version of the modern tank bristling with weaponry and rolling across terrain that would frustrate lesser conveyances with ease on steel-spoked wheels or rubberized tracks. Land ironclads are incredibly heavy and somewhat ponderous on the battlefield, but their firepower and armored hulls more than make up for their sluggish handling. Cannons are the most common weapons found onboard a land ironclad, and some even carry detachments of infantry inside the steel shell to deploy before, during, or after a battle for scouting and other purposes.

Crew: 2, Pass 6, Cargo 2000 lbs, Init –3, Man –3, Top Spd 20 (2), Defence 8, Hardness 15, HP 200, Size H, Qualities: firing ports (6), Defects: poor visibility, reduced endurance, very noisy, Purchase DC 41.

> ***Cannon:*** *6d10 damage, crew served, slow-firing*

Steam Automobile: The popular "horseless carriage" is one of the most common forms of steam-powered transportation available. Many models are normally constructed to fit various roles. Sturdy, dependable, and requiring only a portion of coal to operate, versions of the steam carriage can be seen in use in nearly all areas of a society.

Crew: 1, Pass 3, Cargo 200 lbs, Init –2, Man –3, Top Spd 70 (7), Defence 8, Hardness 6, HP 70, Size H, Quality: headlights, Defects: High Ground Pressure, Noisy, Reduced Endurance (several hours), Road Vehicle, Start-up Time (10 min), Windows, Purchase DC 27.

Steam Bicycle: The steam bicycle has gained a reputation for speed and mobility unparalleled among steam-powered ground transportation. The steam bicycle requires only a handful of coal to operate and can fit into the average horse stall.

Crew: 1, Pass 0, Cargo 0 lbs, Init 0, Man 0, Top Spd 75 (7), Defence 10, Hardness 6, HP 50, Size M, Qualities: Headlight, Defects: High Ground Pressure, Noisy, Open, Reduced Endurance (several hours), Road Vehicle, Start-up Time (10 min), Purchase DC 30.

Submersible: A submersible is a cigar or teardrop-shaped canister, within which lie the steam boilers that power the screws and the brave crew who pilot such the vessel. Serving onboard a submersible is no easy task, and the rigors of undersea travel take their toll on these fragile conveyances, but they nonetheless remain exquisite examples of steam engineering. The engine must be refueled every 3 hours. Some military versions exist with various forms of weaponry, including a ramming prow, torpedoes and depth charges.

Crew: 20; Pass: 10; Cargo: 2,000 lbs; Init: -4; Man: -4; Top Spd: 52 (5) surface, 35 (3) submerged (depth range 400 ft); Defence: 6; Hardness: 15; HP: 100; Size: G, Qualities: life support, navigation (basic), searchlight; Defects: noisy, poor visibility, reduced endurance, Purchase DC 54.

Chapter Eight:
Running a Campaign

This chapter is devoted to aiding you, the Imperial Age GM, on how to incorporate these rules into your own campaigns. By now, you're probably overwhelmed by the amount of material offered in this supplement. You've read the campaign styles in Chapter Two and you've been bombarded with everything from giant automata to steam presses. How can you synthesize all of this for your campaign?

SETTING LIMITATIONS
This is the cardinal rule of Imperial Age Engines, right below the Golden Rule of Roleplaying. Just because all of these rules are included in the supplement does not mean that you have to use them all. Pick and choose what you like and ignore the rest. If you don't want giant automata on your battlefields or steam-powered prosthetic limbs on your soldiers, disallow them. If you think that the automata feats are a little too anime, exclude them from your engine pilots. Imperial Age Engines was developed with an eye towards diverse campaign styles. It was never intended that any but the most fantastic campaigns would include every rule or possibility.

STEAMPUNK VS. STEAMPULP
So you like what you've read and you start to envision a Victorian world with giant airships, automatic servants, and fearsome weapons of war. Some of your player characters have prosthetic limbs and your engineer is building a powerful submersible engine. You're definitely in steampunk territory, right?

Yes and no.

