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SPACE

1889

RED SANDS



PLAYER'S GUIDE



SPACE 1889

Authors and Editors: William Reger, Clint Black, Matthew Cutter, Joel Kinstle,
Piotr Koryś, Tony Lee

Space 1889 Created by: Frank Chadwick

Cover art by: Richard Clark

Cover design by: Simon Lucas

Interior art by: Richard Clark, Christophe Swal

Cartography by: Jordan Peacock

Typesetting by: Simon Lucas

William's Dedication: To Jules Verne, H. G. Wells, and Edgar Rice Burroughs who inspired the work, Frank Chadwick who gave it form, and all the intrepid Explorers who give it life.

William's Thanks: Those who believed in me; Shane and Greg; my longtime friends who inspired me; Andre, Ted, Peter, Holly, Avis, and Julie; and my Martian princess Linda.

Pinnacle Thanks: Frank Chadwick, Matthew Goodman

Savage Worlds Created by Shane Lacy Hensley

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RED SANDS

Hear me, my people! Gather round and listen! From beyond the skies the invaders came, a world full of rapacious beings who called themselves "Earthmen," but we call red devils.

The red devils have returned, spreading like a dirty plague among the planets, carrying their prejudice and belligerence with them.

Too late our leaders discovered the Earthmen would not be satisfied with simple trade but desired conquest, tyranny, and enslavement in the guise of "civilizing the heathen."

Too late they realized the violent power the Earthmen had—advanced rifles, cannons capable of ranges far beyond our own, and rapid-firing guns that could tear apart our massed legions from long distance.

They stole our flying technology and placed it in ships clad in metal, powered by foul-smelling fuels from resources squandered as cavalierly as our long-lost ancestors. Now, they maneuver around us, ignoring us like we ignore the durge fly, confident in their might and fearing only each other.

But in the hills and back streets one can feel the resentment building. The Ground Cleansers' ranks are swelling and the Cult of the Worm is laboring toward the surface. I hear a messiah is arising who will rally our people and splash our sands with the Earthmen's blood!

Listen, my people, and harken to my words—look for the Red Sands!

—Overheard ranting of the street prophet Yurias, by Sergeant Major Ian McSweeny, 1st Syrtis Major Native Infantry Battalion A, Syrtis Major Colonial Brigade

SPACE 1889: RED SANDS

India may be the jewel of Queen Victoria's English Empire on Earth, but other precious stones shine brighter. The finest of these is Mars. First visited by Thomas Edison and Jack Armstrong in 1870, Mars inflamed the imaginations of Earthmen and lit the torch of exploration to the other planets.

Two decades have only touched the shell of the various worlds. Dry Mars, while smaller than Earth, has almost equal surface land to probe. Moreover, Mars has wonders galore! Its canals make the Suez Canal of Earth seem a city sewer drain. The pumps, locks, and water movers are so far advanced that after almost twenty years the finest engineers of Earth have yet to decipher their mechanisms.

But they will. After all, Earthmen have invented machines that record and play voices, light without a flame, engines that consume liquid fuel rather than wood or coal, even

Barely getting out with our lives, we returned from the Belt in secret, by routes I'll not divulge to ink and paper. Suffice to say the Captain and Helmsman were amenable to a far longer journey and the crossing of a few additional ether waves to ensure no further intervention by our enigmatic nemeses. The mysterious assassins already murdered our Drumsman by poison, poor devil, and Captain Cooper would brook no further delay.

The translation of these glyphs remains foremost in my mind, for if the writings of the Egyptians and Vulcans point to a common source, the very implications could be so staggering as to unseat all prior assumptions.

Only the most effete among our readership will find Ms. Mathieu's performance acceptable. There can be no denying that she makes the role her own—sadly, she does so at the expense of the libretto. Can there be any doubt her many non-sequiturs and numerical asides are an attempt to inject her nouveau leanings into a production whose *conventional* offensiveness?

Perhaps a few, or even one, in the audience made sense of her ramblings. Perhaps he could contact this reviewer who has no time for the assembling of secret messages. Aside from this minor concern, Ms. Mathieu was as charming as ever in the role of the Chamelcon's Handmaiden.

ORIENTAL JOURNEY.

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Our journey was halted near the Libyan border, where officers of the French Foreign Legion—quite agitated and hostile—ordered us at gunpoint to turn back. We could hardly blame our hosts for doing as they were told and asking no questions, but our porters were able to piece together from overheard conversation the cause of consternation. The Legionnaires had lost contact with at least one fort in the remote Libyan Desert, and from what the porters could gather the malady was something far worse than Bedouin raiders. The word they used was "plague."

vehicles that transport people and goods between planets. This is the last decade before a new century and everyone wants a place in history.

Widespread commercial electricity is just being adopted on Earth. Almost without exception, industry is powered by coal-fired steam boilers. Transportation of the era is notable for its general lack of single-person conveyances, in favor of trains and horse-drawn carriages. Sailing and steam vessels ply the worlds' oceans. Aerial flyers coast upon the skies of Mars. Alexander Graham Bell's telephone is in use in urban centers, and British orbital heliograph stations transmit flashes of light—much like Morse Code—almost instantaneously between Earth and Mars.

By 1889, the waning 19th century is popularly acknowledged as an age of wonder. Earth's nations have expanded among the planets, planting colonies, guiding people they see as savage heathens on the path toward what they consider to be true civilization, and introducing European justice and security to all lands.

FIN DE SIÈCLE

Yet not all is well in the twilight of the Nineteenth century. The European powers teeter on diplomatic brinkmanship, edging ever closer to war. The scientific exploits of vanguard inventors lead to advents in destructive technology whose impact can scarcely be grasped by the Victorian mind.

Natives of all the planets show signs of revolt, listening to the whispers of entities that do not always appear as they truly are. Anarchists and revolutionaries work to bring about the eradication of official establishments, while doomsayers warn of the end of days.

Worst of all, speculations abound regarding a new, rising power, a far-flung and secretive cult of deadly assassins some have dubbed the Brotherhood of Luxor. Headed by an inner circle of secretive masterminds named after the Titans of Greek myth, only the Brotherhood knows what it wishes to achieve with its acts of atrocity.

SPACE TRAVEL

Since the existence of ether was proven as scientific fact, numerous inventions have been built to function from its use, none more prominent than Thomas Edison's ether propeller, first demonstrated in 1870. This is the crucial device that allows vessels to soar between the worlds, carrying passengers from Earth to Mars, Venus, and even more exotic destinations. While interplanetary travel is hardly commonplace, it is an accepted facet of life in 1889.

Space voyages tend to be lengthy, sometimes lasting a month or longer. Ether flyers—as they are typically known—make use of solar boilers. A reflecting lens focuses the sun's rays onto a boiler, thus producing steam to power the ether propeller and the rest of the ship's systems, without the need for combustion or smoke (both of which tend to be lethal to spacefarers).



LIFTWOOD

Liftwood trees grow in a certain region of the Martian highlands, and nowhere else. Attempts to grow the trees in greenhouses have all failed to date, as have laboratory attempts to synthesize the specific protein that concentrates in its sap. This complex organic compound has been found to produce so-called “contragravitational effects”—in layman’s terms, anti-gravity. In practice, ships constructed from liftwood soar through the skies as lightly as balloons or zeppelins.

This has led to a renaissance of flight, brought on by Edison’s discovery of liftwood in 1870 (yet another development of his and Jack Armstrong’s fateful expedition). Since then, aeronautical research has resulted in countless advances. Zeppelin-Daimler airships, held aloft by hydrogen and utilizing highly safe and efficient internal combustion engines, are in widespread use in Europe, on Earth. On Mars, the kites of the Martians ply the orange skies much as sailing ships did on Earth’s sea of old. With liftwood so scarce, piracy is common among the Martian flyers, and conflicts over liftwood supplies are constant.

CLASH OF NATIONS

In 1889 Britain is a constitutional monarchy, with Queen Victoria presiding alongside Parliament. As far as republics go, America’s is relatively stable, while France’s is

SYRTIS MAJOR, Feb. 5—The gunship I
 With portions of Her Majesty’s
 colony on Mars racked by fiery
 revolt, and the becalmed
 Oenotrian War flaring up
 the implications of the situ-
 ation at Shastapsh cannot be
 overstated.

Cairo
Munitions
New
Jersey
U.S.A.
possible
supplies

While the Colonial Office
 persists in its issuance of state-
 ments to the contrary, the fact
 remains that Shastapsh is not
 secure now, if it ever was secure
 in the first place. Moreover,
the mutiny plaguing Shastapsh
is not isolated to that city—it is
endemic to the region, and spread-
ing like sickness through every
corner of Victoria’s fair empire.
 Someone must take action.

Troubling whispers and such.

Clattering at the keyhole too clumsy for burglars.

And that Martian who bumped into me at the canal
and paused for a moment, as if he knew me.

Again my thoughts turn to the dig east of
Karkarham—those corpses that were gone the next
day, and the tattered black robes marked with a
most curious silver Ψ .

Signs point to the Brotherhood of Luxor, about
which I have received dire warnings.

We must persist.

The past holds the key to the future, and it takes
Explorers to unlock the past.

We're unsure as to whether it's mineral or
vegetable, and the ultimate source could be
Luna or Venus. All we know for certain
is that it's lothal. We're quite lacking
on reliable information, old chaps, so
contact that Society of yours before we go
risking our necks again! Cheers!

not. Germany and Russia remain hereditary monarchies, with traditions deeply rooted in bloodlines that stretch back for centuries. Japan is a society in transition, whose feudal beliefs are blending quickly into those more proper for an age of machines.

What all these nations have in common is their aspiration to be a "great power." In 1889 a nation is not called a great power unless it can command interplanetary colonies, robust trade among nations and worlds, and liftwood.

More than any other aggressor state in the 1880s, Belgium's actions have consistently thrown international relations into chaos and disarray. Driven by their King Leopold's overriding obsession with establishing a new empire safe from French and German meddling, the Belgians have pursued aggressive imperialistic agendas in the Congo and on Mars. Resentment of the Belgians on Mars has led to the generally poor reception of anyone whose complexion is ruddy enough to earn him the epithet, "red devil."

A SOCIETY OF EXPLORERS

Operating under the aegis of the British Association for the Advancement of Science (BA), the Explorer's Society has been gaining traction in recent years as the primary source of information on the various exotic locales of our Solar System.

With a recent influx of new adventurers, scientists, and aeronauts, the Society is poised to cultivate nothing less than a latter-day scientific and cultural renaissance. Still, much of the Explorer's Society remains wedded to the concept of the Society as a brotherhood and Old Boys' Club first and foremost, and a scientific clearinghouse second. Clashes between aristocrat Explorers and those of lower status—increasingly admitted to the Society on the basis of their talents rather than their blood—occur with greater and greater frequency. Some see this as necessary progress, other view it as an aberration from the established social order and buck the trend any chance they get.

Called "Section X" by those who are in the know, the Explorer's Society keeps a low profile despite its recent recruitment campaign. This is necessary to protect the Society's members from scrutiny. For the most part, the concern is mere privacy. With the rise of revolutionary cults and subversive organizations on Mars, a modicum of secrecy is crucial to protect the very lives of the Society's operatives. Several Explorers have been lost in the Asteroid Belt, the steppes and highlands of Mars, and even in remote locations on Earth, such as the Libyan Desert.

After years of inaction, the Explorer's Society has revised its policies extensively. It is no longer just a society of researchers; instead its members are resolved to stand against the forces of ignorance, superstition, and violence. Faced with such would-be despots, they hold aloft the torch—the light of Knowledge—yet stand ready with the sword.

MAKING HEROES

Welcome to *Space 1889: Red Sands*, a game of pulp exploration and adventure in an alternate late-Victorian era. In this setting, intrepid adventurers wander the untamed lands not only of Earth but also the moon, Mercury, Venus, and Mars. These heroes brave hostile creatures, elements, and threats to protect innocents and save civilizations from destruction.

Every world has secrets. Some can dramatically tip the balance of strength between nations, some can destroy that balance altogether. Individuals and organizations lusting for the ultimate authority have found their best route to be filling the vacuums they plan to create. Some are revolutionaries, like the Fenians desiring independence for the Irish. Others, anarchists who staunchly believe the best government is no government at all. Then there are radical Martians, such as the Ground Cleansers, who are unwavering proponents of the extermination of every Earthman on Mars.

THE EXPLORER'S SOCIETY

The British Association for the Advancement of Science (BA) oversees numerous affiliations dedicated to pushing the frontiers of science, including the famous Royal Geographic Society, also known as Section E.

Less known is the last chapter founded, Section X, or the Explorer's Society. This branch devotes itself to exploring the fringe mysteries of science, the secrets of the past, and exposing conspiratorial occult cabals in the name of science.



Because of the wide, varied spectrum of its activities, the Explorer's Society is more egalitarian and accepting of foreigners and women than other organizations of the time. Although it rarely makes headlines or garners publicity like its fellow divisions due to the sensitive cases it handles, the Explorer's Society enjoys greater private recognition than any other in the network.

The organization supports affiliates in many ways, from funding to legal representation to investigations.

Finance: All members receive a monthly recompense commensurate with tenure and contributions. An initiate or novice begins at £1 a month, gaining an additional £1 for each increase in rank. Parties on a Society assignment can expect the organization to cover all essential expenditures as well.

Publicity: The Society is equipped to manage any member's public relations and provide an official outlet for the coverage of members' activities. Thus, it is unspoken but understood that associates need not boast about their exploits publicly in order to gain notoriety. So too, members need not spend vast amounts to publicize their accomplishments. The Society is known to commission popular, prolific authors—the likes of Arthur Conan Doyle, Jules Verne, and H. G. Wells—to pen tantalizing epics of its members' daring escapades.

Legality: The law is an important pursuit to the organization. The Society endeavors to procure the proper documents required for its members on assignments, and retains and avails practiced attorneys to counsel and represent members—extricating them from legal predicaments when necessary. (Treat this as Connections: Legal for all Society members.)

Information and Research: In the Society, members have access to one of the most comprehensive archives and roster of experts on Earth. The home library of the Society headquarters in London boasts the best collection of information (+2 to all Investigation rolls regarding any Earth legend, history, or culture; +1 for other worlds). The organization has branches in such major cities as Cairo, New York, Hong Kong, Syrtis Major (Mars), and Fort Collingswood (Venus). Each enables the most exhaustive research on the locale possible (+1 to Investigation rolls).

The Explorer's Society is more than a funding source and springboard to adventure; it is a social club as well. The organization expects heroes to attend a reception once every month, both to update the top brass of their activities and to regale fellow associates with tales of exploration and invention. Heroes on assignment are excused from these functions, but should resume attendance at the first opportunity afterward to retain the Society's good will.

Potential recruits and prospective members are carefully screened to assess their true character before they are invited to join the Explorer's Society.

CHARACTER CONCEPTS

The heroes of *Space 1889: Red Sands* are human (by and large), but they are far from average. They have aligned themselves with the British Association's Explorer's Society, forever marking them as unique a collection as any found throughout the worlds. The Explorer's Society enables men and women from all origins and ideologies to cooperate and function as a determined unit in broadening the bounds of scientific knowledge, unraveling mysteries, stifling advocates of violence, and promoting peace and tolerance in the preservation of Earth and other worlds alike.

Foremost, members are united by their stance against villainous conspiracies such as the Brotherhood. It is a struggle largely unrecognized. It is time for *you* to take up the struggle! The permutations of potential characters in *Space 1889: Red Sands* are virtually infinite. Given the endless available choices, following is a list of common character types and example backgrounds to spur your imagination.

Ponder for a few minutes what kind of character you'd like to play and, when you've reached a decision, proceed to **Making Characters** on page 9.

Adventurer(ess): Permissive upbringing or a lust for thrills afforded you a life of adventures. Recently, you noticed conflicts are on the rise and becoming more dangerous. Talk abounds that a powerful organization, the Brotherhood of Luxor, is responsible for the crisis. With the Society's backing, you should be able to halt this evil cabal's villainy.

Agent: Spying for a government enlightened you to the factions now taking part in the great game of espionage. Spies behaving oddly, pacifists turning to violence, trivial affairs having greater impact than they should—all point to something, or someone, pulling strings: the Brotherhood of Luxor. You resigned when your superiors would not believe you. It is time to act, lest your country fall into ruin.

Anarchist: You are convinced any regimes that imposes its will on reasonable people is wrong. You've devoted your life to stopping them. Lately, you see something far worse. Those you used to trust have disappeared or become more apprehensive. There is a secret group offering support to any who strike certain choice quarries, but doing so often kills innocents alongside the intended targets. The masterminds

behind the group are aligned with the Brotherhood of Luxor. You joined the Explorer's Society to end its reign before it could properly begin.

Archeologist: Your services have never been in greater demand. Yet, you hear whispers of parties other than museums or universities seeking treasures of lost civilizations. You know of wondrous relics, far more than they appear to be. Indeed, ancient records often speak of extremely powerful devices. What you uncover should only be possessed by those you trust to promote the common good.

Big Game Hunter: You've led safaris into all types of terrain and witnessed countless strange phenomena. Of late, your allies seem less reliable, and those you've trusted for years either vanished or refused to cooperate. Something is changing their attitudes and the Brotherhood of Luxor is prowling just beneath the surface. You're about to begin the greatest hunt of your life.

Clergy: Missionaries and evangelists spread their faith to the least fortunate corners of all worlds. You have seen those you have helped be misled or harmed. Some warned that the Brotherhood of Luxor frowns on your efforts, and is certain to kill you if you persist. You joined the Society to continue your sacred duty. With peers and fellow affiliates, you intend to unmask the ungodly Brotherhood.

Colonial Officer: As part diplomat and part administrator, your constant warnings to the Foreign Office of potential dangers got you cashiered. You learned there are things more lethal than bullets—like the alleged manipulation of global events by the Brotherhood of Luxor. Membership in the Explorer's Society enables you to follow your gut instincts and prove you were right all along.

Criminal: Smuggler, poacher, thief, or even a crime boss, all criminals are a part of society—just on the fringe. You never minded being on the “wrong side,” as long as everyone abides by the scoundrels' code. But then someone started muscling in on your territory, and permanently silencing those who wouldn't play along: the Brotherhood of Luxor. You turn to the Explorer's Society because it provides a convenient cover while you dig into the Brotherhood's doings.

Detective: Much like the famous Sherlock Holmes, you value sharp, deductive reasoning. In the past few cases you have detected puzzling inconsistencies and alarming evidence that hint at a grand, sinister plot. You sided with the Explorer's Society to gain assistance in solving the puzzle presented by the enigmatic Brotherhood.

Doctor: Your practice took you to places you never thought you would go. Among other things, it exposed you to hints of gruesome, unlawful experiments. You tried to find the culprit, but instead your reputation was almost ruined by false accusations of malpractice and negligence. The Explorer's Society is your best shot at clearing your name and bringing the villains—the Brotherhood—to justice!