While the term "steampunk" has become fashionable in literary circles when referring to any story of an alternate 19th century with advanced technology, the word itself is derived from cyberpunk. The cyberpunk genre has a stable of tropes: a near future dystopian setting run by autonomous mega-corporations, a breakdown of social order, and a blurring of man and machine. Cyberpunk literature and roleplaying games tend to focus on the outsiders of society, private detectives, computer hackers, and mercenaries. The corporate elite acts as employers or adversaries to this impoverished underclass. Player characters are expected to live fast and die young.

That's probably not what you felt while watching 20,000 Leagues Under the Sea or The League of Extraordinary Gentlemen. These stories and others focus heavily on the adventure aspects. The heroes and villains are larger than life. Nemo is the mad scientist, creating a powerful new weapon that he uses to enforce his will on the world. "M" is an over-the-top arms dealer that must be stopped before he unleashes powerful new weapons on the world. Standing in their way are the heroes, whether they be scientists and two-fisted sailors or a team of literary superheroes. These adventures have nothing to do with the blurring of man and machine or warnings about the growing division between rich and poor. They are straightforward adventures with fantastic technology.

In short, they're pure pulp, or, to use the Victorian equivalent, penny dreadfuls.

While the term "steampulp" is starting to catch on in blogs and websites, in truth many of these "steampulp" stories are just pulp adventures in Victorian clothing. Modern "steampunk" stories tend to borrow the "look" of cyberpunk but not necessarily the attitude. The protagonists are often well-to-do middle class scientists or aristocratic inventors dabbling in new technologies. Even in stories were fantastic engines are prevalent the emphasis is on adventure rather than being a parable about the dehumanisation of society through technology (although H.G. Wells' The Time Machine is such a statement).

One of the problems with incorporating cyberpunk elements into the Imperial Age is that Victorian societies are not as black and white as the typical cyberpunk delineation of "haves" and "have-nots." Wealth does not guarantee one privilege in society, as that is a birthright. One can be an aristocrat with empty coffers, and society looks down on nobles that turn to industry to regain fortunes. By contrast, many newly rich industrialists feel entitled to the advantages of nobility and feel stymied by the glass ceiling. Violent anarchists (a word that equates with "terrorists" in the Imperial Age vernacular) are not necessarily poor. Some of them are quite rich, upset with foreign occupation or archaic social orders.

A true steampunk campaign would cast the PCs as the lower class of Imperial society, never trusting anyone completely. Many lower class men sport steam-powered prosthetic limbs, "gifts" from their industrialist employers to aid them in their work. Of course, these prosthetic limbs still belong to the company, and a fired or resigned employee will suddenly find

himself on the street with missing limbs. If fired, it is almost impossible for them to find work, as their surgically removed limbs are signs that they did not perform adequately in their last job. Their wives and daughters are forced to sell themselves on the street to make ends meet, further dehumanising the flesh that remains unmolested by technology. The prosthetic black market thrives and employed labourers fear being accosted and relieved of their limbs by "rippers," who chop off their limbs to sell to these black markets. Leaving the victim alive is optional. It is a bleak, noir-ish setting.

INTRODUCING ENGINES

Now that you've thought about the types of engines you'd like to include and their impact on society it's time to determine their prevalence. Do you want a marvellous engines campaign or a fantastic engines campaign? In other words, would you rather have fantastic engines in the hands of a few inspired engineers, or are they commonplace in your society? Do you prefer to run an historical engines campaign, with any inventions closely modelled on actual Imperial Age inventions or would you rather open the floodgates to steam-powered automata and impossibly large war machines?

Even a fantastic engines campaign need not impact normal society. Fantastic engines could be limited to military applications, preserving civilian society as it was. Impressive war engines could be the talk of a tea party or parlour visit, but outside of the occasional military parade no civilian has ever seen them in action.

In the hands of a few, fantastic engines become pulpish, showing up as the adventure necessitates. This is the best way to incorporate Imperial Age Engines into an already existing campaign. You can always upgrade the marvellous engines campaign to a fantastic campaign later; it will be difficult to sell your players' on their pre-existence ("Of course Britain has always had giant steam automata, you just haven't seen them! Um, yes, I know you probably would have seen them in the Zulu War, but…ah…none were available!").

SAMPLE CAMPAIGN OUTLINES

The following sample campaign outlines are provided to stir your imagination. You may use these as is or mine them for ideas for your own campaigns.

FOR QUEEN AND COUNTRY!