Entertainer: Whether a respected thespian or a mere vaudeville act, all performers know the show must go on. But yours stopped when a terrorist blew up your friends to

get to the audience in the Royal Box. What enraged you was the ignorant police blaming the incident on your pals, portrayed as anarchists when you knew they weren't. Now you hunt the culprit you heard might have planned it all, the Brotherhood of Luxor. You owe them a special finale.

Guide: You've blazed trails across perilous territories on many worlds and always returned home safely. In your travels you collected stories of a certain Brotherhood of Luxor stirring up trouble in pristine locales far from civilization. You joined the Explorer's Society to lead like-minded individuals in ending the Brotherhood's evil exploitations.

Inventor: From your private lab you conceive new devices to benefit entire worlds. However, you are aware that some inventions are not being utilized to aid, but rather to *destroy* worlds. It is time to take your wondrous gadgets and your new affiliation with the Explorer's Society for a field test against the Brotherhood of Luxor.

Jungle Lord/Lady: Raised in the wilderness by natives, you were brought to civilization and taught manners—courtesies rarely extended to non-civilized “savages.” Before you left the jungle, you heard the Brotherhood of Luxor was bringing a new way of life. Then your old friends fell silent. You fear the Brotherhood may not have their best interests in mind. You aligned with the Society not just to discover more about the worlds, but also to combat the Brotherhood.

Merchant: You always prided yourself on consummating bargains benefiting all parties involved. Lately, you have been undermined by schemers you are certain are harmful to others as well. Promising transactions falling through at the last minute, or old business partners renege on trades, soured you to the point of joining the Society to weigh the Brotherhood's involvement behind the raw deal.

Mechanic: The development of all these newfangled machines opened new avenues for your profession. You've fixed more broken doodads than most people have seen in a lifetime. You also notice that someone is deliberately passing off shoddy, unsafe mechanisms on the common market, and no one knows who. You joined the Society to dismantle the source, before things begin falling dangerously apart.

Officer: When you were an officer in the armed forces you saw anomalies. Anomalies that made you wonder if something more was going on. Confiding your suspicions of a conspiracy known as the Brotherhood of Luxor to your superiors got you discharged from active service, or they dismissed it as paranoia on your part. You enlisted with the Society knowing it's the only way to unmask the Brotherhood and its treachery.

Reporter: News is both entertainment and knowledge. It's also about seeking the truth, with a pen rather than a gun. You chased down accounts of the Brotherhood of Luxor and its diabolical subterfuge. Those stories earned you a permanent vacation instead of accolades from your editor. Hence, you chose to go freelance, reporting now for the Society alongside other truth-seekers.

Sailor: Naval personnel are not as in demand as in older days, but you've still sailed the worlds on dozens of different boats and lifts. During these journeys, though, you saw nasty changes. The waterfront regulars spoke of the power of the Brotherhood of Luxor and their murderous ways. You put no stock in that until several friends were killed in an “accident” that you knew the Brotherhood was responsible for. You joined the Society to avenge your loss.

Scholar: From tutors and governesses to university students and professors, scholars have always been in a unique position to study unusual events. You noticed a potentially disastrous trend in your analysis of current affairs, and it could become a reality if nothing is done to prevent it. The “Brotherhood” does not realize that meddling with history cannot be accomplished on your watch!

Scientist: Research regarding the new worlds begat new advents in modern science. But something unsettling is happening behind all the nascent discoveries. Some of your brilliant colleagues have gone missing or, worse, turned up dead, their labs ransacked or destroyed by arson. Your pursuit unveiled a name: the Brotherhood of Luxor, which you learned has been snatching up scientific breakthroughs, by hook or by crook, before they become popular. Joining the Society gains you both the influence and allies necessary to counter the Brotherhood's insidious network.



Soldier: Britain and other great imperial states exert their influence throughout the solar system. But along with power comes war. Often tasked with spearheading the military ventures of their nation, soldiers are used to being on the short end. But you have figured out that most recent conflicts have a common root in the Brotherhood of Luxor. You allied with the Society as a means to oppose the Brotherhood and avert the unnecessary loss of good men.

Vigilante: You just lost someone of importance to the machinations of a looming specter called Brotherhood of Luxor. You've vowed vengeance against the Brotherhood. You became a Society explorer to take advantage of its vast resources in your quest for justice.

Wanderer: A cowboy, an itinerant laborer, or a wealthy dilettante, while traveling the worlds you sensed drastic changes. Natives are more hostile, inhabitants are less hospitable, and bad things are happening to good people. You've joined the Society to stop anything further from ruining the worlds you knew.

MARTIAN OCCUPATIONS

Canal/Steppe Martians: A canal Martian might be a noble, a warrior, a priest, an airship captain or crewman, or a merchant. In any of these cases, the character has seen

enough of the Ground Cleansers' ways to know that the Martian rebels must be stopped. Steppe Martians are far less likely to join the Explorer's Society, focused as they are on their own tribal ways. The exception to the rule might be a warrior, a herdsman, a hunter, or some other career focused on survival in hostile areas—an exile from his tribe, or an envoy.

High Martians: These natives of Mars tend, as a group, toward extreme jingoism. Some would call it xenophobia. To the High Martians, it is just the path they have taken to survive for so very long on the red planet—they believe that might makes right. It is rare for one to leave his or her own people, much less join the Explorer's Society. That said, a few exceptional High Martians have done so. With the GM's consent, yours might as well. High Martian characters tend to be soldiers, airship crew, or hunters, disillusioned with their own people.

Lizard Men: These beings are rather primitive, but some individuals have proven themselves skilled and intelligent enough to join the Society. They are tenacious foes, cold and calculating planners, and loyal allies when everything is on the line. Lizard men might be servants, hunters, or jungle guides, or some other concept with the GM's approval.



ALIEN CHARACTERS

Just as humans with incurable wanderlust leave their homes and societies behind, so too do some aliens. In this age of interplanetary travel, it is not unheard of to find alien crewmembers on otherwise human vessels. Several aliens have even joined the Explorer's Society, where they gain prestige commensurate with their specialized knowledge of exotic planets, cultures, and languages. With the GM's permission and a feasible background, use the following templates for alien characters:

CANAL OR STEPPE MARTIAN

Adaptable: Canal Martians receive one free Edge.

Drought Resistant: Canal Martians add +4 to Vigor checks versus Fatigue from thirst.

Native Martian: Canal Martians subtract -1 from Strength checks and melee damage when on Earth or Venus, and subtract 10 lbs. from their Load Limit.

HIGH MARTIAN

Drought Resistant: High Martians add +4 to Vigor checks versus Fatigue from thirst.

Flyer: Pace 8, Climb 4", Dive +2" per 1" height lost, max dive of 16".

Grasping Feet: High Martians can manipulate and use their feet like a second set of hands.

Native Martian: High Martians subtract -1 from Strength checks and melee damage when on Earth or Venus, and subtract 10 lbs. from their Load Limit.

Slow Walker: High Martians subtract -1 from Pace, and their running die is d4.

LIZARD MAN

Armor +1: A lizard man's skin is leathery, warty, and as thick as cured leather.

Bite/Claw: Str+d4. A lizard man is never considered unarmed in combat.

Heat Adaptive: Lizard men receive +4 on Vigor rolls against Fatigue from heat and related effects.

Illiterate: There is no written language for lizard men. Therefore, all lizard men have this Hindrance.

Natural Swimmer: Lizard men receive +2 on Swimming rolls, and Swimming Pace equals Swimming skill die.

Primitive: All Knowledge skills cost lizard men twice the normal points to purchase or advance.

Reptilian Sensitivity: Lizard men subtract -2 from Vigor checks versus Fatigue from cold and thirst.

Scent Taster: Lizard Men always "taste" the air, giving them +2 on Notice rolls.

MAKING CHARACTERS

Once you have a general idea of who your hero is, it is time to flesh out the details. Characters for *Space 1889: Red Sands* follow the standard *Savage Worlds* character creation process, with a few minor alterations.

1. TRAITS

To begin, determine the traits that define your hero's capabilities.

ATTRIBUTES

Your hero starts with a d4 in each of his five attributes: Agility, Smarts, Spirit, Strength, and Vigor. You then have 5 points to distribute among them as you choose. Raising an attribute a die type costs 1 point, and you may not raise an attribute above d12.

SKILLS

You have 15 points with which to buy skills. Raising a skill by a die type costs 1 point as long as it is no higher than its linking attribute. It costs 2 points per die type to raise a skill over its linked attribute.

All the skills in *Savage Worlds* rules are available in *Space 1889: Red Sands*. However, the only Arcane Background skill available is Weird Science, with its associated Weird Science Edge (see page 12 for more).

Piloting is expanded to include steering (as a helmsman) for aerial flyers, cloudships, zeppelins, and interplanetary ether flyers.

Boating covers guiding sailing and steam water vessels, as well as submarines, and is a general expertise needed to crew aerial vessels.

Riding encompasses the gamut of animals used for transportation from horses, camels, and elephant to gashants, ruumet breehr, flying skroll, and pacyosaurus.

Persuasion entails all types of eloquence, theatrics, or bargaining.

Driving includes both animal-drawn and steam-powered ground vehicles.

Survival covers foraging in and mapping of an area.

LANGUAGES

Your hero knows a number of languages equal to half his Smarts die. As the Society has its roots in England, one of these languages must be English. List your known languages on the character sheet: you are able to speak, read, and write each language you know (no roll required to communicate). Each permanent increase in your Smarts also earns you an additional language.

Common Earth languages include English, French, German, Russian, Arabic, Chinese, Japanese, Spanish, Italian, and Portuguese. Martian languages include Koline (the trade tongue), High Oenotrian, Parhooni, Umbran, Hellan, Noachan, and, rarely, Khallan. In addition, there are hundreds of remote dialects and offshoots of native

KNOWLEDGE SKILLS

In Red Sands, all available Knowledge skills have two supplementary uses. A single Knowledge roll can be made to reduce penalties for a subsequent Trait roll, provided the GM rules the skill applicable. For instance, Knowledge (Medicine) could be used to reduce penalties to a Healing roll. A success reduces a penalty by 1, or 2 on a raise.

Also, if a character uses his skill professionally during a session (journalist sells a story, businessman closes a deal, etc.), he makes a Knowledge roll. On a success, he earns £1d6 and on a raise, £2d6.

Battle covers ground, naval, and aerial tactics for mass battles.

Business includes accounting, appraising, and bargaining.

Engineering entails the creation of naval vessels, structural engineering, and demolition.

Gunnery concerns the maintenance and operation of stationary weapons, plus exotic artillery such as rockets.

History encompasses archaeology, Earth and Mars history, and sociology.

Journalism covers access to events as well as writing ability.

Law covers international, national, and Martian jurisprudence.

Mechanics includes knowledge of electricity and steam machines.

Medicine incorporates biology, human medicine, and xeno-physiology.

Navigation enables safe journey between planets, as well as ascertaining the direction of travel.

Science covers physics, chemistry, and geology.

Trimsman covers the handling of aerial flyers, aerial skiffs, and cloudships.

tongues too numerous to list. Two other languages, Semaphore and Morse code are not verbal but visual and audio communications, respectively.

SECONDARY STATISTICS

Charisma is +0 unless changed by Edges or Hindrances.

Pace is 6" unless changed by Edges or Hindrances.

Parry is equal to 2 plus half your Fighting skill die type. Edges, Hindrances, and certain equipment can modify your Parry score.

Status is 2 unless changed by Edges or Hindrances.

Toughness is equal to 2 plus half your Vigor die type. Edges, Hindrances, and Armor can modify your Toughness.

2. HINDRANCES & EDGES

Next, decide if you want any Hindrances. You may use the points from any Hindrances you take to gain one of the benefits below. You may choose one Major Hindrance (worth 2 points), and up to two Minor Hindrances (worth 1 point each). The sections on Edges and Hindrances on pages 11 and 12 tell you what choices are available, in addition to those in *Savage Worlds*.

For 1 Hindrance point you may gain another skill point or an additional £5 in starting funds. For 2 Hindrance points you can raise an attribute by one die type or choose an Edge.

Human characters also receive one free Edge. (See the previous page for Martian characters.)

3. STATUS

Space 1889: Red Sands' twilight-Victorian era features a fairly structured and hierarchical class system on the verge of breaking down. The Explorer's Society exemplifies the thinning racial, gender, and societal barriers, serving as a microcosm of the egalitarian views with which Victorian culture is still straining to cope. Meanwhile, a character's Status helps to bridge the divides and lets anybody be *somebody*.

Status is postulated as the true measure of the man. A person's social class may seldom change, but even an urchin with ambition might become as famous as Gunga Din and be recognized by nobility. Indeed, Thomas Edison was just another American until he invented the ether flyer and returned from Mars. Now he is the toast of European royalty.

All characters have Status—starting at 2 (Working Class) unless adjusted by Edges or Hindrances—to represent their station in society. Starting characters are neither greatly esteemed nor especially distasteful. The higher a character's Status, the closer to the top of the class structure they are; a position that has numerous benefits for the well-to-do.

For more information on how Status works in *Space 1889: Red Sands*, see page 31.

4. POSSESSIONS

Each character starts with two sets of attire appropriate to her station, plus £5 (equivalent to \$500 in standard *Savage Worlds* money). You'll want to spend some of your starting wealth on weapons, armor, and other equipment. See the Possessions chapter for a full list of available gear.

5. BACKGROUND

When did you first encounter the mysterious Brotherhood of Luxor? Did you petition to join the Explorer's Society or did it recruit you, and why? Devising a good background helps you figure out how to role-play your character, and gives your GM ideas for themes and complications to work into the campaign.

6. NAME

Finally, give your hero a name. Famous heroes often have two or more names: a birth name, as well as a nickname or alias adopted to safeguard their real identities, preserve their personal reputation, and protect loved ones from retribution.

Give your character a full name and decide whether you want an alternate identity, or simply a unique moniker for him.

NEW HINDRANCES

All standard *Savage Worlds* Hindrances are appropriate for a *Space 1889: Red Sands* game, with the following adjustments:

Bad Eyes: Usually Minor in this setting, as it is correctable by spectacles or monocle. (As always, the Hindrance becomes Major if the hero's eyeglasses are lost or broken.)

Outsider: Covers anyone who stands out, poorly, regardless of purported origin.

Poverty: A character with the Poverty Hindrance begins the game with a Status of underclass, rather than working class.

In addition, you can choose from the following new Hindrances.

AIRSICKNESS (MAJOR)

Suffering from airsickness in *Space 1889: Red Sands* is a serious problem. Your hero must make a Vigor check each time he leaves dry ground to go into the air. On a success he suppresses his illness. On a failure, he is nauseated and suffers a -2 to all trait rolls until he spends an hour on land.

Should his ship get caught in a storm, the hero must make his Vigor check every round until the storm subsides or he fails. If he is already airsick and fails, he suffers a -4 on trait rolls until the storm ends.

COCKY (MAJOR)

Sometimes it's important for foes to understand who they are dealing with, and you always take the time to let them know.

The first round in any combat must be spent announcing just how great your hero is and why foes should just surrender to him now. If for some reason your hero must act instead, it costs him a benny.

Villains with this Hindrance never take a finishing blow, leaving that to their minions, Mother Nature, or a well-designed death trap.

DISOWNED (MINOR)

Your hero did something disgraceful or scandalous in the past, bringing shame or embarrassment on your family. As a result, you have been disowned and your family refuses to acknowledge you. Your hero's starting Status is modified by -1 and starting funds are reduced by half. If also suffering from the Poverty Hindrance, your hero receives only 25% starting funds.

JINGOISTIC (MINOR/MAJOR)

This is the age of imperialism and colonialism, with its widespread belief in cultural superiority. The character with this Hindrance dislikes people from other cultures and believes his own culture to be vastly superior. He can't help belittling other cultures and praising the virtues of his own at every opportunity.

A character taking the Minor version of this Hindrance has a -2 Charisma among cultures other than his own. The penalty increases to -4 for the Major Hindrance. In both cases, the character may not use Leadership Edges with "foreigners" unless he has worked with them for at least one week and succeeded at a Persuasion check. (May repeat the check once per week until successful.)

LAND LOVER (MAJOR)

Some people never feel comfortable leaving solid ground. Your hero cannot buy any skills used to operate sailing ships or aerial flyers (i.e., Boating, Knowledge: Navigation, Knowledge: Trimsman, and Piloting) with starting skill points. Although he can learn these skills through advancement, he never quite grasps the concepts and always suffers a -2 on skill rolls. Worse, his clumsiness affects his fellow sailors, inflicting a -2 to group rolls to operate any vessel where he is a crewmember (including an officer).

MARTIAN BORN (MINOR)

You were born and raised on Mars during your youth, which impacted your musculature. On Earth or Venus (or any world with Earth's gravity or heavier), you reduce your Load Limit by 10 lbs. and suffer a -1 to all Strength rolls. Your maximum age is 18 and your Common Knowledge is Mars-related.

OBLIGATIONS (MINOR/MAJOR)

Although your hero has joined the Explorer's Society, he must also answer to his superiors. These can be military commanders, civilian authorities (such as the Foreign

Office), religious functionaries, or other associations, but your character is legally or ethically bound to comply. You can expect your orders to occasionally be contradictory, inconvenient, or even dangerous. As a Minor Hindrance, your Obligations are binding, and any failure to comply converts this to a Wanted (Minor) Hindrance. As a Major Hindrance, your character's participation is considered crucial. If ignored, his Obligations become a Wanted (Major) Hindrance.

NEW EDGES

Most standard *Savage Worlds* Edges are available in a *Space 1889: Red Sands* campaign. The following Edges are not allowed: any Arcane Background but Weird Science, Arcane Resistance, Improved Arcane Resistance, Soul Drain, Champion, Holy/Unholy Warrior, Mentalist, Wizard, and Power Surge.

The following Edges provide alternative and additional benefits in the *Red Sands* setting.

Noble: This Edge is altered from the core system. Nobles in the Victorian era often had others to handle any obligations due to their station, and the benefits of their status outweighed what obligations they did have. However, a noble title was not a guarantee of wealth. In *Red Sands*, Noble does not convey any major obligations, but it also



does not provide the Rich Edge for free. A hero with this Edge has a starting Status of +1 step, in addition to other bonuses.

Rich: A hero with this Edge has a starting Status of +1 step. He also enjoys the usual benefits of being Rich.

Filthy Rich: A hero with this Edge has a starting Status of +2 steps instead of +1, in addition to the usual benefits of being Filthy Rich.

BACKGROUND EDGES

ARCANE BACKGROUND (WEIRD SCIENCE)

Requirements: Novice

Weird Science creates devices without time-consuming research and huge bankrolls. If you can imagine it, it works! The drawback is these gadgets are not replicable and cannot seem to be perfected for commercial production. But they do perform in a way that is sometimes miraculous to behold.

This background works almost exactly as explained in *Savage Worlds*. Your mad scientist must spend one shilling (1s) per Power Point for materials to recharge her devices, but otherwise receives her abilities and powers as described in *Savage Worlds*.

An explanation is necessary for the power's manifestation, as is a properly pseudo-scientific name for the device. The device itself must weigh the equivalent of a matching mundane item, and the GM must approve the creation.

LINGUIST

Requirements: Novice, Smarts d6+

Your hero has an ear for languages and a rare talent for recognizing similarities between them. A character with this Edge starts with a number of languages equal to his Smarts die, and can make a Smarts roll at -2 to make herself understood in any language or dialect she has heard spoken for at least an hour.

COMBAT EDGES

CANNONEER

Requirements: Seasoned, Shooting d10+

A gunner who can take out enemy ships with a well-aimed shot quickly grows in the admiration of his shipmates. It takes training and a good eye, and the Cannoneer has both. When dealing damage in ship combat, the character may modify his roll on the Critical Hit Table by 1 point either way, as he chooses. He does this after rolling the dice for a Critical Hit.

COUNTERPUNCH

Requirements: Seasoned, Martial Arts, Fighting d8+

Martial artists or bare-knuckle fighters with this Edge know how to respond instantly to an enemy's mistakes. Once per round, the character receives one free Fighting attack against one adjacent foe who failed a Fighting attack against him. This attack is made at -2. The Counterpunch must be a straight attack (no Disarm, Wild Attack, or other maneuvers) and may not be combined with Frenzy or Sweep. It may be used with the Defend maneuver (but not the Full Defense maneuver).

DIRTY FIGHTER

Requirements: Novice

You never learned to fight like a "gentleman," and use any trick in the book to win. Those with this Edge are particularly good at tricks, gaining a +2 to all Trick maneuver rolls.

QUITE FILTHY FIGHTER

Requirements: Seasoned, Dirty Fighter

The only fair fight is one you win. Tricks are second nature to you. Once per round, you may perform a trick in addition to one other regular action without invoking a multi-action penalty.

FLYING KICK

Requirements: Veteran, Martial Arts, Fighting d8+

A flying kick is a running attack that begins with a leap, followed by the attack, and ends with the attacker running past his opponent, all in a single movement. If the hero moves at least 2" before making an attack against an adjacent opponent, he may kick and then withdraw from combat without his foe, or other adjacent opponents, receiving a free attack.

IMPROVISATIONAL FIGHTER

Requirements: Novice, Smarts d6+

Explorers frequently find themselves in situations where they must fight using something not specifically designed for it—torches, broken bottles, parasols, or whatever else is at hand. A character with this Edge has practiced using such improvised weapons and does not suffer the usual -1 attack penalty when wielding them. For more on Improvised Weapons, see page 42.

MARTIAL ARTS

Requirements: Novice, Fighting d6+

Your hero is never considered unarmed in combat, and thereby not subject to the unarmed defender rule.

IMPROVED MARTIAL ARTS

Requirements: Veteran, Martial Arts, Fighting d10+

Your character has truly mastered the fighting arts—either his body and his chi are one, or he's as mean as a viper after a three-day binge. By standing still and concentrating, the hero subtracts 2 points of modifiers for a Called Shot on the next Fighting attack made with hands or feet. The character cannot move during the round this Edge is used.

MARTIAL ARTS MASTER

Requirements: Legendary, Improved Martial Arts, Fighting d12+

As Improved Martial Arts, but now the pugilist can subtract 4 points of modifiers for a Called Shot.

MUSKETEER

Requirements: Novice, Shooting d6+

In the course of an explorer's travels, he usually finds himself forced to use antiquated weapons such as muskets. As a result, many explorers become highly proficient with them. Normally it takes 2 rounds to reload a black powder firearm, but a character with this Edge can do so with only 1 action.

NIGHT VISION

Requirements: Novice, Notice d8+, may not have Bad Eyes Hindrance

Your hero has excellent night vision, enabling him to reduce lighting penalties by 1 in all circumstances.

PUGILIST

Requirements: Novice, Strength d6+, Vigor d6+, Fighting d8+

Your hero has learned to make his punches count. When fighting unarmed, he inflicts Strength +d6 damage with his fists.

LEADERSHIP EDGES

STEADY, MEN!

Requirements: Seasoned, Command, Persuasion d8+

Some leaders can maintain their followers' composure in even the most trying circumstances. Leaders with this Edge grant a +2 to all Guts checks made by troops under their command.

PROFESSIONAL EDGES

ACTOR/ACTRESS

Requirements: Novice, Charisma +2 or greater, Persuasion d8+

You know how to play to an audience! You gain a +2 to Persuasion when adopting a role, plus 2 additional languages. You are a professional performer, earning value in pounds equal to your Persuasion roll on a success. On snake eyes, however, your performance is a flop, dropping your Status by -2 and possibly inciting challenges from outraged critics and audience members.

ARMY CAVALRYMAN

Requirements: Novice, Male only, Fighting d6+, Shooting d4+, Riding d6+

As a combat cavalryman, you keep your seat in the saddle under trying circumstances and stay alert to your surroundings. You get a +2 to Riding and Notice rolls while mounted on any riding creature (the bonus does not apply to Riding rolls substituted for Fighting). You also receive a +2 on any Common Knowledge checks regarding the military.

ARMY INFANTRYMAN

Requirements: Novice, Male only, Fighting d4+, Shooting d6+, Survival d4+

Keeping your head down and your eyes open is a lesson valuable to any field soldier. Your hero receives +2 to Stealth and Notice rolls in rural environments, as well as +2 on all military-related Common Knowledge checks.



ARMY GUNNER

Requirements: Novice, Male only, Fighting d4+, Shooting d4+, Knowledge (Gunnery) d6+

You are trained to handle the largest weapons of war, even under less than optimal conditions. You get +2 to clear all jammed weapons that use the Gunnery skill. Additionally, when executing suppressive fire you receive +2 on the roll. If your suppressive fire result is a raise, Spirit rolls to recover from Shaken are made at -2. You roll Common Knowledge checks regarding the military at +2.

ARMY MEDICAL ORDERLY

Requirements: Novice, Knowledge (Medicine) d4+, Healing d6+

A character with this Edge can get wounded soldiers up and fighting again in seconds. If the medic can get to a wounded non-Wild Card by the end of the round in which he was wounded, he can make an immediate Healing roll at -2. If the roll is successful, the victim is merely Shaken instead of wounded.

ARMY NON-COMMISSIONED OFFICER (NCO)

Requirements: Novice, Command, plus those of the Army Service (Infantryman, Cavalryman, Gunner, or Medical Orderly) of your choice

In addition to the Edge benefits for the branch of your choice, you are able to project your commanding presence farther than normal. Add +3" to your command radius.

ARMY OFFICER

Requirements: Novice, Command, plus those of the Army Service (Infantryman or Cavalryman) of your choice, may not have the Poverty or Disowned Hindrance

In addition to the Edge benefits for the branch of your choice, you are a ranking officer who can fluently speak one additional language from the experience of a past command. You get +1 on Knowledge (Battle) rolls.

COLONIAL OFFICE ADMINISTRATOR

Requirements: Novice, Male only, Vigor d6+, Persuasion d4+, Notice d6+, Shooting d4+

You are the kind of good man who made the Empire what it is. You gain fluency in two more languages, +2 on Persuasion rolls when communicating with natives in their tongue, and +1 on Knowledge (Law) and (Business) rolls. You receive a stipend of £5 per month if you take the Obligations (Minor, Colonial Office) Hindrance. You may quit and lose the Hindrance, but forfeit the income as well.

EXPLORER

Requirements: Novice, Strength d6+, Vigor d8+, Survival d6+, Tracking d4+, Shooting d4+, Swimming d4+

You are almost always able to find your way in the worst of predicaments and guide others along. You receive a +2 on Survival rolls, and can make a Smarts roll to deduce your current location without specific knowledge of the area. You also resist disease and fatigue better than most, adding +2 to your rolls to counter hazardous or harmful environmental effects.

FOREIGN OFFICE AGENT

Requirements: Novice, Smarts d8+, Lockpicking d6+, Persuasion d6+, Notice d6+

You are an expert in the art of finding clues, blending in, and playing roles. You receive +2 on Persuasion attempts to remain anonymous, to Lockpicking rolls, the forging of documents, or sleight of hand, and on Notice rolls when searching a location. You earn a stipend of £5 per month if you take the Obligations (Minor, Foreign Office) Hindrance. You may quit and lose the Hindrance, but forfeit the income as well.

FOREIGN OFFICE DIPLOMAT

Requirements: Novice, Male only, Smarts d8+, Persuasion d6+, Notice d6+

You are a suave negotiator and quick to interpret clues from another's body language. French is a free language for you, and you make Persuasion rolls at +2 in a formal setting. As well, you roll Notice at +2 to sense lies or whether a person is under duress. You earn a stipend of £5 per month if you take the Obligations (Minor, Foreign Office) Hindrance. You may quit and lose the hindrance, but forfeit the income as well.

INVENTOR

Requirements: Novice, Smarts d8+, Knowledge (Science) d6+, Knowledge (Engineering) d6+, Knowledge (Mechanics) d6+, Repair d4+

You start the game with two prototype inventions completed (pending GM approval), each with Reliability d6. In addition, you earn 2d6 x £10 each year from royalties on your mundane patents.

MASTER THIEF

Requirements: Novice, Thief, Smarts d8+

You are an extremely clever thief, and know that it is best to have others do your dirty work. You start with a Thief henchman (Extra) and two Thug minions (Extras), who serve as extra muscle and act as you see fit. They also dutifully carry out monthly "jobs" that net you £1d6 per thug, plus £3d6 for the thief. If more than a single 1 is rolled on the monthly revenue dice, the smartest of the Extras must

make a Smarts check. If the roll is failed, that criminal is arrested, executed, and lost. This retinue is not normally replaceable, but your GM may permit recruitment. Your character suffers a loss of Status -2 upon taking this Edge, or -4 if his criminal activities are known to others.

MERCHANT

Requirements: Novice, Persuasion d8+, Knowledge (Business) d6+, Streetwise d4+

You are a natural salesperson. You add +2 to Persuasion rolls when negotiating, or brokering deals. You also have a nose for local markets, legal or otherwise, gaining +2 to Streetwise when attempting to acquire or sell anything.

NAVY CAPTAIN

Requirements: Novice, Male, Status 3+, Command, Boating d4+, Fighting d4+, Knowledge (Gunnery) d4+, Knowledge (Trimsmen) d4+, Piloting d4+, Repair d4+, Swimming d4+, may not have the Airsick Hindrance

You are the Navy! You gain the Edge benefits for a Navy Petty Officer (see below), as well as one additional European language. You also have a knack for judging distances. Reduce all range penalties by 1 (to a minimum of 1) for all ship weapons under your command.

NAVY ORDINARY SEAMAN

Requirements: Novice, Male, Boating d4+, Fighting d4+, Knowledge (Gunnery) d4+, Repair d4+, Swimming d4+, may not have the Airsick Hindrance

You've seen enough of both the wet navy and aerial flyers to be useful on any ship. You gain +2 to Boating, Knowledge: Trimsmen, and, while aboard a ship, Notice rolls. Common Knowledge rolls regarding the Navy or aerial ships are made at +2.

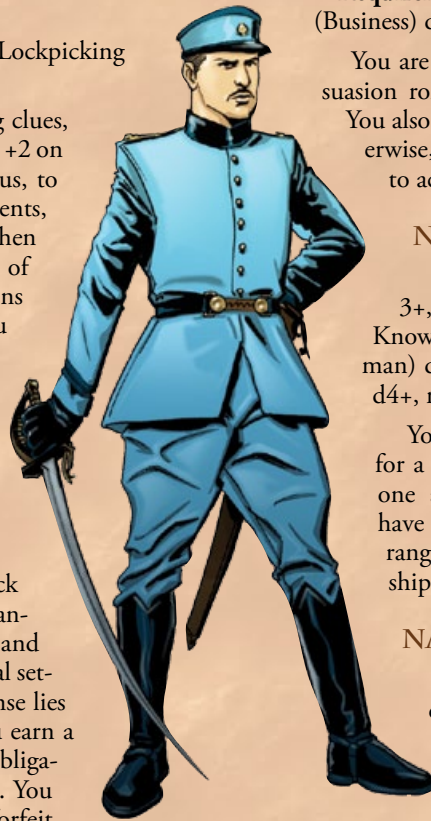
NAVY PETTY OFFICER

Requirements: Novice, Male, Status 2+, Boating d4+, Fighting d4+, Knowledge (Gunnery) d4+, Knowledge (Trimsmen) d4+, Piloting d4+, Repair d4+, Swimming d4+, may not have the Airsick Hindrance

You're sufficiently experienced to manage most any ship. You receive +2 on Boating, Knowledge: Trimsmen, and, while aboard a ship, Notice rolls. In addition, you gain the Command Edge when leading ordinary seamen, and all Common Knowledge rolls you make relating to navy or aerial ships are made at +2.

REPORTER

Requirements: Novice, Smarts d8+, Charisma +2 or better, Knowledge (Journalism) d6+, Investigation d4+



You are a popular journalist. You receive +2 Status, and a +2 on Knowledge (Journalism) rolls.

SOCIAL EDGES

ADVENTURESS

Requirements: Novice, Female only, Smarts d8+, Charisma +2 or greater, Persuasion d6+

You have found a gentleman who dotes on you, whether a male relative or rich suitor, who can always be counted upon to take you where the adventure is. You start play with an Extra, either a Rich Civilian or an Experienced Soldier, who is your traveling companion. As long as he is alive you can, with a Persuasion roll, have him take you anywhere or buy you anything he can afford. Should you lose the companion, you lose the status and financial benefit of this Edge. The Experienced Soldier has a £5 per month income to support your whims, while the Rich Civilian has £15 per month and grants you the status bonus for being Rich. Remember, all travel costs are doubled...but he pays for two!

ALTERNATE IDENTITY

Requirements: Novice, Persuasion d6

You have another identity you can assume, which makes you appear to be of a wholly different social class (lower than your own). When you assume this identity, you must use any modifiers for the lower social class. People who know you in one identity and meet you in the other can make a Notice roll at -4, opposed by your Stealth, to determine who you are. People who are more intimately familiar with you may suffer a reduced penalty, or none at all.

MASTER OF DISGUISE

Requirements: Veteran, Alternate Identity, Persuasion d8

You are capable of disguising yourself as a completely different person and acting as if you are a member of any other social class. Creating a disguise normally takes 15 minutes and a disguise/makeup kit. In addition, disguising yourself as a higher social class always requires the appropriate clothing (lower class clothing can be faked by disheveling better clothes). A disguise may be created without a kit at a -2 penalty, and it may be done more quickly (1d6 rounds) by taking a -2 penalty as well (these may be combined to do a fast disguise with no kit at -4). On a success, someone familiar with you may make a Notice roll at -4 to determine who you are, and a raise increases the penalty to -6.

ASSOCIATE

Requirements: Novice, Smarts d8+, Persuasion d6+

Your character has an associate who travels with him and acts as his helpful counterpart. The associate is an Extra under your control (although the GM role-plays the Associate in social situations). Depending upon who your hero is, he might have a Servant, a Rich Civilian "master" (with income of £15 per month) who is dim-witted enough to be talked into all manner of adventures, an Experienced Soldier bodyguard, or a Thief henchman. Other types of Associates are possible with the GM's consent. Should your Associate perish or depart, you must recruit another through normal advancement (i.e., take the Edge again).

TRAVELER

Requirements: Seasoned

You understand and adapt quickly to local customs, and thus you are never considered an Outsider in any land. Outside of your native culture, when the GM rolls on the NPC Reaction Table you may add +2 to the result. Among foreign cultures you also gain +2 on Persuasion rolls to parley with the locals, and improve their opinions of you and your allies.

SNOB

Requirements: Novice, Spirit d6, Strong Willed

You may make a single Intimidate attempt as a free action before an attack against someone of a lower Status level than your hero.

TWIT

Requirements: Novice, Smarts d6, Strong Willed

You may make a single Taunt attempt as a free action before an attack against someone of a higher Status level than your hero.

WEIRD EDGE

LIQUID COURAGE

Requirements: Novice, Vigor d8+

Whether it's a snifter of fine brandy or a shot of gin, alcohol has an amazing effect on you. Down at least 8 ounces of the stuff and you're virtually unstoppable. The round after the character drinks at least 8 ounces of hard liquor (three times that in beer or twice that in wine), his Vigor increases by one die type (which also increases his Toughness), and he ignores one level of wound modifiers (which stacks with other abilities that ignore wound penalties).

The effect lasts for one hour, and has no detrimental effects on brainpower, Agility, or other functions. If the character is looking to get drunk and does so, he retains the benefits above but suffers -2 to all Smarts and Agility-based rolls for as long as he continues to drink, and the next 1d6 hours thereafter.

POSSESSIONS

Your hero starts play with the clothes on his back, a spare change of clothes (both of his status level), and £5 (which may have been modified by your Edges and Hindrances). If you want anything else, you have to buy it.

Starting funds evaporate quickly. Members collect a monthly stipend from the Explorer's Society while working on Society business. Those who are independently wealthy or have a paying profession also receive income. Although other jobs are possible, it is not generally acceptable for Society members to, for instance, spend their time tending bar for a few shillings.

Be sure to maintain a healthy stack of cash on hand for travel expenses and the occasional bribe. Explorers never know where life might take them; money in a New York bank vault has little value on Mars!

CURRENCY

The standard unit of exchange in *Space 1889: Red Sands* is the British Pound Sterling, known to the lower classes as the “quid.” The pound is equivalent to 20 shillings and each shilling is worth 12 pence. Prices are given in pounds, shillings, and pence, such as £1, 3s/2p (one pound, three shillings, and two pence) or £2, -/10p (two pounds and ten pence).

In 1889, a pound was worth almost five US dollars. Adjusting for inflation, the pound had the purchasing power of approximately one hundred modern American dollars—roughly £1 = \$100 and 1s = \$5 if you need to convert *Savage Worlds* dollars to *Space 1889: Red Sands* pounds.

Admittedly, this is an oversimplification of the actual disposition of specie in 1889, and moreover, the system doesn't take into account the currency of nations other than Britain. This is by design, so you can explore the far reaches of the Solar System, battle sky pirates, and put down revolts on Mars without having to account for every sovereign, groat, and half-penny. If you ever need to know the exact physical currency your hero has in her purse, consult the

following section for all the historical details. Using the proper names occasionally helps to add flavor and a sense of verisimilitude to your rollicking tales of adventure.

IN CIRCULATION

In 1889, pounds were available in large paper notes in various denominations, but these were rare. Coins were more commonly used, and widely available in the following denominations: 20 shillings (sovereign), 10 shillings (half-sovereign), 5 shillings (crown), 2½ shillings (half-crown), 2 shillings (florin), 12 pence (1 shilling, also known as a bob), 6 pence (six-pence), 4 pence (groat), 3 pence (three-pence, pronounced “thruppence”), 1 pence (penny), ½ pence (halfpenny, pronounced “haypenny”), ¼ pence (farthing).