In 1871 a short story entitled "The Battle of Dorking" was published in the Victorian political journal Blackwood's Magazine. Drawing inspiration from the recent Franco-Prussian War, the story involved an invasion of England by an unnamed, German-speaking power and the bleak aftermath. This struck a chord with its Victorian readers and launched a wave of invasion stories.

This campaign takes its inspiration from "The Battle of Dorking." Great Britain has been invaded by the German Empire, and the player characters are on the front lines, operating powerful war engines against a foreign power. Giant automata stand side-by-side with infantry and steam-powered tanks, while war airships bombard the enemy. These airships are protected by autogyros that do battle in the sky.

Alternatively, the player characters could take a subversive role, slipping behind enemy lines and sabotaging their engines and command structure. They erode support for the enemy by providing hope for their conquered countrymen. The PCs could be secret agents in occupied Dover or London, pretending to be German sympathizers while gathering intelligence and conducting sabotage.

In either case, a GM can take inspiration from the World Wars of the next century, as many parallels could be drawn and incorporated.

THE PEACEMAKER

The Peacemaker combines elements of the theatrical interpretations of Captain Nemo and Robur the Conquerer. It involves an engineer that wishes to end all war.

Dr. Gerard deLac was horrified by how easily France fell to the Prussian army in the Franco-Prussian War. He was also appalled by the transitions of French government throughout the last hundred years, starting with the French Revolution, through Napoleon, and up to the recent Paris Commune. Dr. deLac has decided to turn his resources to creating a monstrous engine that would effectively end all war on the planet and bring about a world government based on republican principles.

The player characters find themselves tracking down Dr. deLac while destroying his engines. Dr. deLac has created a number of fantastic engines to support his cause, including a submersible, a land fortress, and an airship. He has recently started constructing automata as well.

In a marvellous engines campaign, the PCs will have to rely on their wits to stop each of Dr. deLac's monstrosities. In a fantastic engines campaign, the PCs may have engines of their own, meeting Dr. deLac's creations in battle.

Rise of the Engines

This campaign uses elements from the movie *Blade Runner*, the *Terminator* trilogy, and the *Planet of the Apes* series. It involves the creation and growth of intelligent automata.

The creation and proliferation of automata has changed the quality of life dramatically. Domestic automata are standard features of middle class households, and even some lower class wage earners are able to own one. Automata make excellent guards, able to keep watch around the clock with very little maintenance. Automaton soldiers make up the bulk of military forces headed into battle.

There is a slight problem, however. A few automata are starting to refuse orders. Some even express a desire to do work other than that which they were built for. The government came to a definitive conclusion: these automata are defective and need to be repaired.

The player characters could take the part of automata repairmen, scientific detectives trained to gauge whether an automata is simply malfunctioning or has become something else. Of course, the repairmen are expected to recommend termination for any of these "intelligent automata." Will the PCs do their duty without question, or will they help these new creatures remain hidden?

A variant of this is the Underground Railroad. Perhaps a neighbouring nation accepts intelligent automata, and the PCs do their part to keep the railroad running. Or perhaps they are government agents seeking to shut it down and punish those responsible.

On the flip side, the PCs could be intelligent automata. They may be struggling to survive or attempting to get out of their oppression. They may even try to convert their brethren. Perhaps the rumours are true and there really does exist a set of punch cards that, when installed in an automaton, will raise it to sentience. Perhaps they may even start a revolution, recruiting sympathetic humans to aid their cause.

No Case Too Small

This campaign takes its cue from the film noir of the mid-20th century as well as the cyberpunk genre. The PCs are lower class subjects eking out a living as best they can in a world of fantastic engines.

The PCs may be scientific detectives that are hired for all sorts of strange cases. They may be asked to track down a peddler in illegally procured prosthetics. They may have to figure out why a popular Lord was killed outside of the opera house and why his doting wife is the chief suspect. They might have to uncover why lower class children are starting to disappear. Do intelligent automata really exist, or are human brains being used to power these engines?

The PCs may also be monster hunters. In this case, the monsters are men whose minds have snapped from gaining one too many prosthetics. The monster hunters must pursue their prey through the rookeries, sewers, and underground of London.