WEAPONS

Type	Range	Damage	RoF	Cost	Wt	Shots	Notes
Melee							
Axe, Hand	-	Str+d6	-	2s	2	-	Good for cutting wood too
Baton	-	Str+d4	-	2s	1	-	Wood, Toughness 6
Bayonet	-	Str+d4	-	7s	1	-	Str+d6 on rifle, Parry +1, Reach 1, 2 hands
Cudgel	2/4/8	Str+d4	-	4s	4	-	Can be thrown at -1 Throwing
Dagger/Knife	3/6/12	Str+d4	-	5s	1	-	Can be thrown
Great Axe	-	Str+d10	-	£5	15	-	Parry -1, 2 hands, AP 1
Great Sword	-	Str+d10	-	£4	12	-	Parry -1, 2 hands
Halberd	-	Str+d8	-	£2, 10s	15	-	Reach 1, 2 hands
Rapier	-	Str+d4	-	£1, 10s	3	-	Parry +1
Saber	-	Str+d6	-	£2	4	-	Useful from horseback
Sap	-	Str+d4	-	5s	4	-	Str.+d4+6 damage on drop
Short Sword	-	Str+d6	-	£1	2	-	Includes machetes
Staff	-	Str+d4	-	1s	8	-	Parry +1; Reach 1; 2 hands
Sword	-	Str+d8	-	£3	8	-	
Sword Cane	-	Str+d4	-	£2, 10s	5	-	As walking stick or rapier
Spear	3/6/12	Str+d6	-	£1	5	-	Parry +1; Reach 1, 2 hands
Torch	-	Str+d4	-	1s	1	-	-1 attack, target catches fire on d6 roll of 6
Walking Stick	-	Str+d4	-	10s	2	-	Parry +1
Whip	-	Str+d4	-	2s	2	-	Reach 1, may grapple
Ranged							
Blunderbuss	5/10/20	1-3d6	1	£2	12	1	+2 Shooting, 2 Actions to reload
Bow	12/24/48	2d6	1	£1, 10s	3	1	Must shoot standing
Crossbow	15/30/60	2d6	1	£3	6	1	AP 2, 1 action to reload
Derringer	2/4/8	2d6-1	1	£3	1	2	Easily concealed
Elephant Gun	30/60/120	2d10	1	£5	12	1	AP 2, Snap fire penalty
Flintlock Pistol	5/10/20	2d6+1	1	10s	3	1	2 actions to reload
Hand Bow	8/16/32	2d6	1	£2	3	1	AP 1, 1 action to reload
Musket	10/20/40	2d8+1	1	£1	10	1	AP 1, 2 actions to reload
Pistol	12/24/48	2d6	1	£1	3	6	AP 1, Revolver
Rifle	24/48/96	2d8	1	£2	10	8	AP 2
Rifle, Bolt act	24/48/96	2d8+1	1	£1, 10s	12	5	AP 2, older Bolt action
Shotgun	12/24/48	1-3d6	1	£4	12	1	+2 Shooting (2d10 slug)
Sawed-Off	5/10/20	1-3d6	1	£4	8	1	+2 Shooting (2d10 slug)
Double Barrel	10/20/40	1-3d6	1	£4.5	9	2	+2 Shooting (2d10 slug)
Lever-Action	10/20/40	1-3d6	1	£5	9	5	+2 Shooting (2d10 slug)
Shield gun	4/8/16	1-3d6	1	£2, 10s	12	1	+2 Shooting, 2 actions to reload.
Winchester	18/36/72	2d6+1	1-2	£1, 10s	8	7	AP 1, Lever Action Rifle
Throwing							
Dynamite	3/6/12	2d6	1	1s	0.5	1	MBT, +1damage/extra stick
Lamp Oil	3/6/12	Special	1	1s	1	1	Small Burst
Net	3/6/12	Special	1	1s	1	1	Entangle
Knife	3/6/12	Str+d4	1	1s	1	1	+1 Throwing, -1 Fighting
Improvised							
Small	3/6/12	Str+d4	1	—	1	1	-1 attack, Toughness 4
Medium	2/4/8	Str+d6	1	—	3	1	-1 attack, Toughness 6
Large	1/2/4	Str+d8	1	—	6	1	-1 attack, Toughness 8

SPECIAL WEAPONS

Type	Range	Damage	RoF	Cost	Wt	Shots	Notes
Heavy Cannon	150/300/600	4d12	1	£6000	600	1	AP 14*, LBT, 1 action reload
Medium Cannon	120/240/480	4d8	1	£1000	100	1	AP 9*, MBT
Light Cannon	72/144/288	3d8	1	£400	40	1	AP 7*, SBT
Rotating Cannon	48/96/192	2d12	3	£200	10	100	AP 5*, RoF 3 (Hotchkiss Rotating cannon)
Machine Gun	24/48/96	2d8	3	£70	5	250	AP 2, RoF 3
Martian Lob	-/-/144	5d8	1	£2000	200	1	AP 6*, MBT, 1 action reload
Rogue Gun	48/96/192	3d12	1	£2000	60	1	AP 6*, MBT, 1 action reload
Mars Heavy	36/72/144	3d10	1	£1000	40	1	AP 5*, MBT,
Rod Gun	48/96/192	2d10	1	£800	30	1	AP 7*, SBT, 1 action reload
Mars Light	24/48/96	2d10	1	£400	20	1	AP 4*, SBT
Sweeper	12/24/48	1-3d6	1	£200	10	1	SBT(3d6)/MBT(2d6)/LBT(1d6) damage
Catapult	36/72/144	3d8	1	£500	200	1	AP 2, MBT, 1 action reload

These weapons are Vehicular or Immobile During Combat.

AP #* = Heavy Weapon; LBT = Large Burst Template, MBT = Medium Burst Template, SBT = Small Burst Template.

ARMOR

Personal Armor	Armor	Cost	Weight	Notes
Boilerplate	+3	£4	15	Protects front torso only; see notes
Chain Mail Vest	+2	£3	15	Protects torso
Leather Vest	+1	8s	8	Protects torso
Martian Shield Gun	-	£2, 10s	12	Parry +1, -1 Shooting, is a gun
Martian Helm	+3	£1	6	Covers 2/3 of head (1-4 on d6)
Army Helmets	+4	16s	6	50% chance of protection vs head shots
Pith Helmet	+2	8s	2	50% chance of protection vs head shots

AMMUNITION

Ammo	Weight	Cost	Notes
Arrows	1/5	1s/10	For Bows
Bullets, medium	5/50	5s/50	For Pistols & Shotguns (to 2d6+1 damage)
Bullets, large (2d8+ damage)	8/50	10s/50	For Rifles, Shotgun slugs, and Machine Guns
Quarrels	1/5	1s/5	For Crossbow and Hand Bow
Shot and Powder	5/50	2s/50	For black powder weapons
Mars & Smoothbore Guns	12/1	5s	All black powder weapons
Catapults	15/1	1s	Covers rock preparations
Modern Shells: Light	2/1	10s	For Light Cannon to 5"
Modern Shells: Medium	4/1	£1	Medium Cannon > 6" to 8"
Modern Shells: Heavy	8/1	£2	For Large Cannon > 8" to 10"

MUNDANE POSSESSIONS

Miscellaneous	Weight	Cost	Notes
Bedroll	4	4s	Sleeping Gear
Book (blank)	2	2s	50 pages, writing journal
Brush or comb	0.5	1s	-
Camera	5	4s	-
Camp Gear	80	£2	Tent, stove, stool, and all outdoor needs
Carbide, Tin	1	1s	16 oz., mixes with water for fuel
Candles (dozen)	5	5s	1" radius light
Clothing, Cheap	5	5s	Includes cheap gloves and cap
Clothing, Common	5	10s	Includes common gloves & hat
Clothing, Fine	5	£2+	Includes fine gloves and hat
Clothing, Rough	3	£1	Heavy duty suit, hat etc. for wilderness
Clothing, Weather	3	10s	Rubberized hat, cloak and boots
Climbing Gear	6	10s	Per person, +2 to climbing rolls, no rope
Cocaine	0.5	£1	Trait Roll bonus; addictive
Compass	1	10s	Bonus to finding location Survival
Dissecting Kit	1	8s	+1 to analyzing dead
Fan	0.5	1s	+1 Bonus to avoid heat stroke
Flask	1	1s	Ceramic, holds 1 pint
Flint & Steel	1	1s	When you don't have a match
Folding Knife	0.5	1s	Improvised weapon, easily concealed
Forge, Portable	500	£6	Critical for Repairing damaged metal
Gramophone	10	£7	Record Player and Recorder
Grappling Hook	2	5s	3/6/12 range, 200 lb. weight
Holy Symbol	1+	1s+	Simple wood to expensive silver
Howdah	250	£5 to £20	Used to carry passengers or supplies
Lamp, Carbide	1	-/8p	4 hours, 8" ahead, 2 oz. carbide
Lamp, Miners	0.3	-/8p	2 hours, 4" ahead light, 1 oz. carbide
Lamp Oil	1	-/8p	12 pints, improvised weapon
Lantern	1	5s	1 pint/12 hours, 4" radius light
Leather Satchel	2	2s	Old style briefcase, holds 4 lbs.
Lock Picks, set	-	18s	Tools to pick locks at no penalty
Machete	2.0	-/2p	Str+d6 damage
Matches (gross)	0.5	1s	144 strike matches
Magnifying Glass	-	12s	+1 for investigating crime scenes
Manacles	2	10s	Toughness 12, Leg manacles force a Pace of 2
Mirror	0.5	2s	Pocket/purse size
Morphine	0.5	2s	Reduce wound penalties, addictive
Navigation Gear	8	£12	Useful for navigation readings
Nitroglycerin	5	£1	20 2-oz. bottles, 3d6 base explosive
Opium	0.5	1s	Cause fatigue, addictive
Photographic Lab	30	£7	Includes light tent & develop chemicals
Pickaxe	5	16s	Improvised 2 handed med. wpn. AP 2
Pocketbook/Purse	0.5	1s	Purses can hold up to 5 lbs. weight
Pocket Watch	0.5	£1+	Common Timepiece
Riding Tack	25	£1 to £5	Saddle, harness, and other riding gear
Rope, hemp (50')	2.5	1s	Can hold 300 lbs.
Rope, silk (40')	1	8s	Can hold 400 lbs.
Ruhmkorff's Apparatus	5	£2	8"-radius light, 24 hours on 1 voltaic cell
Scroll Case	1	1s	Holds 1 standard scroll
Shovel	5	12s	Improvised 2 handed medium club
Smoking Pipe	0.5	1s	Common, nicer pipes can run more

Miscellaneous	Weight	Cost	Notes
Spy or Field Glass	2	£4	Doubles or more the range seen clearly
Sunglasses	0.2	4s	Protect eyes from sun blindness
Tent, 10 man	35	£6	Protects 10 adults from weather
Telegraph Gear	1	£1	Allows the taping of telegraph lines
Toolkit	10	£5	+1 to a specific skill, exhausts on skill roll of 1
Torch	1	1s	4" light, 4-hour duration, d4 Impro. Weapon
Travel Bag	2	4s	Holds up to 50 lbs.
Trunk	6	8s	Holds up to 140 lbs.
Trunk, Watertight	8	£1	Holds up to 200 lbs. and floats
Umbrella/Parasol	2	8s	Improvised weapon (Str+d4), Parry +1
Voltaic Cell	1	10s	Primitive battery
Waterskin	1+	1s	Holds 2 qts. of water and weighs 5 lbs. full
Whistle	0.1	1s	-
Winter Blanket	5	3s	Cold weather gear
Writing Equipment	1	5s	-
Food			
Beer, per quart	2	1s	Average quality
Meal, Common	1	1s	A fine meal costs 2s+
Canned Rations	4	1s	Per day, lasts months
Cheap Rations	10	£1	7 days of biscuits and cheap food for 1
Champagne, bottle	2	5s	4-6 glasses of good champagne
Wine, bottle	2	3s	4-6 glasses of decent wine
Lodging			
Cottage	-	£200	Owner upkeep averages £2 per year
House	-	£650	Owner upkeep averages £10 per year
Mansion	-	£1,000+	Owner upkeep averages £100 per year
Lodging care	-	varies	10 times normal upkeep per year
Room furnishings, fine	-	£15+	Per room, quality furniture
Room furnishings, cheap	-	£2	Per room, cheap furniture
Rent, Common house	-	5s	Per week, renter upkeep 4 hours/week
Rent, Cheap tenement	-	2s	Per week, renter upkeep 2 hours/week
Rent, Apartment	-	3s	Per week, renter upkeep 3 hours/week
Rent, Fine Apartment	-	5s	Per week, includes maid 1/week
Average Hotel	-	2s	Per night, per person, includes breakfast
Fine Hotel	-	£1+	Per night, per person, includes breakfast
Daily Pay (average)			
Laborer	-	8s	Working 10 hours/day, 6 days/week
Skilled Tradesman	-	16s	Working 10 hours/day, 6 days/week
Clerical Worker	-	£1, 6s	Working 10 hours/day, 6 days/week
Professional (doctor)	-	£1, 10s	Working per visit, on call 7 days/week
Animals			
Camel	-	£11	Can carry 425lbs for 6 hours
Dog, Guard	-	£3	Use Wolf stats in <i>Savage Worlds</i> (SW)
Dog, Hunting	-	£2	See Notes
Elephant	-	£40	Carries 1,300 lbs. for 6 hours
Gashant	-	£5	Carries 325 lbs. for 8 hours
Horse, Riding	-	£9	Carries 265 lbs. for 8 hours, in SW
Mule	-	£7	Carries 185 lbs. for 12 hours, in SW
Pacyosaurus	-	£10	Carries 425 lbs. for 8 hours
Ruumet Breehr	-	£20	Carries 3,200 lbs. for 6 hours
Skrill, Flying	-	£100+	Carries 400 lbs. for 6 hours

Miscellaneous**Fuel, bulk**

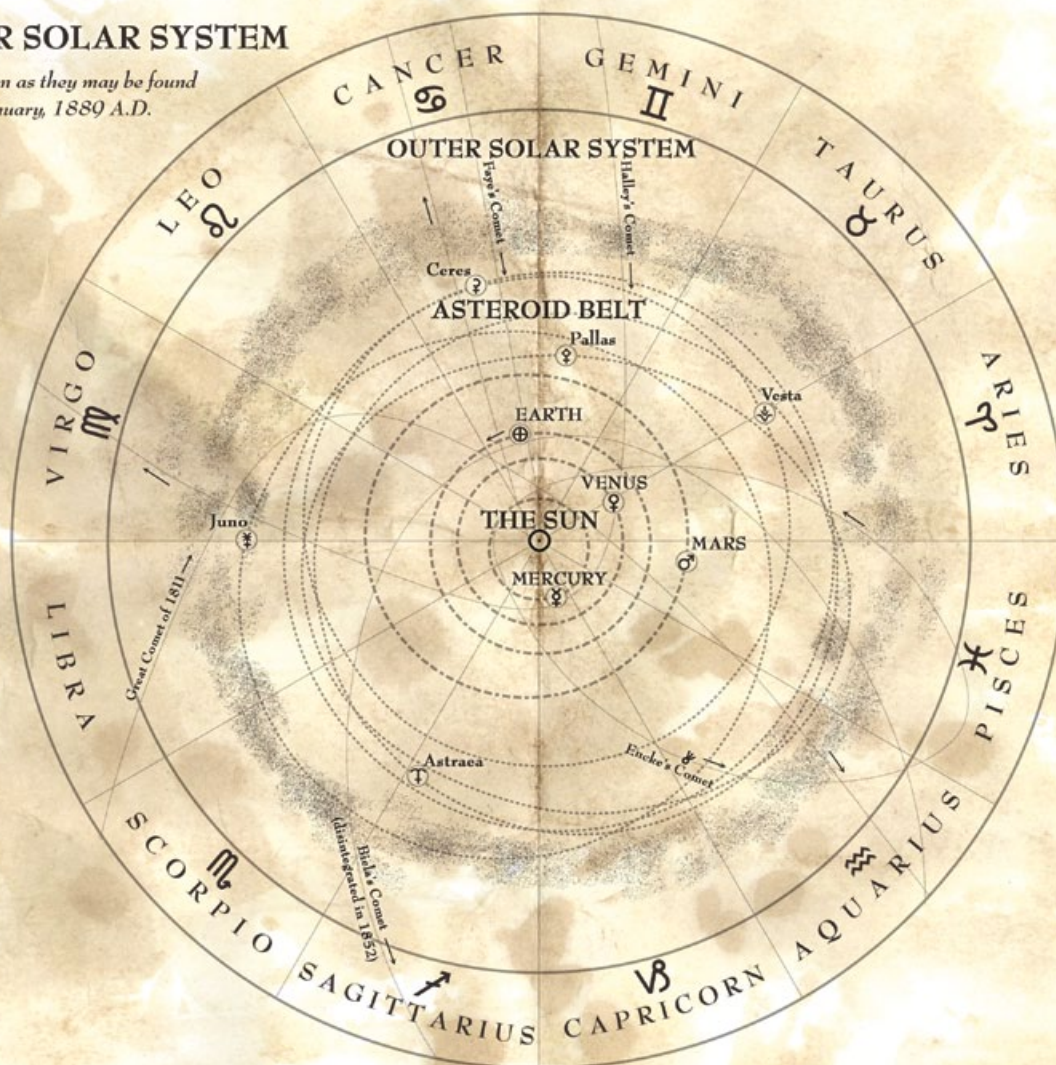
	Weight	Cost	Notes
Coal	2000	£1	-
Petroleum	2000	£3	-
Liquid Fuels	2000	£6	Kerosene, coal oil, gasoline, etc.

Vehicles

	Weight	Cost	Notes
Bicycle	25	£5	Seats 1 person + 50 lbs. gear
Carriage	900	£12	Needs 2 animals, seats 4 +200 lbs.
Wagon	1000	£25	Needs 2-4 animals, seats 2 +3,000 lbs.
Hansom Cab	600	£8	Needs 1 animal, seats 2 +100 lbs.
Large Boat	-	£8	Cargo capacity 6,000 to 10,000 lbs.
Small Boat	-	£5	Cargo capacity 3,000 to 6,000 lbs.
Steam Launch	-	£10	Common river transport
Aerial Launch	-	£4,840	Rare but popular transport
Aerial Skiff	-	£250	Uncommon, cargo capacity 2,000 lbs.
Personal Conveyance	-	£50	Rare but reasonably safe air transport

THE INNER SOLAR SYSTEM

*Celestial bodies shown as they may be found
on the first day of January, 1889 A.D.*



EQUIPMENT

ARMOR

Though armor's effectiveness diminishes against modern firearms, natives of less-advanced worlds adopt it as a common combat protection, and the modern inventor is always looking to develop and perfect materials to the point of complete and total imperviousness.

Boilerplate: Heavy steel plates in a leather sheath, protecting only the front torso. The boilerplate is destroyed (provides no further protection) when penetrated by a bullet.