Appendix One:
Imperial Age Inventions

These are actual inventions developed during the Imperial Age and beyond, listed by year. Game Masters may use this information in two ways. First, this list provides a guide to whether an invention exists based on the game year of the GM's Imperial Age campaign. Second, it provides insight on limiting "early" inventions in realistic historical campaigns. This is only a guide; fantastic engine campaigns may have steam-driven versions of even later developments, such as computers and engine.

Note that the dates on some of these inventions change depending upon the criteria used by different sources (some count the idea, while others wait until the invention is actually made or available to the general public).

1880   roll film, safety razor, seismograph

1881   electric welding machine, metal detector

1882   electric fan, electric flatiron

1884   fountain pen, linotype machine, punched card accounting, trolley car

1885   AC transformer, Coca-cola, Maxim gun, motorcycle

1886   dishwasher, gasoline engine

1887   contact lens, gramophone record, monotype machine, multiplex railway telegraph

1888   ballpoint pen, drinking straw, hand camera, harvester-thresher, pneumatic tube tire

1889   automobile (steam and gasoline engines), book matches

1890   pneumatic hammer

1891   automotive storage battery, escalator, Swiss army knife, travellers' cheques, zipper

1892   automatic telephone exchange, colour photography

1893   wireless communication

1894   radio transmission

1895   diesel engine, disposable blades, portable motion picture projector, radio signals

1896   electric stove, steam turbine

1897   aspirin, escalator

1898   remote control

1899   automobile self-starter, gas turbine, magnetic tape recorder, paper clip

1900   rigid dirigible (zeppelin), self-heating can

1901   assembly line, instant coffee, safety razor

1902   air conditioner, flashlight, neon lamp, polygraph machine, radiotelephone

1903   airplane, coat hanger, crayons, windshield wiper

1904   ice cream cone, tractor

1905   popsicle, radio tube diode

1906   cornflakes, sonar

1907   colour photographic film, electric vacuum cleaner, electric washing machine, outboard motor, paper towels

1908   cellophane, Ford Model T, Geiger counter, mixer, tea bag

1909   gun silencer, monoplane

1910   talking motion picture, thermojet engine
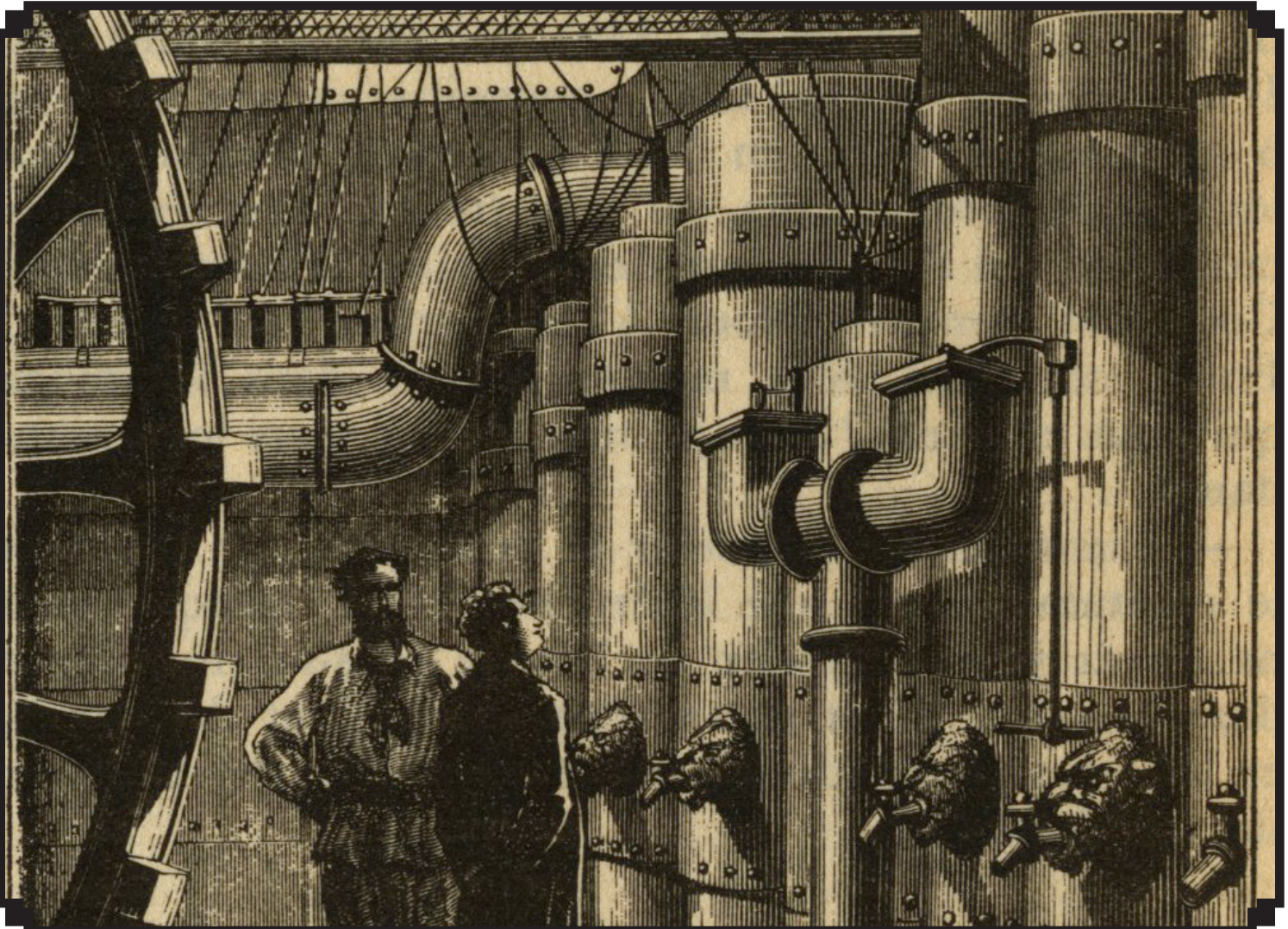
Appendix Two: Intelligent Automata