Chain Mail Vest: This is a shorter version of the chain mail hauberk still found in isolated cultures, as well as on explorers traveling through untamed territories. The vest may just keep a claw out of one's back.

Leather Vest: Much like the chain mail vest, the leather vest is an abbreviated version of the leather armor. Users often decorate it to appear a bit more than a protective vest.

Martian Shield Gun: Combining the benefits of a small shield and a blunderbuss, this unique Martian armament is very useful in boarding actions.

Army Helmet: These helmets used by the military of all nations shield the head from bullets and even stray shrapnel.

Pith Helmet: A lighter helmet, used more for protection from the sun's rays than from gunshots.

WEAPONS

Black Powder Weapons: These arms are still favored by most Martian cultures, as well as certain tribes on Earth. When fired, the powder produces a cloud that obscures the shooter's exact position but his own vision as well. For one round following the shot, the shooter is considered to have light cover (–1) versus ranged attacks, but has the same penalty when firing.

Animals and other non-sentient creatures abhor the scent and taste of gunpowder enough that they must succeed on a Spirit check to attack (or continue to attack) a character enveloped by the smoke. The powder is usually found in six-pound kegs for 10s; these explode for 3d6 damage in a Medium Blast Template if ignited.

SELECTED WEAPONS

Baton: The listed price assumes a wooden club specifically crafted for combat, such as a policeman's truncheon. Makeshift clubs (such as chair legs, thick tree limbs, etc.) are free but count as improvised weapons (see page 42).

Blunderbuss: A blunderbuss is a black powder shotgun. It fires pellets, or improvised ammo such as nails and rocks (but incurs the penalty for improvised weapons, and halves range, when doing so).

Dynamite: Used for demolition and sold in cases of 100 half-pound sticks, dynamite sticks are often used as impromptu grenades. Each explodes for 2d6 damage in a Medium Burst Template (MBT), but may be bundled together to generate a greater explosion. Each additional stick adds +1 damage, and +1" to the blast diameter of the MBT. Explosion damage affects structures as well.

Hand Bow: A pistol-sized version of the standard cross-bow.

Lamp Oil: Normally used for a lamp (one pint provides 8 hours of illumination), lamp oil and similarly flammable substances also have combat applications. Upon impact, a shattered container splashes its contents in a Small Burst Template. Any creature in the area must make an Agility roll, or fall prone and become covered with the substance. See the Fire rules in *Savage Worlds* if the substance is ignited.

Net: Popular for restraining creatures and people, a net consists of a rope mesh with a line for control, lead sinkers for weight, and barbed fishhooks to deter escape. With a successful Throwing roll, a target is entangled. On his next action, the target must make an Agility or Strength roll at –2 to slip or tear free. Success releases the target but requires an action; a raise frees the target immediately, without losing an action.

Sap: Also called a blackjack or simply a "bag," the sap is a leather pouch filled with lead shot. A sap is considered an improvised weapon. If the wielder has the Drop, however, the sap inflicts +6 damage rather than the normal +4.

Sawed-Off Shotgun: A regular shotgun with its barrel sawed in half. This reduces the weapon's range but makes it easily concealable under a long coat or in baggage.

Shotgun, Double-Barrel: Shotguns with two attached barrels are called "double barrels." If the attacker wants to fire both barrels at once, he makes a single Shooting roll. If the attack hits, roll damage for both shots.

Shotgun, Lever-Action: The lever-action shotgun has a magazine in the barrel that holds up to five shells. The barrel is rotated by the lever, an action equivalent to drawing a weapon.

Sword Cane: A walking stick with a rapier or thin blade concealed in the shaft. Carrying a sword cane does not elicit any negative reactions for traveling armed.

Throwing Knife: Considered an improvised weapon when used for melee (–1 Fighting), a throwing knife is perfectly balanced for Throwing (+1).

Torch: An unlit torch is treated as an improvised baton (–1 Fighting). A lit torch may set ablaze a struck target, but its flame extinguishes on an attack roll of 1 (regardless of the Wild Die).



Walking Stick: Though well-balanced, these items are not intended for combat and therefore are considered improvised weapons.

Whip: The wielder is considered unarmed when attacked in hand-to-hand combat.

Winchester: This famous weapon is the king of lever-action rifles. The tube magazine reloads akin to a revolver, thus replacing a spent magazine costs just an action. Each magazine holds seven rounds.

SPECIAL WEAPONS

The following weapons are usually only found on vehicles or in fixed gun emplacements.

Cannon, Heavy: Modern breach loading 8"–10" ship cannons, capable of destroying light flyers with a single hit. Possessing twice the range of the best Martian cannon, these are only found on modern naval vessels, and usually confiscated by any corrupt party discovering one on a civilian ship. They require a four-man crew.

Cannon, Medium: Modern breach loading 5"–6" ship cannons, on board of most light vessels as main guns. Possessing a near-50% better range than the best Martian cannon, these are only found on modern naval vessels and confiscated by any corrupt party discovering one on a civilian ship. They require two-man crews.

Cannon, Light: Modern breach loading or quick-firing 4" (or smaller) cannons, available to both military and civilians (but not Martians normally) to discourage pirates. They have the range of the best Martian cannon. Land cannons weigh twice as much to account for the carriage. A light cannon requires a two-man crew.

Cannon, Rotating: Rapid-firing, very light cannon about 20mm in size. They are more expensive than machine guns, but can damage lightly armored targets. A rotating cannon requires only one crewman.

Machine Guns: Multiple versions of the famous Maxim machine gun are available, spitting up to 600 rounds per minute from cloth ammunition belts. They have over one-third the range of the best Martian cannons. A shipboard machine gun requires one crewman. On land, the weapon weighs 100 pounds, requires four men to move, and two to man.

Martian Lob Gun: A high-trajectory, large-bore weapon similar to the bombards of the medieval Earth. A ship can carry only one lob gun due to its considerable downward recoil, and this flaw always forces its placement at the center of the ship. Lob guns always fire as if they were at long range, and the impact causes an automatic loss-of-trim critical hit on the target ship. These monstrosities require three-man crews.

Martian Rogue Gun: A heavy, black powder, muzzle-loading cannon, the rogue gun is the heaviest direct-fire Martian cannon ever made. It requires a three-man crew.

Martian Rod Gun: A medium-weight, black powder gun firing solid ramrods capable of piercing better-armored ships. Rod guns require two-man crews.

Martian Heavy Gun: This smoothbore, 24-pound, black powder cannon is the Martians' primary ship gun, often fired in massive broadsides. Martian heavy guns require two-man crews.

Martian Light Gun: A smoothbore, 12-pound, black powder cannon slowly being phased out but still popular with smaller ships. Martian light guns require two-man crews.

Martian Sweeper: Used to "sweep the decks" of enemy ships, the sweeper is intended to damage the soldiers and crewmen, less so the vessel. The sweeper inflicts 3d6 damage in a SBT at short range, 2d6 damage in a MBT at medium range, and 1d6 damage in a LBT at long range. A Martian sweeper requires only one man to crew.

GEAR

Camp Gear: Everything a gentleperson needs for the outdoors, including a tent, cookware, folding stool, dining utensils, toiletries, and other camping necessities, all in a convenient case.

Carbide: A powder which reacts with water to produce flammable acetylene gas. Carbide is nonflammable by itself, which proofs it against accidental impact. Available in sealed tins.

Clothing and Housing: Your hero's clothing and accommodations are typically rated as fine, common, or cheap in quality. A Rich hero or Noble must always acquire fine attire and luxuries, or lose 1 Status every month.

Cocaine: Victorians usually administer cocaine via injection. The drug provides a +1 bonus to all trait rolls for one hour. Vin Mariant is a wine laced with cocaine consumed by many celebrities of the era. In a beverage, the boost lasts a mere 10 minutes. All forms of cocaine are highly addictive. A regular user gains the Habit (Major) Hindrance, at the GM's discretion.

Compass: This convenient device provides +1 to all skill rolls made to avoid getting lost on Earth and Mars.

Dissection Kit: Contains forceps, scalpel, and various instruments for dissecting and probing zoological and botanical specimens. The user gains +1 on Investigation rolls made to identify a creature's cause of death.

Folding Knife: A short, collapsible blade easily and safely ported in a pocket or purse. Treat as an improvised weapon in combat, equivalent to a dagger in damage.

Forge, Portable: Tools for the heating and forging necessary to repair damaged metal goods or vehicles. Attempting to Repair vehicles without this kit (or equivalent tools) incurs -2 on the roll, and successes are always considered temporary patchwork. The repairs must be redone and made permanent when the proper tools are available.

Gramophone: This wondrous contraption can record sounds and play recordings.

Howdah: A giant bowl for passengers and cargo, secured on the back of an elephant or ruumet breehr. More expensive versions include awnings to block sunlight and rain.

Lantern: Lighting a lantern is an action. A pint of oil burns for 8 hours. The radius of light can be adjusted from none up to eight yards (4"). A lantern used as an improvised weapon breaks upon a hit, dousing the target in flammable oil. Roll a d6; the victim ignites on anything but a 1. Lanterns successfully targeted with a called shot (-2), burst open and douse the bearer.

Magnifying Glass: Gives a +1 to Notice when probing locations for small visual clues. It may be used to start fires under sunlight on Earth, Mars, and Mercury.

Manacles: Immobilize either the arms (all Agility-linked skill rolls are made with -4 penalty) or the legs (reduce target's Pace to 2 and cannot run). Manacles have Toughness 12.

Morphine:

An injection of morphine deadens pain, negating wound and fatigue penalties by up to -2. It is also available in ingestible forms (such as Mrs. Winslow's Soothing Syrup). When ingested, it reduces penalties by just 1. Morphine is addictive, and regular users gain the Habit (Major) Hindrance.

Navigation Kit: Includes a sextant, chronometer, compass, and other instruments for celestial navigation. This kit nullifies the improper equipment penalty (-2) for Knowledge (Navigation) rolls.

Nitroglycerin: Nitro comes in boxes of 20 two-ounce vials, with space beneath for ice to keep stability. A vial can be thrown (3/6/12 range, 3d6 damage, Medium Burst Template), but a 1 on the skill die indicates the vial explodes at a distance equal to the Wild Die roll in inches (or in the thrower's hand if the result is 1). Each additional thrown vial adds +2 damage.

Opium: Inhaled recreationally by those who like to lose themselves for hours. Characters smoking a ball of opium must succeed on an immediate Vigor check or gain 2 Fatigue levels for four hours. Making the Vigor roll gains the smoker the equivalent of an eight-hour rest in just four hours, but with only a vague recollection of events in that interim. Opium is also available as laudanum, a cure for numerous minor ailments, and is dissolvable in wine. Both forms of this drug are addictive, and regular users gain the Habit (Major) Hindrance.

Photographic Lab: This portable lab has everything needed to develop photos in the field, including a special lightproof tent.

Ruhmkorff's Apparatus: A portable, electric light source. It's a backpack containing the "Ruhmkorff Coil," an unsophisticated transformer, connected by wires to a hand-held fluorescent light bulb (the "Geissler Tube"). The apparatus illuminates a radius of 16 yards (8"), and runs for up to 24 hours on a single voltaic cell.

Spy or Field Glasses: Range penalties for Notice rolls are halved when using a spy glass, but they are only useful when there's sufficient light.

Telegraph Kit: Contains a sending key, receiver, 100 feet of wire, clips, and runs on a single voltaic cell for up to a week.

Tool Kit: A generic term for a satchel or other portable container full of instruments crucial to a particular task. Examples include doctor's bag (for Healing rolls), biologist's kit (Knowledge: Medicine), portable laboratory (Knowledge: Science), detective's kit (Investigation), mechanic's tool box (Repair), performer's makeup (Persuasion used for disguise). It grants a +1 to the appropriate skill roll, but a 1 on the skill die exhausts the kit and requires that it be replaced.

ANIMALS

Camel: For arid environments, nothing beats a camel. They are far better suited to travel in extremely dry areas than other Earth creatures. Camels' common roles include transportation, beast of burden, and even entertainment (racing).

Dog, Hunting: Trained to track or chase quarry from hiding. Hunting dogs add +2 to Survival rolls to find food.

Elephant: Found in much of Africa and the Middle East, particularly India (bull elephants). They are typically used as beasts of burden or stylish transportation.

Gashant: The Martian gashant is the most common mount for riding, racing, and packing on Mars; the creatures are more prevalent there than horses are on Earth. Weighing around 800 pounds, a gashant is a horse-sized, beaked reptile with sharp clawed feet and the crisp grace of a bird of prey. It runs on two feet, with tail fully stretched to balance itself.



Pacyosaurus: A distant relative of the dinosaurs, the pacyosaurus has a dull look: a membrane-crested head, huge and strong back legs, a stubby tail, longer forelimbs, and wide footpads to navigate its swamp home on Venus. Characters are able to ride this rather docile creature bareback, as its smooth, leathery hide is fairly easy to hug using only the legs.

Ruumet Breehr: Larger, wider, stronger than an elephant, the nearsighted ruumet breehr is unlike anything ever seen on Earth. Ponderous and incredibly powerful, the beast owns the best carrying capacity of any land animal ever domesticated.

Skrill, Flying: Bigger than the condor, this leathery winged creature is reminiscent of a pterodactyl. Incapable of breeding in captivity, the skrill is almost never offered for sale and, when found, is usually the survivor of a Queln raid and likely in less than perfect health. Riding a wild skrill requires a Riding roll (–6) and a Strength roll (at –2) to hold on. If the rider remains mounted, he must make another Riding roll (–2) each round to maintain control, along with a Strength roll to hold on. If the rider stays mounted for three rounds, the skrill accepts the rider as its master. Future Riding rolls for that particular skrill are made without penalty.

VEHICLES

The following section fully defines and explains the game stats used to describe vehicles.

Acceleration (Acc): The vehicle's acceleration in inches per turn, according to the tactical tabletop rules. "Kites" are wind-driven, relying on air flow and direction for their acceleration. All kites have Acceleration 4" with the wind and 2" against the wind.

Cargo: The amount of cargo space measured in tons unless noted otherwise. All cargo is purchased in tons and broadly categorized as "perishables," "manufactured goods," and "raw materials," though the classification is rarely important.

The exact dimensions of cargo spaces are deliberately vague to minimize bookkeeping. As a rough conversion, a single ton may be interpreted as a 6-foot cube (1"x1"x1") of space.

Climb Limit (CL): The vehicle's maximum altitude with normal load, expressed as a height level. There are six height levels: Ground (landing and take off), Very Low, Low, Medium, High, and Very High. Changing levels requires a Trimsman skill roll. A level represents 72 feet (12") for range and movement purposes. At Very High altitude, an airship can engage its ether propeller.

Cost: The vehicle's price (in pounds); does not include the cost of ship armaments unless they are part of the ship design (war cruisers, for example).

Crew: The number of crewmembers required to operate the vehicle at full capacity. A "+" following it indicates the maximum number of passengers or gunners. In addition, two extra passengers are possible for every ton of cargo space vacant. Having fewer crewmembers aboard than listed incurs –2 to the crew's Driving skill rolls, and –4 when the complement is less than half.

For a ship, this is the number of crewmembers needed for maneuvering. "B" indicates a boilerman (for steam engines), "C" represents a cranksman (for screw-powered ships), and "T" denotes a topman (for wind-powered kites). Having fewer crewmembers aboard than listed incurs –2 to the crew's Boating skill rolls, and –4 when the complement is less than half. Moreover, an inadequate crew hinders the ship's operation. A character must have Boating skill of at least d4 to count as crewmember. If over one-quarter of the operators have Boating d4, the crew is considered "green" and must subtract 1 from all rolls, in addition to all other modifiers.

The next number is the quantity of gunners ("G") needed to man the ship's armaments effectively. Many vehicles with broadside-mounted weapons can get by with only those gunners needed to fire half of the arsenal at once.

The final number is the amount of Marines ("M") typically on board. These are soldiers trained to fight on ships.

Passengers may be inserted into empty cargo space on a 1-for-1 ton ratio, if necessary, but the journey usually proves less than comfortable.

Cruising Range (CR): The average distance in miles a vehicle may travel per day under normal conditions. Interplanetary Travel Speed (ITS) is given only for ether fliers and used as a divisor into the travel time to see how much it is reduced.

Deck: The number of reserves available to replace injured or killed crewmen and gunners. These are the only men able to fight a fire on the initial round.

Endurance (End): Food supplies available on board to sustain a full crew measured in units equaling two pounds per person each day.

Fuel: The duration for which an engine-powered ship may operate given normal tonnage of fuel (number in parenthesis) without sacrificing cargo, measured in days.

Hull Size: 100x this number derives the amount of lift needed by this aerial ship to attain High altitude. At 80% or less of this value, it can reach Very High; at 101% to 120%, Medium; at 121% to 140%, Low; at 141% to 160%, Very Low. It cannot get off the ground at over 160%.

Officers: The number of bridge officers available for piloting (the helmsman), and raising or lowering the ship (the trimsman, using Knowledge: Trimsman skill). The captain can handle either duty, and on ships of less than 100 tons may do both (albeit with multi-action penalty).

The signalman communicates with other ships by signals (Semaphore as a special language), though may substitute for any officers.

All officers may replace any crewman and perform the appropriate duty.

A second number indicates the number of Marine ("M") officers normally on board.

Ship's Class: Named after the first ship constructed of this type to designate all subsequent ships.

Top Speed (TS): The maximum number of inches a vehicle may move per turn on the tabletop. Wind direction determines a kite's top speed: 14" with the wind, 8" against.

Toughness: The number in parentheses is the vehicle's Armor, already added into the Toughness value. Although many vehicles are listed as having Heavy Armor, it is not always to denote they are particularly well-armored, but rather to reflect the inability of non-heavy weapons to damage them.

Weapons: Listing all armaments aboard and their arc of fire. "F" indicates the weapon can only fire toward the front arc (90°) of the vehicle. "A" indicates the weapon can only fire toward the aft arc (90°). "L" indicates the weapon fires toward the left side (90°), and "R" for the right side (90°). Combinations permit multi-directional firing; for example, "FRA" enables firing to the front, the right side and the aft of the vehicle, a full 270°. Some weapons have a 360° fire arc and are therefore able to fire in any direction.

LAND VEHICLES

BICYCLE

Bicycles in this era have chain-driven rear wheels, pneumatic tires and brakes. Inventors often adapt bicycle frames as the chassis for motors.

Acc/Top Speed: Half rider's Pace/rider's Pace + running die; **Travel Speed:** 25; **Toughness:** 6 (1); **Crew:** 1 + 1 max; **Cargo:** 50 pounds maximum.

CARRIAGE/WAGON

While railways have become the major mode for long-distance transportation, most people still prefer riding in carriages and wagons. The closed carriage remains favored for most journeys and a symbol of the rich. Open carriages exposes passengers to the elements. Wagons are mostly for cargo transport. These stats also include stagecoaches and other animal-drawn conveyances.