Players may wish to use an automaton as a character. Whether this is possible is the Game Master's prerogative, but this appendix provides rules and guidelines for allowing this. The rules in this appendix may also be used to create more powerful and unpredictable automaton challenges.

The first thing to note about automaton heroes is that they are able to think for themselves. This may be true sentience, or it may simply be very advanced programming. One of the earliest signs (or warnings, depending upon one's point of view) of self-awareness is a desire for self-preservation. This desire tends to manifest as creative interpretations of its orders to outright reprogramming itself. An automaton hero may have its creator as a friend, but the creator is no longer truly in control.

Possessed Automata

If an Imperial Age campaign allows supernatural elements, then a ghost, demon, fey, or other type of spirit may possess an automaton, effectively giving itself a mechanical body.

If the possessed automaton is being created as a player character, then the spirit chosen should be of an effective class level as the current campaign norm. The appropriate creature type is added to the automaton "race" as outlined below. Game Masters should feel free to adjust the ECL of the possessed automaton if necessary.

A possessed automaton shares the same Intelligence, Wisdom, and Charisma of the possessing spirit. The automaton uses the lowest Dexterity score of the possessing spirit and the automaton (due to the spirit trying to manipulate an unfamiliar form).

By default, the possessed automaton is still subject to the limitations of its normal power source. This can be altered if the possessing spirit has powers to compensate (animating objects, telekinesis, producing fire, etc).

AUTOMATON SIZE

While it is theoretically possible for an automaton to be of any size, this section assumes that player character automata will be of compatible size with its comrades. GMs that wish to allow intelligent automata of other sizes than small, medium, or large may use the stat blocks below as models.

REFUELING

Intelligent automata are assumed to have "eating habits" similar to humans. The GM should determine how many times an intelligent automaton must replenish its power source. Failure to do so will result in the intelligent automaton shutting down until the power source is replenished.

GENDER AND SOCIETY

Intelligent automata are sexless. However they do identify with a particular gender based on their original role. An automaton butler or soldier, for example, would be considered male, while an automaton housemaid would be considered female. While an automaton will identify itself according to this tradition, it does not typically "feel" male or female. At the player's discretion, an intelligent automaton might start to identify itself as a particular gender, even to the point of feeling love for other creatures.

Intelligent automata have a hard time integrating themselves into society. Man is the master of the world, and many have trouble accepting another sentient race as brethren. Even if it can be agreed that an automaton is sentient, most men of society would treat the automaton as he would a small child, a pet, or non-western foreigner. Automatons also have a tendency to belch black smoke, which simply wouldn't do at a dinner party. As a result, automatons are generally banned from social gatherings (unless acting as servants). Even when offered an invitation, most intelligent automata feel uncomfortable with social situations and go out of their way to avoid them.

CRITICAL HITS AND STUN

While intelligent automata do not have internal organs, they do have sensitive areas that can create similar effects. Therefore, it is possible for an automaton to be stunned in combat. An intelligent automaton can also suffer massive damage. Its massive damage threshold is equal to 10 + its bonus hit points.

INCREASING STRENGTH AND DEXTERITY

As engines, intelligent automata cannot improve their Strength and Dexterity scores on their own. Instead, an engineer must improve their design in a workshop. Since this requires major construction, an intelligent automaton must pay the full engine cost as if it were newly built. The intelligent automaton increases its Strength according to the usual engine point costs for engines. Dexterity cost is determined by multiplying the new Dexterity score by 5 to get the engine point cost.

OTHER UPGRADES

Intelligent automata may gain class features, feats, and skill increases normally. An intelligent automaton may also be granted special abilities that are available to all engines. The intelligent automaton must pay for these upgrades normally or take the Collector feat.

The GM should feel free to restrict upgrades if it makes the automaton more powerful than its comrades. He may also add negative levels if he feels it necessary to raise the intelligent automaton's effective class level due to extensive upgrades.

AUTOMATA AND F/X

Intelligent automata should be treated as any other engine in regards to its relation to magic. Whether an intelligent automaton can actually cast spells is based on the nature of magic in the campaign. For example, a GM might determine that an automaton can cast arcane spells because it is ritual-based, while the automaton lacks the ability to reach a deity in order to cast divine spells. Automata normally lack psionic powers; if the GM allows this, he should also remove an automaton's resistance to psionic powers and mind-affecting spells.

Intelligent automata can also be inscribed with runes or other magical "hardwiring" to produce spell-like effects. Intelligent automata should pay the engine cost for this per the spell-like ability quality.

Small Intelligent Automata

Small intelligent automata are roughly the size of children or small animals. Most of them are built as servants, although some military models are created to access tight places, such as tunnels and caves.

Species Traits

Size: Small. Small Intelligent Automata gain a +1 size bonus to Defence, a +1 size bonus on attack rolls, and a +4 size bonus on Hide checks. They suffer a –4 penalty on grapple checks. Small intelligent automata must use smaller weapons than humans use, and their lifting and carrying limits are three-quarters of those of a medium character.

Ability Modifiers: No Constitution score. Intelligent automata cannot raise their Strength or Dexterity as Ability score increases.

Base Speed: 20 feet.

Bonus Hit Points: Small intelligent automata receive 5 bonus hit points.

Natural Immunities: Intelligent automata are immune to disease, poison, and paralysis effects.

Spell Immunities: Intelligent automata are immune to mind affecting and necromantic F/X.

No Ability Drain: Intelligent automata are not subject to ability score damage or drain.

Automatic Fortitude: Intelligent automata automatically make Fortitude saves unless the effect can target objects.

Noisy: Intelligent automata are engines and therefore generate a lot of smoke and noise. Other characters get a +10 on Listen checks when opposing an intelligent automaton's Move Silently checks and a +5 on Spot checks when an intelligent automaton is attempting to Hide (+10 if the intelligent automata is also moving).

Racism: Intelligent automata are rarely considered the equals of biological creatures. They suffer a –2 penalty to diplomacy checks.

Medium Intelligent Automata

Medium intelligent automata are human-sized. Some of them are designed to resemble humans, although they are instantly recognizable as artificial.

Species Traits

Size: Medium. Medium Intelligent Automata have no special bonuses or penalties due to their size.

Ability Modifiers: No Constitution score. Intelligent automata cannot raise their Strength or Dexterity as Ability score increases.

Bonus Hit Points: Medium intelligent automata receive 10 bonus hit points.

Base Speed: 30 feet.

Natural Immunities: Intelligent automata are immune to disease, poison, and paralysis effects.