The stats assume two animals capable of a 265-pound load each. Otherwise, reduce the passenger/carrying capacity proportionally. If greater, adjust the cargo by the extra carrying capacity. More animals (maximum eight) increase capacity as above, but not speed. If half or more of the animals are killed, the vehicle stops, or crashes when exceeding the acceleration pace.

Acc/Top Speed: Half animal's Pace/animal's Pace + running die; **Travel Speed:** 25; **Toughness:** 10 (2); **Crew:** 1 + 4; **Cargo:** 200 pounds (adds 200 pounds for each person less).

HANSON CAB

A frequent sight in major cities, these animal-pulled taxis prove convenient even in urban areas.

Acc/Top Speed: Half animal's Pace/animal's Pace + running die; **Travel Speed:** 30; **Toughness:** 8; **Crew:** 1 + 2; **Cargo:** 100 pounds.

AQUATIC VEHICLES

LARGE BOAT

Differentiated mainly by carrying capacity, these are the small-cargo sail movers on the canals, rivers and near-shore waterways of Earth, Mars, and Venus. Reduce speed by half against the current.

Acc/Top Speed: 2/10; **Travel Speed:** 1d6x 10; **Toughness:** 13 (2); **Officer:** 1; **Deck:** 1; **Crew:** 2T + 9; **Cargo:** between 2 to 4 tons; **Guns:** None normally, but may mount a forward and/or aft machine gun.

SMALL BOAT

Personal sail or rowed boats, shuttling passengers to and from larger boats, or drifting on the reasonably calm canals and rivers of Earth, Mars, and Venus. Reduce speed by half against the current.

Acc/Top Speed: 2/10; **Travel Speed:** 1d6x 10; **Toughness:** 10 (2); **Officer:** 1; **Crew:** 1T + 4; **Cargo:** between 1.5 to 3 tons; **Guns:** None normally, but may mount a forward machine gun.

STEAM LAUNCH

Relatively small boat powered by a steam engine. Reduce speed by 1 against the current.

Acc/Top Speed: 2/8; **Travel Speed:** 50; **Toughness:** 12 (2); **Officers:** 1, **Crew:** 1B + 9; **Cargo:** between 2 to 4 tons. **Guns:** None, but may mount a front and/or aft machine gun.

AIR VEHICLES

AERIAL LAUNCH

A popular exploration craft known for affordability and adaptability. This craft is extremely common wherever aerial flyers are found.

Class: Launch
Acc/TS: 4/12
Climb Limit: VH
CR: 300

Hull Size: ½ (50 tons)
Toughness 14 (4)
Officers: 2
Deck: 0

End: 1000
Cargo: 5 tons
Weapons: May have 1RFL MG
Fuel: 40 days (20 tons Coal). Steam power overload rules (page 45) apply.

AERIAL SKIFF

Simple wind-driven craft for transferring cargo or people where it may be unsafe to land a larger aerial ship.

Class: Skiff
Acc/TS: ½ Kite
Climb Limit: M
CR: 100 to 200
Food: 0
Cargo: 1.4 tons
Weapons: None

Hull: .02 (2 Tons)
Toughness: 10 (2)
Officer: 1
Deck: 0
Crew: 1T + 1/-0.1 cargo
Cost: £132

PERSONAL CONVEYOR

A one-to-two person flying machine incorporating liftwood for lift and a muscle-powered propeller for velocity. The pilot may double the daily travel speed but must make a Vigor roll or gain a Fatigue level (full day's rest to remove). Personal conveyors with a fatigued pilot travel at half speed.

Acc/Top Speed: Half driver's Pace/driver's Pace + running die; **Climb Limit:** Low; **CR:** 100; **Toughness:** 6 (1); **Crew:** 1 + 1; or **Cargo:** 200 pounds; **Cost:** £50.

SPECIAL AERIAL VEHICLES

These are air ships unlikely to be obtained by the heroes, but may be encountered during their travels. See the Aerial Ship Rules on page 44 for more information. A ship's Class is generally descriptive of its shape and function, but has no rule-based effects.

AERIAL GUNBOAT

The Aphid-class is typical of the light military patrol craft built by the European powers on Mars and occasionally on Earth. They are still rare and often assigned a specific region to patrol. A few have been lost by Britain in her current war with the Martian Oenotrian Empire.

Class: Aphid
Acc/TS: 4/12
Climb Limit: VH
CR: 300
Food: 500
Cargo: 14.5 ton
Weapons: 1LFR LC, 1 FLA and 1 FRA RC, 1 L and 1 R Machine Gun, Heavy Armor.
Fuel: 20 days (40 tons coal). Steam power overload rules (page 45) apply.

GERMAN ZEPPELIN

Developed by Germany and widely sold to nations without reliable access to liftwood or wish to explore Venus, the zeppelin is a rigid airship held aloft by hydrogen. Hull hits on a zeppelin causes only one wound regardless of the weapon's shell, but any critical hit resulting in a fire combusts the hydrogen gas, crashing the zeppelin in flames. Those on board suffer 2d10 fire damage, plus damage from the crash.

Class: Zeppelin
Acc/TS: 4/12
Climb Limit: VH
CR: 300
Food: 1000
Cargo: 94
Weapons: 1 FLA and 1 FRA MG
Fuel: 20 days (20 tons gasoline). Steam power overload rules (page 45) apply.

Hull Size: 2 (200 tons)
Toughness: 16 (4)/5 (0)
Officers: 4
Deck: 2
Crew: 2B + 2G + 15
Cost: £20,000

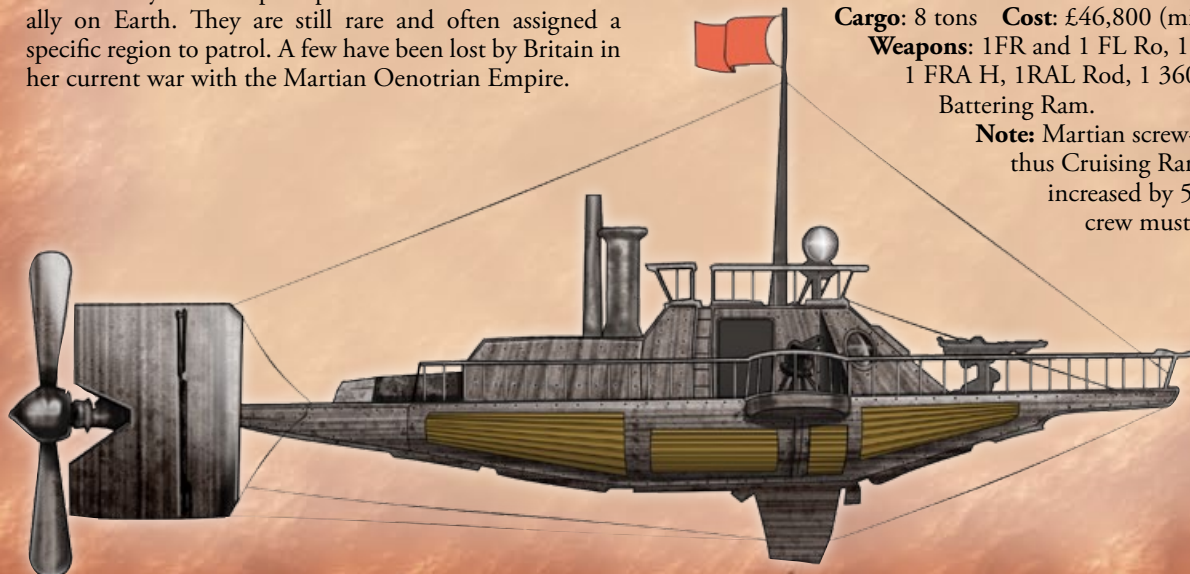
MARTIAN LARGE SCREW GALLEY

The Imperial Oenotrian screw galleys are representative of vessels this size and class. They are fitted with a battering ram to enable collision with other ships and suffer only half normal damage.

Class: Hullcutter
Acc/TS: 2/6
Climb Limit: H
CR: 150
Food: 1000
Cargo: 8 tons
Weapons: 1FR and 1 FL Ro, 1 FLA and 1 FRA H, 1RAL Rod, 1 360° Lob., Battering Ram.

Hull Size: 7 (700 tons)
Toughness: 21 (4)
Officers: 7 + 1M
Deck: 7
Crew: 21C + 14G + 9M
Cost: £46,800 (military)

Note: Martian screw-powered, thus Cruising Range may be increased by 50%, but the crew must make Vigor



roll each day or suffer one level of Fatigue (full day's rest to remove). Fatigued crew is capable of only half normal speed.

MARTIAN LARGE WAR KITE

These powerful air galleons, as demonstrated by the Imperial Oenotrian vessels, have impressive broadsides and often boast decent armor. They are fitted with a battering ram to enable collision with other ships and suffer only half normal damage.

Class: Whisperdeath **Hull Size:** 7 (700 tons)
Acc/TS: Kite **Toughness** 25 (8)
Climb Limit: H **Officers:** 5 + 1M
CR: 200 - 400 **Deck:** 7
Food: 1000 **Crew:** 7T + 10G + 9M
Cargo: 19 tons **Cost:** £59,340 (military)
Weapons: 1 F Rod, 1 FRA and 1 FLA H, 1LA and 1 RA H, 2 drogue torpedoes and 2 liquid fire, Heavy Armor.
Note: Wind-powered, thus Cruising Range is affected by wind direction. Drogue torpedoes (£20) are lowered one height level under ship (reducing Acc. by 1 and Top Speed by 5) and must collide with a target to do 7d12 damage. Liquid fire (£150) is a Large Burst Template weapon which hits a target below with 1d6 flames, -1 per height level difference.

MARTIAN MERCHANT KITE

Merchant kites are quite large, upwards of 2,000 tons, and require a considerably big crew to handle the complex rigging. The crewmembers are often armed to battle pirates.

Class: Warm Winds **Hull Size:** 20 (2000 tons)
Acc/TS: Kite **Toughness** 34 (4)
Climb Limit: M **Officers:** 6
CR: 200 to 400 **Deck:** 20
Food: 1000 **Crew:** 20T
Cargo: 2199 tons **Cost:** £112,600
Weapons: None.
Note: Wind-powered, thus Cruising Range is affected by wind direction.

MARTIAN SMALL SCREW GALLEY

Armed Martian screw galleys, such as the Small Bird-class ships, are used for dispatches and gunboat patrols. Unarmed screw galleys (increase Acc/Top Speed to 2/8, 200 miles/day, Cost: £10,600, Cargo: 100) are usually found as personal pleasure boats for rich Martians.

Class: Small Bird **Hull Size:** 2 (200 tons)
Acc/TS: 2/6 **Toughness** 16 (4)
Climb Limit: VH **Officers:** 4
CR: 150 **Deck:** 2
Food: 1000 **Crew:** 6C + 5G
Cargo: 21 tons **Cost:** £13,000
Weapons: 1LFR Rogue, 1 FLA and 1 FRA S

Note: Martian screw-powered, thus Cruising Range may be increased by 50%, but the crew must make Vigor roll each day or suffer one level of Fatigue (full day's rest to remove). Fatigued crew is capable of only half normal speed.

MARTIAN SMALL WAR KITE

These small aerial ships are usually used for scouting and escorting merchants in reasonably safe areas, or as excursion boats for the wealthy—a tradition started by the original Bloodrunner. Most nations are selling these kites to civilians.

Class: Bloodrunner **Hull Size:** 1 (100 tons)
Acc/TS: Kite **Toughness** 15 (4)
Climb Limit: H **Officers:** 4
CR: 200 to 400 **Deck:** 1
Food: 1000 units **Crew:** 1T + 4G
Cargo: 9 tons **Cost:** £7,600
Weapons: 1FLA H and 1FRA H.
Note: Wind-powered, thus Cruising Range is affected by wind direction. One person can fly this ship in non-adverse conditions.

BRITISH AERIAL CRUISER

Apart from a handful of very large, armed, interplanetary ether flyers, the Intrepid is the most powerful aerial vessel in service with any fleet. Its main and secondary batteries are well-armored, and its 4.7-inch quick firing guns give it a considerable advantage in combat.

Class: Intrepid **Hull Size:** 16 (1600 tons)
Acc/TS: 2/8 **Toughness:** 38 (10)
Climb Limit: H **Officers:** 7 + 2M
CR: 200 **Deck:** 21
Food: 49 **Crew:** 11B + 24G + 18M
Cargo: 302 tons **Cost:** £194,540 (Military)
Weapons: 1 F 6" gun, 1 A 4"L gun, 1 FRA 4"L, 1FLA 4"L, 2L and 2R 4"L, 2L and 2R HRC, 2L and 2R MG, 2 tether mines, 4 bomb racks (4 loads). All weapon crews behind hull-level armor.
Note: Boiler-powered. Heavy Armor. Earth based only.

RANGER-CLASS GUNBOAT

American interests on Mars are, for the most part, nonterritorial and thus require few ships or soldiers to maintain. In the American quarter of Thymiamata, which is now home to several thousand Americans, the small and swift Ranger-class gunboat has entered service.

Class: Ranger **Hull Size:** 3 (246 tons)
Acc/TS: 2/8 **Toughness:** 15 (2)
Climb Limit: H **Officers:** 5
CR: 200 **Deck:** 20
Food: 1000 **Crew:** 20T
Cargo: 33 tons **Cost:** £112,600
Weapons: None.
Note: Wind-powered, thus Cruising Range is affected by wind direction.

SETTING RULES

This chapter features additional rules distinct to the Victorian world of *Space 1889: Red Sands*.

STATUS

As a general rule of Victorian times, inferiors are not permitted to socialize with their betters. There are, however, certain notable exceptions able to fraternize with nearly all ranks of society—fantastically rich dilettantes, heroic soldiers, intrepid explorers, royals, and world famous inventors, to name but a few. Their fame transcends social barriers, garnering royal attentions as easily as preferential bargains from a lowly street hawker, or more importantly, exclusive invitations and privileged grants for endeavors. The most eminent persons of the era are explorers, inventors, and those who have demonstrated honor, valor, and initiative.

Status in Victorian society is crucial for determining how characters interact with people of different stations. Typically, “inferiors” are expected to show a proper modicum of respect to their “betters,” and the upper classes expected to adopt a protective, almost patriarchal stance over those less fortunate, unwashed masses. The very concept of status is based upon a responsibility to aid those who have aided you in the past. A person’s status determines their influence and ability to call upon more powerful Favors from those who owe them. All too often, status is used as a means of intimidation by the upper classes, and an excuse for surliness by lower classes. Some claim the very concept of civility is nearly dead.

Status in *Space 1889: Red Sands* is rated in five levels, as shown in the Status table. Every member of a given status level receives the listed salary at the end of each month of game time. These amounts supersede those listed for the Rich and Filthy Rich Edges in *Savage Worlds*.

Starting characters begin as Working Class, barring Edges or a Hindrance that alters their Status. Being Rich increases Status by one level, and Filthy Rich increases it by

another. Characters with the Noble Edge have their starting Status increased by one level. The Poverty Hindrance reduces Status by one level.

STATUS TABLE

Status	Monthly salary	Max. Favor Cost
Underclass	£4	1
Working Class	£15	2
Middle Class	£35	3
Upper Class	£80	4
Elite	£200	5

A character may actually have Rich (or Filthy Rich) *and* Poverty, reflecting someone who has a lot of money, but spends it wastefully on dissolute pursuits (resulting in a lower Status level and halved wealth).

A character’s Status cannot drop lower than Underclass or rise higher than Elite.

STATUS EFFECTS

People of different status levels do not interact well; the upper classes look down on the lower ones and the lower classes resent and envy their betters.

Upper classes wield power over the lower ones. When using the Intimidation skill, a character gains a +1 bonus for each Status level he is higher than his target, or suffers a –1 penalty for each Status level he is lower.

On the other side, higher classes are more easily incensed by the mocking of their lessers, while the lower classes are unimpressed by the ridicule of those who have such an easy life. Characters gain +1 to Taunt rolls for each Status level they are lower than their target, or suffer a –1 penalty for each Status level they are higher than their target.

The downside of all this class separation is that no class talks freely or shares information with someone of another station. Any use of Streetwise suffers a –1 penalty for each level of Status difference between the characters.



FAVORS

Favors are an important part of *Space 1889: Red Sands*, representing the interplay between the classes and the benefits of rank and privilege. They also serve to motivate players to act heroically toward people who are socially their betters and might not always behave like they deserve to be helped! Characters gain Favors by assisting NPCs in the game. Favors are gained by providing significant support to another person or organization. A character might gain two Favors from a person in the event of directly saving their life, the life of a loved one, or preventing the loss of a Status level.

Consult the Gaining Favors table for specific events that earn Favors for heroes. These are examples of events that can gain Favors for explorers. These are not the only ones by any means.

In general, helping someone gains an explorer a number of Favors equivalent to the Status level of the person aided. In other words, if one helps an Underclass person, she gains 1 Favor. Do something for a Working Class person, gain 2 Favors, and so forth. Gain a prize for a country, your hero gains as many as 3–5 Favors from the Elite Queen, King, or other leader.

GAINING FAVORS

Favors	Event
+1–5	Complete a publicized adventure. The amount of Favors gained depends upon the Status of those aided by the heroes, at the GM's discretion.
+3–5	Seize a prize for a country (for example, a pirate ship of a faction warring with a European power). Favors gained depends on significance of the prize.
+1–5	Help someone avoid loss of Status due to scandal or misfortune.
+1–5	Save someone's life.
+1–5	Successfully researching, creating, and selling a new Invention. The amount of Favors gained depends upon the Status of the buyer.

SPENDING FAVORS

Favors can be spent at any appropriate time (GM's discretion) to gain aid, but a character's Status determines the maximum number of Favors that can be spent on any one form of assistance. It is their station that decides the amount owed—not the debtor's class. See the Favor Costs table, opposite, for examples of what a Favor is worth.

INVENTIONS

Inventions are the lifeblood of the *Space 1889: Red Sands* setting. Steam-powered, bolted, ironclad, and esoteric notions thought of as too fantastic for our own time—let alone the Victorian Era—are capable of existing here. Most inventions are not the products of Weird Science, per se. There is nothing mystical about the ether; it has been proven to exist. Since the actual laws of nature match their scientific postulation in 1889, inventions are simply the embodiment of established scientific principles.

Weird Science skips steps to produce strange prototypes that function only in their creator's hands (take the Arcane Background if you want your hero to do such things). Inventions, by comparison, work for anyone given sufficient reliability.

STEP 1. DESIGN

The origin of any invention is the concept. Decide what it is you are working to build. A compilation of inventions that might intrigue you is included in this book (page 35), or you can conceive something original and discuss it with your GM.

This stage entails applying certain knowledge and making a roll to design the initial schematics. All inventions first require a successful roll of a Knowledge skill (Science, Engineering, or Mechanics) to perform research and draw up the schematic.

Example: *A member of the underclass and an elite both have five Favors to spend. The elite character can spend all five to gain money or equipment equal to £1, but the underclass character can only spend each favor individually to gain -12p each, or 1s for all five.*

Sometimes the heroes get themselves in trouble, behave badly, or commit less-than-savory acts in the pursuit of the greater good. These sorts of scandals can cause huge headaches if they go public, so characters might want to call in their hard-earned Favors to make such problems “disappear.” The Scandals Table lists the Favor costs for doing so.

SCANDALS

Event	Favor Cost
Making unproven or false allegations	1
Divorce, arrest, or other minor scandal	1
Found armed at social events or in civilized urban environments	2
Convicted of a felonious act in a court of law	5
Wanted: Minor (Bounty of 1d4 x £10)	3
Wanted: Major (Bounty of 1d6 x £100)	4

A scoundrel who has no Favors to call in may, at the GM's discretion, lose a level of Status due to the controversy. This is a major event, one that rarely (if ever) happens for scandals whose Favor Cost is 2 or less.

FAVOR COSTS

Benefit	Favor Cost
Gain money or equipment equal to 2s or less. Gain the assistance of a single Guard Extra for one game session.	1
Gain money or equipment equal to 10s or less. Gain the assistance of a 1d4+1 Guard Extras for one game session. Gain the assistance of two Soldier Extras for one game session.	2
Gain money or equipment equal to £1, 10s or less. Gain the assistance of a 2d4+2 Soldier Extras and one Officer, for one game session. Gain the assistance of a Captain for one game session. Gain invitation to “open” social event or club.	3
Gain money or equipment equal to £5 or less. Gain the assistance of a 20 Experienced Soldier Extras and one Officer, for one game session. Gain the assistance of a Captain and his Crew, or the aid of a Wild Card Inventor, for one game session. Gain invitation to “closed” social event or club.	4
Gain a monthly stipend of £5 for six months. Gain the assistance of a 40 Experienced Soldier Extras and one Officer, for one game session. Gain the assistance of 2d4+1 Captains and their Crews, or 2d4+1 Wild Card Inventors, for one game session. Gain invitation to “restricted” social event or club.	5

Choose which Knowledge your inventor uses from among those listed as required to create each device. If two skills are listed and your inventor possesses both of them, his roll to design the device is made at +1. If three skills are listed and your inventor has all of them, the roll is made at +2. Each attempt takes 2d6 days.

On a success your inventor moves on to the next stage, construction. With a raise the inventor gains a +1 bonus on his Repair roll to build the prototype. Failure means the process yielded no usable results, and the hero must begin again. On snake eyes, the principles seem sound but are actually flawed, and as a result the character gets halfway through the construction stage before the project must be scrapped (although half of the necessary components and required time are already expended).

If your hero builds an original invention, you and the GM need to determine what requisite research and materials are involved in completing the plan.

STEP 2. CONSTRUCTION

When the design stage has resulted in a utilizable schematic, an inventor must gain access to the appropriate components or materials (as listed for each invention, or by GM fiat), and at minimum a portable forge suitable for its



construction. Your hero attempts to build the device using the Repair skill (modified by the invention). Each attempt takes 2d6 days.

If your hero scored a raise when creating the schematic, he gains a +1 bonus to the Repair roll. Success means your character has built a prototype with a Reliability die equal to his Rank: Novice: d4, Seasoned: d6, Veteran: d8, Heroic: d10, Legendary: d12. With a raise the Reliability is boosted by one rank (or given a +1 if Legendary). A failure invalidates the effort because of a flawed plan, necessitating additional research. The hero must go “back to the drawing board” and begin again.

On snake eyes the model explodes in a Large Burst Template, dealing 2d6 damage to the inventor and destroying all materials crucial for the invention. The blueprint was inadequately researched or the approach was faulty from the beginning. Either way, your inventor goes back to the research stage.

The successfully finished prototype works perfectly—but only in laboratory and controlled environments, or in the creator’s hands. Prototypes typically cost much less than commercially available creations. The amount of prototypes your hero can build is only limited by time and resources.

RELIABILITY

Every device has a Reliability die, ranging from a dodgy d4 up to an indomitable d12. In the case of prototype devices, Reliability is based upon the inventor’s Rank (Novice: d4, Seasoned: d6, Veteran: d8, Heroic: d10, Legendary: d12) as well as his success in actually building the device. Each device’s description states when Reliability must be rolled (if at all). In all such cases, the roll is made at the standard TN of 4.

For the common man, English and German factories actively churn out machines based on the most novel scientific principles. Commercial devices run the gamut from cheap knock-offs barely better than the prototypes they are based upon, to sleek, fine-tuned machines that actually improve upon the original design. Commercial devices always add +1 to Reliability rolls.

Use the Commercial Device Reliability table to determine the cost of a given invention at each level of Reliability.

COMMERCIAL DEVICE RELIABILITY

Reliability	Invention Cost Multiplier
d4+1	x2
d6+1	x4
d8+1	x8
d10+1	x10
d12+1	x12
d12+2	x15
d12+3	x20

STEP 3. SELLING INVENTIONS

You can avail a consummated invention commercially as long as there is a demand. If similar creations have already saturated the market—for example, the conventional boiler—you won't find any outlet for another device of identical function.

However, if you are among the first innovators, you have a chance to either vend the manufacturing rights or rely on patent revenues. Selling the invention generates 1,000 times your prototype cost as a one-time deal, but bars you from producing the plans and the device ever again, and you also lose the perfected prototype in the transaction. (You can always purchase one for yourself later!)

Applying for a patent costs $2d6 \times £10$ and $4d6$ weeks of waiting for approval. Each patent brings in $2d6 \times £10$ in royalties per month for the next 10 years of game time. However, should the dice for length of time show nothing but sixes, someone else has beaten you to the punch for the patent with a competing design. Your device is now worth whatever a buyer is willing to pay (typically 25–50% of the normal value).

SECURING INVESTORS

Sometimes an inventor needs people to believe in her—people with money. Your genius discovers an investor with a successful Streetwise roll (a success finds one, or two on a raise, and a charlatan on critical failure). Once you have identified the potential source of funding, you must attempt to convince the prospect that your idea will make him or her rich!

Make a Persuasion roll (which may be cooperative). On a success, the prospect becomes a backer and sinks £25 per month (£50 per month on a raise) into a specified invention until it is complete. A charlatan might attempt to steal the schematics, and the prototype as well.

An inventor must report his progress (by mail, if not in person) every two weeks to keep the investor happy, and demonstrate at least one research or construction success each time. Once a prototype is built, the investor expects to put it into mass production within one month.

Failure to comply might cause the investor to become disenchanted and demand the return of all investments to date, or even confiscate the prototype for ransom until the money is repaid.

The investor then attempts to sell the invention, splitting the proceeds evenly with the inventor (and other investors). The GM is encouraged to explore this relationship as some investors become good friends with the inventors, some turn into bitter enemies, some just bothersome nuisances, and the rest remain “strictly business.”

LIST OF INVENTIONS

The following table provides the details on a number of known and common inventions, many of which are commercially available. Inventors may attempt to produce their own versions of these machines, or simply use the list as inspiration for creating one's own flights of genius. The required Experience Rank to build each device is listed in its own column.

All costs listed on this table are for prototypes only. Commercial versions cost up to 20 times the price of a prototype to buy, but they're worth it. Consult the Commercial Device Reliability table (page 34) to determine the cost multiplier for commercial versions at each level of Reliability.

CUSTOM INVENTIONS

Sometimes your inventor needs a very specific device for a precise purpose, and nothing else will do. That's when you must go the drawing board, sweat over a set of plans for several long nights, and devise a way to make scientific principles work in your favor.

First you need to figure out the mechanics for the new artifice, and talk them over with the GM. Here we provide you with a few design notes to keep in mind when creating your own, original inventions.

No Need to Reinvent the Wheel, Old Chap: This book contains a comprehensive list of weird gadgets. Take advantage of them. If an existing machine does something similar to what you're going for, consider adapting it to your purposes. Or change the “Trappings” of an invention so it better emulates your inventor's particular talents.

Considerations of Power: Generally speaking, steam-powered technology is easier to construct, while more exotic power sources such as internal combustion engines and various turbines are more difficult.

Required Knowledges: Engineering involves the practical application of scientific principles to real-world designs, Mechanics is the branch of physics that deals with the behavior of bodies in space, and Science is a catch-all term for the various disciplines—Biology, Chemistry, etc.

Repair/Construction Modifier: This modifier ranges from +4 to –4, for the most part, reflecting how difficult it is to create and service the device, as well as how exotic/powerful the device is. A device that subverts the very laws of nature might have a modifier as severe as –5.

Cost: Use the listed inventions' prices as a guide. Of course, exotic fuels and materials tend to cost more money. Alternately, your inventor could travel to some exotic locale and collect what she needs!

Power Production	Required Knowledge Skill	Repair/Const Mod	Cost	Rank
Boiler, Conventional	Mechanics	+4	£15*	N
Boiler, Forced Draught	Mechanics, Science	+2	£30*	S
Boiler, Petrol	Mechanics, Engineering	+1	£15*	V
Boiler, Solar	Mechanics, Science	-1	£25*	H
Engine, Electric	Mechanics, Engineering	+0	£10	S
Engine, Internal Combust	Mechanics, Engineering	-2	£30	V
Turbine, Gas	Mechanics, Engineering	-4	£50	S
Turbine, Steam	Mechanics, Engineering	-3	£40	N
Power Storage				
Batteries	Mechanics, Science	+3	10s*	S
Solar Cells	Mechanics, Engineering, Science	-5	£100	V
Fuel Inventions				
Coal Gasificator	Mechanics, Engineering, Science	+3	£20+	N
Fuel, Liquid Rocket	Mechanics, Engineering, Science	+0	£2/ton	S
Fuel, Solid Rocket	Engineering, Science	+2	£1/ton	V
Fuel Refiner	Engineering, Science	+4	£15+	N
Hydrogen Lift	Engineering, Science	+1	Free+*	S
Monohydrogen	Mechanics, Engineering, Science	-2	£7/ton	H
Aerial Flyers				
Ether Sail	Mechanics, Science	-1	£5/Power Level	V
Gravity Control	Mechanics, Engineering, Science	-5	£10/Power Level	H
Liftwood, Improved	Mechanics, Engineering, Science	+2	£3, 12s/gal	S
Propeller	Mechanics, Engineering	+2	£2/Power Level	N
Propeller, Ether	Mechanics, Science	+1	£1/Power Level	V
Rocket Engine	Mechanics, Engineering, Science	-3	£1/ton	H
Aerial Flyer Equipment				
Analytical Engine	Mechanics, Engineering, Science	-3	£100	V
Armor Glass	Mechanics, Engineering, Science	-4	£50/ton	V
Etherometer	Mechanics, Engineering, Science	+3	£2	N
Gyroscope	Mechanics, Engineering, Science	-2	£20	S
Hertzian Commo	Mechanics, Engineering, Science	-2	10s/Power Level	S
Inertial Compass	Mechanics, Engineering, Science	-4	£10	V
Large Telescope	Mechanics, Science	+3	£20*	N
Orrery	Mechanics, Engineering	-1	£2	N
Photophone	Mechanics, Engineering	-1	£100	V
Range Finder	Mechanics, Engineering, Science	-1	£2*	S
Rustless Iron	Science	+3	1s/lb.*	S
Superhard Steel	Engineering, Science	+1	£5/ton*	V
Personal Devices				
Antibiotic	Science	-2	£3/oz.	S
Aspirin	Science	+1	£4*	N
Detonite	Engineering, Science	-4	1s	N
Food Pill	Science	-1	4s/oz.	S
Hand Lamp	Mechanics	+3	4s*	N
Infrared Liquid Sight	Science	-3	10s	V
Mineral Detector	Mechanics, Engineering, Science	+1	£10	S
Parachute	Engineering, Science	-3	6s	S
Sleep Gas	Science	-1	1s/oz.	N
Strength Elixir	Science	-4	4s/oz.	N
Suit, Diving	Mechanics, Engineering, Science	+3	£2*	N
Suit, Space	Mechanics, Engineering, Science	+2	£2*	S
Tangle Cord	Mechanics, Engineering, Science	-4	8s	S
Telescope, Infrared	Mechanics, Engineering, Science	-2	£15	S/V

Personal Devices (cont.)	Required Knowledge Skill	Repair/Const Mod	Cost	Rank
Water Breather	Mechanics, Engineering, Science	-4	£1, 4s	V
Welding Device	Mechanics, Engineering, Science	+2	16s	N
Woven Steel	Mechanics, Engineering, Science	-1	£1/suit	S
Vehicles				
Autogyro	Mechanics, Engineering, Science	-3	£7/ton	S/V
Glider	Mechanics, Engineering, Science	-1	£3/ton	N
Heavy Tractor	Mechanics, Engineering	-2	£50	S
Motorized Bike	Mechanics, Engineering	+1	£6	N
Personal Conveyor	Engineering, Science	+1	£5	S
Submarine	Mechanics, Engineering	-3	£500	V
Vehicle Weapons				
Lightning Cannon	Mechanics, Engineering, Science	-4	£50	H
Torpedo	Mechanics, Engineering	-3	£5	S
Torpedo, Improved	Mechanics, Engineering	-3	£20	V
Combined Inventions				
Required Inventions				
Aeroplane	Glider and Internal Combustion Engine	-4	£7/ton	V
Computer, Astrogation	Orrery and Analytical Engine	-1	£113	
Computer, Ballistic	Range Finder and Analytical Engine	-2	£113	
Flyer, Aerial	Lift, Propeller, and Conventional Boiler	+2	£125/Power Level*	
Flyer, Ether	Lift, Solar Boiler, and Ether Propeller	+2	£129/Power Level*	
Space Telescope	Large Telescope and Gyroscope	-1	£44	

A * means the device is available commercially.

INVENTION NOTES

Aeroplane: A heavier-than-air flying machine. The speed of the aeroplane in miles per hour is 60 + Reliability x5. An aeroplane consumes 70 pounds of gasoline per hour of flight and usually carries 280 pounds of fuel. It typically carries a machinegun, 1,000 pounds of fuel, cargo and/or bombs, and weighs 500 pounds, plus fuel and cargo.

Acceleration/Top Speed: Reliability x2/Reliability x3;
Toughness: 14 (2); **Crew:** 1+1 passenger; **Cost:** £7/ton;
Notes: Climb 10.

Analytical Engine: Mechanical computing machine utilizing punch cards for memory and programming. It provides a +1 bonus to Navigation rolls with a Reliability success, or +2 on a raise. Weighs 1 ton.

Antibiotic: Medical substance with bactericidal properties. It can be taken orally, applied topically, or injected into a body to battle infection and disease. The activation of a prototypical dose (on a successful Reliability check) grants +1 bonus to a Healing or Vigor roll to cure disease or heal a wound, or +2 on a raise. A Reliability roll of 1, however, causes -2 to the Healing or Vigor check. Weighs 1 ounce per 10 doses.

Armor Glass: Extremely hard glass that affords real protection without obstructing vision. It has the same Toughness as the outfitted vehicle's Toughness.

Aspirin: Analgesic medicine derived from salicylic acid, for relieving pain and the symptoms of fever. When taken every four hours while injured or ill, the user may ignore 1 wound penalty for an hour on a successful Reliability roll, and gains +1 to Vigor checks to recover from fever (two

hours and +2 on a raise). Dosage is two pills for an adult or one pill for a child every four hours. More dosages within the same duration have no additional effect. Negligible weight (but roughly 1/2 pound for 1,600 pills).

Autogyro: A flying machine depending on both powered and unpowered devices to lift and provide forward motion. It has a Cruising Range of 10x Reliability in miles per hour, a Climb Limit of Very High, and room for up to 1,560 pounds of cargo/passengers (200 of which is normally reserved for fuel tanks). An autogyro weighs 440 pounds.

Acceleration/Top Speed: one-half Reliability/Reliability x2; **Toughness:** 8 (2); **Crew:** 1+5; **Cost:** £7/ton; **Notes:** Consumes 50 pounds of gasoline per hour.

Batteries: Large vehicle batteries are defined by the Power Level contained within and Endurance (how long they can sustain the power output in days). Batteries have been perfected with a Power Level up to 8 but not beyond. Invented batteries' Power Level equals their Reliability. All batteries have a weight of Power Level x 1/2 x Endurance in tons, a cost of 10s x Power Level x Endurance.

Boiler, Conventional: Supplies power for most large vehicles and many buildings and homes. Weighs 10 tons, costs £150, and consumes 1 ton of fuel (coal) per day, all per Power Level. Boilers explode for 1d6 damage per Power Level, in a Large Burst Template.

Boiler, Forced Draught: An improved version of the conventional boiler, it uses a fan or blower to enhance fuel combustion and extract energy more efficiently. Weighs 5 tons and consumes 1 ton of coal per day, per Power Level. It is otherwise identical to the conventional boiler.

Boiler, Petrol: A steam boiler consuming liquid fuels (usually petroleum). It uses just 1/2 ton of fuel (oil) per day per Power Level, but otherwise identical to a conventional boiler. Petro boiler has perfected versions.

Boiler, Solar: Harnesses the power of the sun with focusing mirrors. Weighs 1 ton per Power Level, but Power Level is restricted to a maximum of no higher than the Reliability die. Prototypes cost £25 per Power Level. Commercial designs cost £250 per Power Level with no limit other than what you can fit on a ship. It does not consume fuel but eventually the pipes need cleaning.

Coal Gasificator: Converts coal ore directly to gasoline. For every five tons of coal processed, you receive one ton of gasoline. The conversion takes 8 hours and 2 Power Levels of output. The device weighs 1 ton.

Computer, Astrogation: Automatically adjusts the controls of an ether flyer and calculates the most efficient course to the destination. An astrogation computer grants +4 to Navigation rolls and is able to auto-pilot a flyer in the ether at Piloting skill equal to its Reliability. Weighs 1 ton.

Computer, Ballistic: A ballistic computer that passes its Reliability check increases a gunner's Gunnery skill one die type, or two die types on a raise, for a single combat. Weighs 1 ton.

Detonite: More powerful than dynamite, more stable than nitroglycerin. Detonite is available in half-pound sticks like dynamite, but each stick has a damage value of 2 times Reliability (2d4, 2d6, 2d8, etc.) and explodes in a Medium Burst Template. Additional detonite sticks increase damage by +1 and add +1" to the effective blast radius. Weighs 1/2 pound per stick.

Engine, Electric: Electric batteries to power flyer instruments such as ether propellers and atmosphere propellers. Weighs just 1/2 ton per Power Level, but Power Level is restricted to a maximum of no higher than the Reliability die. This is a very safe engine unless sabotaged or wired to produce an explosive arc (damage is as a conventional boiler, but limited to the engine's proximity).

Engine, Internal Combustion: Burns fuel inside the cylinder instead of outside, these engines take liquid fuels such as kerosene or petroleum. Weighs 3 tons per Power Level, but Power Level is restricted to a maximum of no higher than the Reliability die. These devices do not explode and use just one-half ton of fuel (oil) per Power Level generated per day.