Spell Immunities: Intelligent automata are immune to mind affecting and necromantic F/X.

No Ability Drain: Intelligent automata are not subject to ability score damage or drain.

Automatic Fortitude: Intelligent automata automatically make Fortitude saves unless the effect can target objects.

Noisy: Intelligent automata are engines and therefore generate a lot of smoke and noise. Other characters get a +10

on Listen checks when opposing an intelligent automaton's Move Silently checks and a +5 on Spot checks when an intelligent automaton is attempting to Hide (+10 if the intelligent automata is also moving).

Racism: Intelligent automata are rarely considered the equals of biological creatures. They suffer a –2 penalty to diplomacy checks.

Large Intelligent Automata

Large intelligent automata are created as labourers and war machines. They have trouble squeezing through regular doorways and stand out in crowds.

Species Traits

Size: Large. Large Intelligent Automata take a -1 size bonus to Defence, a -1 size bonus on attack rolls, and a -4 size penalty on Hide checks. They gain a +4 bonus on grapple checks. Large intelligent automata may use larger weapons than humans use, and their lifting and carrying limits are twice those of a medium character. A large intelligent automaton may wield a large weapon in one hand and a huge weapon in two hands.

Ability Modifiers: No Constitution score. Intelligent automata cannot raise their Strength or Dexterity as Ability score increases.

Bonus Hit Points: Large intelligent automata receive 20 bonus hit points.

Base Speed: 30 feet.

Fighting Space: Large intelligent automata occupy a 10-foot-by-10-foot fighting space.

Reach: Large intelligent automata have a 10-foot reach.

Natural Immunities: Intelligent automata are immune to disease, poison, and paralysis effects.

Spell Immunities: Intelligent automata are immune to mind affecting and necromantic F/X.

No Ability Drain: Intelligent automata are not subject to ability score damage or drain.

Automatic Fortitude: Intelligent automata automatically make Fortitude saves unless the effect can target objects.

Racism: Intelligent automata are rarely considered the equals of biological creatures. They suffer a –2 penalty to diplomacy checks.

Level Adjustment: +1

RESOURCES

Inspiration for Imperial Age: Engines came from a multitude of sources. While there are certainly many more, the following resources were particularly inspirational to the author.

BOOKS

Gibson, William and Sterling, Bruce. *The Difference Engine* (1990). The information age starts a century early, thanks to the perfection of Charles Babbages' analytical engine. There is also some alternate history involved, as the United States is politically fractured prior to the American Civil War.

Verne, Jules. *Twenty Thousand Leagues Under the Sea.* (1870). Possibly the most famous of Verne's novels (vying with Around the World in Eighty Days), this novel tells the tale of Captain Nemo and his submarine. Both also appear in Verne's sequel (curiously dated prior to the events in this novel), the Mysterious Island.

------ *From the Earth to the Moon.* (1865). This light-hearted novel sees astronauts shot to the moon in a bullet-shaped vessel from a giant gun.

------ *Paris in the 20th Century.* (1994). Published close to a century after his death, this novel is invaluable for Game Masters to get an idea of what an Imperial Age mind would speculate about the future of technology.

------ *Robur the Conqueror.* (1886). An inventor seeks to prove the supremacy of heavier-than-air craft over lighter-than-air craft. Robur returns in a sequel, Master of the World.

Wells, H.G. *The Time Machine.* (1895). An unnamed Victorian travels into the future to see the fear of Industrialization played out.

------ *First Men in the Moon, The.* (1901). An inventor creates a substance that allows him to pilot a vessel to the moon. A lunar civilization is discovered.

------ *War of the Worlds, The.* (1898). While the tripod war machines are alien, they are extrapolated from a Victorian mind. Replace the Martians with Prussian engines and you have a horrific invasion borne of Imperial Age technology.

FILMS

20,000 Leagues Under the Sea. (1954). This Disney classic provides the definitive "look" for the Nautilus submarine.

Around the World in 80 Days (2004). This film has a few "fantastic engines" in it, including a jet pack and a variation on an airplane.

Conquest of the Planet of the Apes. (1972). The sequel to Escape From the Planet of the Apes (itself a sequel of a sequel) concerns the treatment and revolution of the ape underclass. As with its predecessor, this provides great inspiration for an automata revolution (ironically, this film about the plight of apes is a stronger parallel for automata than most modern "machine revolution" films, which usually posit a central intelligence).

Escape From the Planet of the Apes. (1971). While not a steampunk film, this movie about intelligent apes from the future visiting the human-dominated past can provide inspiration for an Engines campaign dealing with the first intelligent automata, especially society's reaction to the possibility of more intelligent, nonhuman creatures.

League of Extraordinary Gentlemen, The. (2003). This film showcases a steampunk Nautilus and a plethora of gadgets, including metal body armour, submachine guns, a tank, and an automobile.

Master of the World (1961). This film combines two Jules Verne works about the captain (played by Vincent Price) of an airship attempting to ensure world peace through the threat of bombardment. The airborne vessel is a large zeppelin-looking airship that is actually held aloft by propellers.

Steamboy (2004). This is an anime take on Victorian steampunk. Many fantastic engines are showcased.

Time Machine, The. (1960). George Pal's take on the H.G. Well's classic. Much better than the 2002 version, although the look of the time machine is impressive in both.

Wild Wild West (1999). Based on the television series, this film follows the antics of a couple of U.S. Secret Service agents attempting to rescue the President. Many fantastic engines and other inventions are on display, including a giant spider vehicle.

GAMES

GURPS Steampunk. (Steve Jackson Games) While written for the GURPS system, this book provides a plethora of material on the Imperial Age.

GURPS Steamtech. (Steve Jackson Games) This supplement to GURPS Steampunk provides many more engines and gadgets that could be rewritten in d20 terms.

OGL Steampunk. (Mongoose Publishing) This book is an excellent resource for those GMs wishing to combine magic and technology in a steampunk setting that includes many traditional fantasy elements.

Sorcery & Steam. (Fantasy Flight Games) This well-written supplement was the first to bring steampunk into the d20 system. This book is invaluable for creating a society where magic and science work together to create fantastic engines.

Space 1889 (Heliograph Games): A game of colonial adventure on Mars in the late Victorian era. Steampunk elements include Ether Flyers (starships) and Airships borne aloft by the power of Martian Liftwood.

Steam and Steel. (EN Publishing) Another excellent resource, this supplement provides an alternative system for creating Imperial Age engines, although the focus is on adding steam technology to a traditional fantasy world.

GRAPHIC NOVELS

Batman: Gotham by Gaslight. (1989) A DC "Elseworlds" story that transplants the famous superhero to the Victorian Age. Jack the Ripper is the enemy.

League of Extraordinary Gentlemen (Vol. 1 and 2). (1999). The London of these graphic novels (originally a comic book miniseries) is even more steampunkish than the movie version. Literary characters are gathered to fight enemies of the British Empire. Volume 2 has the League facing the Martian invasion.

Ruse (2001-2004). A comic book series from now-bankrupt CrossGen comics, featuring the adventures of a Consulting Detective in a fantasy world modeled on Steampunk and Victorian Science Fiction.   Ran for 26 issues, the first 12 of which were collected in two graphic novel editions before the company went out of business.

TELEVISION

Doctor Who (1963-1989, 1996, 2005+). This long-running British series about a time and space traveller known only as "the Doctor" has occasionally dipped into Victorian themes and steampunk elements. Of particular interest are the serials/episodes "The Talons of Weng-Chiang," which contains many Victorian homages, "The Girl in the Fireplace," with its clockwork robots, and "Remembrance of the Daleks," in which a steampunk-evoking variation on the Doctor's classic enemy, the Special Weapons Dalek, is introduced.

Legend (1995). This short-lived series was about a dime novelist that "becomes" one of his characters in the old west with the help of an eccentric scientist inventor. Inventions included steam-driven cars and lightning guns.

Secret Adventures of Jules Verne, The. (2000). This short-lived series drew its inspiration from Jules Verne's works. Many steampunk engines are on display, including a dirigible and a time machine.

Wild Wild West, The (1965-1969). This television series about U.S. Secret Service men in the Old West contained numerous gadgets.

The Imperial Age

COMING SOON:
Imperial Age British India
Imperial Age Anarchism
Imperial Age Faeries
Imperial Age London