Engine, Rocket: Enables an ether flyer to maneuver safely in low- to-zero-gravity environments, making landings on Luna and on asteroids hazard-free. Weighs 1/4 ton per Power Level, but Power Level is restricted to a maximum of no higher than the Reliability die, and the flyer's mass must be equal to or less than the engine's Power Level x20. The engine costs £1 per ton and 10 times for a perfected model. Acquire fuels separately, and the rocket consumes 1/2 ton of solid fuel per Power Level, or 1/4 ton of liquid fuel per Power Level, for each landing or liftoff.

Ether Sail: An alternative for locomotion, this sail relies on the ether currents for propulsion. It functions like an ether propeller but must be installed at a Power Level and weight of one-tenth the ship's tonnage (rounded up). It has 30 Efficiency and a cost of £5 per Power Level for a prototype. Power Level is the output required from the ship's generator.

Etherometer: Measures the density of the ether in deep space and utilized to avoid ether turbulence. Cost £2 for a prototype and weighs only 20 pounds when finished. When encountering ether wake, use the Reliability die as a cooperative roll for bonus to the Piloting check to avoid damage.

Flyer, Aerial: Much like the ether flyer, this is a fairly complex machine. It requires a lift, a power plant, kite design or air-screw crew, a propeller, some key crewmen and quarters for long-distance traveling. For full construction details, see **Construction of Flyers** on page 48. All components are considered to be at the inventor's Reliability level unless purchased commercially. The following example is the largest flyer that can be assembled without a shipyard: the 20-ton hydrogen flyer.

Example: The 20 tons of hydrogen lift and frame can be invented for free. Liftwood can be used but costs £100 per ton. The controls station, with scrounged running lines and gears, occupies one ton of lift. The propeller is the next necessary invention but predicates on the boiler. Therefore, we move on to the power plant, usually a boiler, which powers the propeller. It equates to 10 tons per potential Power Level, and a 0.25- or 0.5-Power Level plant weighing 2.5 (£17, 10s) to 5 tons (£35) is usually sufficient for a flyer this size. You need at least a pilot, a trimman if the pilot does not have that skill, and one engineer with Repair for the boiler. Each crewman occupies 1 ton of space but the first ten quarters can be constructed for only £3 each, £30 apiece thereafter. Given 2.5 to 5 tons for boiler and propeller, 1 ton for controls and 3 tons for crew (minimum), leaving you 11 to 13.5 tons for fuel, provisions, additional quarters, or a weapon mount. This prototype's design cost is £26, 10s to £44, £265 to £440 if purchased as a commercial plan, before maintenance and extras.

Acceleration: 4 or 6; **Top Speed:** 12 or 20; **Cruising Range:** 300 or 500 miles/day; **Toughness:** 14 (4); **Crew:** 3 + 13.5 or 11 tons of cargo/crew/fuel; **Notes:** Consumes 1/4 or 1/2 ton of coal per day. This flyer enables movement from ground to High (Very High if kept to 16 tons or less, Medium between 20 and 24 tons, Low between 24 and 28 tons).

Flyer, Ether: One of the most complex combination-inventions. It requires a lift, a solar boiler, an ether propeller, someone with Knowledge (Navigation), Knowledge (Trimman), Piloting, and Repair skills. All components are considered to be at the inventor's Reliability level unless purchased. The following example is the largest ether flyer that may be built without a shipyard: the 20-ton hydrogen-lift ether flyer.

Example: The 20 tons of hydrogen lift and frame can be invented free. Liftwood can be used but costs £100 per ton. The controls station, with scrounged running lines and mechanisms, occupies one ton of lift. The ether propeller is the next necessary invention and takes up to one ton per Power Level, followed by the solar boiler to power the ether propeller, which weighs a ton per Power Level desired. Both need to be under 4 tons each for a flyer this size.

You need at least a pilot, a trimman if the pilot does not have the Trimman skill, and two engineers with Repair (assuming a full, four-ton solar boiler). Each crewman occupies 1 ton of space but the first ten quarters can be constructed for only £3 each, £30 apiece thereafter. Given 8 tons for boiler and propeller, 1 ton for controls, and 3 tons for crew (minimum), this leaves you 4 tons of space left for air screw and power plant for atmospheric travel, fuel, provisions, additional quarters or a weapon mount. This prototype's design cost is £129, £1290 if purchased commercially, before extras. It enables flight like a balloon (drifts with the wind), movement from ground to Very High, Toughness 14 (4), and flight through space at a speed of at least $4 \times 24/20$, or 4.8, which rounds to 5 million miles per day. (For extras, see **Construction of Flyers** on page 48.)

Food Pill: Sustenance for the human body synthesized into tablets. A pill is the equivalent of a full meal when taken with a pint of water. Pills must make a Reliability check to provide the proper nutrients. Weighs 1 ounce.

Fuel, Liquid Rocket: Volatile, chemically refined liquids delivered to a rocket engine in measured levels to reduce the volume of fuel needed for improved thrust. Since the liquids are stable unless exposed to a spark or excessive heat and the combustion occurs inside the rocket engine, this fuel is safer than the solid type. Roll the Reliability die to determine the rocket engine's performance; on a roll of 1 it explodes. Treat an explosion as solid rocket fuel and add a fire result. If used for anti-vehicular or -structural weapons, the rockets' range is 216", always treated as Long range, and explodes on contact for 2d12 Heavy Weapon damage with AP 6; costs £12 for every six prototypes.

Fuel, Solid Rocket: A careful mix of gunpowder and other chemicals to ignite and thrust forward a rocket. Primarily of military and entertainment applications, this fuel may be added to a rocket engine but that is risky. If a 1 is rolled on the fuel or rocket's Reliability die, the fuel explodes for three times Reliability die in damage to the ship and automatically ruins the rocket engine. If used for anti-vehicular or -structural weapons, the rockets' range is 144", always treated as Long range, and explodes on contact for 2d10 Heavy Weapon damage with AP 4; costs £60 for every six perfected versions, £6 for every six prototypes.

Fuel Refiner: This potentially portable device lets you refine gasoline from crude petroleum. For every 5 tons of crude petroleum processed, you get 1 ton of gasoline and 4 tons of usable oil. The conversion takes 8 hours and 2 Power Levels of output. The device weighs 1 ton by itself.

Glider: This invention takes advantage of Bernoulli's Law to provide lift through the interaction between specially shaped wings and the atmosphere—similar to how terrestrial birds glide while in flight—and thus is independent of liftwood. The glider has room for only one pilot but is able to reach speeds of 60 miles per hour. The difficulty is getting it into the air. If dropped from an aerial flyer or launched off a mountain, it starts at the climb level of the launch. The glider must always move at least its Acceleration in distance or it drops one height level. The pilot can choose to descend but only by catching a thermal updraft near a mountain or similar steep surface will it climb. It takes a successful Piloting roll at -2 (or worse) to maneuver over an obstacle.

Acceleration/Top Speed: one-half Reliability/ Reliability, Cruising Range of 50x Reliability per day, and must roll Reliability when launched to do so successfully. **Toughness:** 8; **Crew:** 1; **Cost:** £3/ton; **Notes:** A glider can carry 1600 pounds for every 400 pounds of its weight.

Gravity Control: Capable of offsetting gravity much like magnets can be positioned to repel one another. The Reliability die determines the maximum climb an outfitted vessel may achieve: d4 = Very Low, d6 = Low, d8 = Medium, d10 = High, d12 = Very High. Weighs zero when activated and 50 pounds per Reliability die when shut off. Costs £10 per Power Level and requires ship's weight/100 (round fraction up) in Power Level.

Gyroscope: Larger, better cousin of the toy gyroscope. Inclusion of a gyroscope aids a trimman's recovery of the trim in a storm or battle with a cooperative roll using the Reliability die. Weighs 1 ton.

Hand Lamp: Perfected as Ruhmkorff's Apparatus, this illumination device is attached by a cord to a voltaic battery and a hand-cranked generator on a belt or backpack. In darkness, it provides six feet (1") of visibility per Reliability die. Weighs 5 pounds. Voltaic cells are purchased separately.

Heavy Tractor: A steam-powered land vehicle moving on rotating steel treads, capable of crossing most terrain types.

Acceleration/Top Speed: 1/2 Reliability/Reliability; Cruising Range of Reliability in miles per hour. **Toughness:** Reliability + 4, and 4 Armor if constructed of wood, 6 points if metal; **Crew:** 1+3; **Cost:** £50; **Notes:** Weighs 5 tons, and consumes 1/2 ton of coal every 8 hours. Able to pull 2 tons.

Hertzian Wave Communicator: Also known as radio or wireless telegraph, the Hertzian wave communicator broadcasts electrical signals through the ether without wires. The Reliability die determines both maximum range and the required power to send signals: d4 = 200 miles, Power Level 4; d6 = 2,000 miles, Power Level 6; d8 = 200,000 miles, Power Level 8; d10 = 2,000,000 miles, Power Level 10; d12 = 20,000,000 miles, Power Level 12. Weighs 10 pounds per

Power Level, costs £1 per Power Level. In atmosphere, the range for all models is limited to the horizon, barring the presence of relay towers.

Hydrogen Lift: Applies hydrogen gas to lift a flying vehicle airborne. Hydrogen costs £50 per ton, but an inventor can create 20 tons worth at no cost to outfit an aerial invention with this device and pay only the excess. Prototype hydrogen containment units require a success on Reliability check to deploy. This is not practical for vehicles over 200 tons due to rapid loss of altitude. It can lift up to 160 tons to Very High level, and 161 to 200 tons to High. It loses one maximum height level for every 40 tons beyond: 201 to 240, Medium; 241 to 280, Low; and it cannot leave ground at over 280 tons.

Infrared Liquid Sight: Drops of this liquid into the eyes enables the user to see into the infrared spectrum of light, as per the Infravision monstrous ability. The duration is Reliability in hours. The drops require a successful Reliability roll to function. Weighs 1 ounce per dose.

Inertial Compass: Developed because conventional compasses do not work on Venus and not well underground. The device requires a Reliability success to indicate correct directions. Inertial compasses have a Toughness equal to the Reliability die. Weighs 50 pounds.

Liftwood, Improved: A chemical compound that enhances the lifting power of Martian liftwood, but has no effect on its decay. One gallon treats 50 tons of liftwood, doubling its lift capacity on a successful application, and triple on a raise. A failure reduces the capacity by 50%. Weighs 8 pounds per gallon.

Lightning Cannon: May be mounted on a sufficiently large vehicle and is capable of firing a bolt of lightning toward a big target, such as a building, another vehicle, or a dinosaur. A successful Reliability check is necessary to avoid a fire result. Lightning Cannons need a power source with Power Level 2.

Range: 50x/100x/200x Reliability; **Damage:** 3x Reliability; **AP:** Reliability; **RoF:** 1. **Cost:** £50.

Mineral Detector: Often used for treasure hunting, this device can detect underground deposits of precious minerals, such as silver or gold, within 18' (3") times Reliability. The GM rolls the Reliability check to determine whether it detects hidden minerals. Mineral detectors use a voltaic cell (obtained separately) for up to 8 hours of operation. Weighs 100 pounds.

Mono-hydrogen: Mono-particle hydrogen providing 50% more lifting power than normal hydrogen at the same quantity, enabling a lift of up to 300 tons before the vehicle's climb capabilities degrade (losing one max height level for every extra 30 tons). Recharges as hydrogen lift.

Motorized Bike: Putting a motor on a bicycle may seem crazy but certainly improves the speed! This motorized version has the statistics of a bike but Acceleration is one-half the Reliability and Top Speed of 2x Reliability, Travel Speed of 5x Reliability, Cruising Range of 10x Reliability

in miles before out of fuel. Bikes need a Reliability success to get moving. Weighs 45 pounds (includes 2 gallons of gasoline).

Orrery: A mechanical model of the solar system with models of planets moving on gears to show their celestial positions at any specified time. A Reliability roll adds +1 to a subsequent Navigation roll on a success, +2 on a raise. Weighs 5 pounds.

Parachute: Large cloth canopy, usually silk for lightness and tenacity, for slow descent through atmosphere. Roll a Reliability check upon deployment to see if it works. Weighs 20 pounds.

Personal Conveyor: A small single- or double-passenger flying bicycle using liftwood for ascent, and propellers, vanes, or flaps for propulsion and steering. The personal conveyor needs a Reliability success to get off the ground.

Acceleration/Top Speed: one-half Reliability/Reliability; **Toughness:** 6; **Crew:** 1/1+1; **Cost:** £5; **Notes:** Lifts 200 pounds, weighs 26 pounds.

Photophone: Utilizes light waves in lieu of electricity to transmit voice communication. When focused with fair precision, it enables two parties to communicate securely in space. It ceases to work in atmosphere or inside Mercury's orbit. It has a range of half-a-million times the Reliability die in miles. It requires a Reliability check to function. Weighs 500 pounds. Photophones require 2 Power Levels of output to operate.

Propeller: Perfected by many inventors, this locomotion device propels ships through water or atmosphere. All propellers' weight is included in the boiler weight powering them. They have an Efficiency of 300 times the Reliability die. Power Level is the output required from the ship's generator. A propeller powers a ship at the speed of Power Level x Efficiency/Tonnage of Ship or 100 (whichever is greater), rounded down (if the result exceeds six, halve the margin over six, rounded down), then times 5 in miles traveled per hour.

Propeller, Ether: Invented by Thomas Edison 19 years ago, this electric device was instrumental in pioneering interplanetary travel. Three commercial models are produced: the Edison Propeller, at 25 Efficiency and a cost per Power Level of £1000; the Armstrong Propeller, at 20 Efficiency and a cost per Power Level of £500; the Zeppelin Propeller at 15 Efficiency and a cost per Power Level (limit 4) of £100. Inventors can create prototypes at a cost of £1 per Power Level, but are restricted to no higher than the maximum of the Reliability die, with 20 + Reliability die in Efficiency. Power Level is the output required from the ship's generator. It weighs 1/2 ton per Power Level. A propeller powers a ship at the speed of Power Level x Efficiency/Tonnage of Ship, rounded up, in millions of miles traveled per day.

Range Finder: This stereoscopic optic instrument provides precise calculations of distance to a target and increases Gunnery skill rolls. The device treats Medium

range as Short, and Long range as Medium on a successful Reliability roll, or contracts all ranges to Short on a raise. Weighs 10 pounds.

Rustless Iron: Rust- and corrosion-proof version of iron. Incredibly popular on Venus, the Venusians trade rare plants worth £10 for each pound of rustless iron. Roll a Reliability check every week on Venus, and every month elsewhere under wet conditions. On a 1 the iron begins to oxidize.

Sleep Gas: Extremely reactive liquid that vaporizes into gas when exposed to air, and causes unconsciousness within seconds if inhaled, unless passing a Vigor check. The gas needs a successful Reliability roll to vaporize properly, and with a raise the Vigor check is at -2. It covers one Medium Burst Template per ounce.

Solar Cells: Converts sunlight directly to energy with a power output equal to its Reliability die. Subtract 4 from the output if operating in an atmosphere, subtract 4 for every orbit further out from Earth or Luna, and add 2 for every orbit further in than Earth or Luna. Solar cells are useless on Venus. Weighs 1 ton.

Steel, Superhard: Steel alloy with much improved durability. Vehicles built with superhard steel gain a +1 Armor bonus, and it is considered Heavy Armor. A successful Reliability check for prototypes gives +1 Armor on a success, +2 on a raise. Multiply the Armor value by 1.5 (rounded down) for plates and suits fashioned from commercial superhard steel.

Steel, Woven: A procedure for creating a flexible, fabric-like material from steel for fashioning truly impressive body armor. Woven steel grants its Reliability die in points of Armor. Woven steel protects the torso for base price, can be tailored for the torso and arms or both legs for double the price, and torso, arms, and legs for triple the cost. The material weighs 1 pound per point of Armor, plus an additional 50% for arms or legs and 100% for both.

Strength Elixir: Exotic, injected concoction that boosts a person's strength with extracts of adrenalin. One dose raises a user's Strength two die types for its Reliability die in hours. Roll Reliability to determine whether the elixir works as designed; on a raise the duration is doubled. On snake eyes, the user suffers an adverse reaction and must roll Vigor (-2) or suffer 1 level of Fatigue (removed with 8 hours of rest after the elixir expires). Weighs 1 ounce per dose.

Submarine: A submersible vehicle for undersea explorations, powered by electric batteries while submerged and conventional boiler on the surface. It has a Top Speed of 5 miles per hour underwater, Reliability x2 in miles per hour on surface. It can submerge for its Reliability in hours before surfacing to recharge batteries. Submarines need a Reliability success to get moving. Weighs 20 tons.

Acceleration/Top Speed: 2/6; **Toughness:** Reliability +4 (Armor 6); **Crew:** 6+4; **Cost:** £500; **Notes:** A torpedo may be substituted for two passengers; consumes 1 ton of coal for fuel per day.

Suit, Diving: Sustains the user and enables voluntary movements underwater, without a long air hose attached. The maximum length of time in minutes before needing oxygen recharge is Reliability x10, but the user must roll a success on Reliability every 30 minutes or begin to drown. Weighs 10 pounds.

Suit, Space: Sustains the user and enables voluntary movements in vacuum. The maximum length of time in minutes before needing oxygen recharge is Reliability x10, but the user must roll a success on Reliability every 30 minutes or begin to suffocate. Weighs 20 pounds.

Tangle Cord: A spray can that fires an adhesive web (Range 3/6/12) covering a Medium Burst Template. It traps anyone caught under it or entering into it (per the *entangle* power). The duration is Reliability in hours, at the end of which the web hardens to a flakey plaster and crumbles to dust when touched. Tangle cord requires a Reliability success for the adhesive to function, but a raise incurs -2 on escape attempts. Each 2-pound can holds 8 webs.

Telescope, Infrared: Affords its user the *infravision* ability to see through darkness, fog, and mists. Too bulky to carry, it is usually mounted on vehicles. The device must succeed on a Reliability check to function. Weighs 100 pounds.

Telescope, Large: Designed for astronavigation. When charting a course with the aid of a telescope, roll the Reliability die as a cooperative roll. The chartsman gains +1 on his Navigation roll for a success, or +2 on a raise. Weighs 400 pounds.

Telescope, Space: A space telescope requires a Reliability success to focus clearly on a distant object in space, planet, or celestial body. On a successful Reliability check it grants +3 to Navigation rolls (+4 on a raise) when charting a course in the ether. This bonus supersedes those from the large telescope and orrery. Weighs 1.6 tons.

Torpedo: May be fired from either a submarine or surface vessel. Torpedoes explode on impact, with success on a Reliability check. If the Shooting die comes up 1 (regardless of any Wild Die), the torpedo has a mechanical fault and fails to function. On snake eyes, the torpedo explodes inside the tube, doing full damage to the vessel and setting off any other explosives in range.

A canny helmsman can attempt a Piloting roll (-4) to avoid oncoming torpedoes. A separate roll is required to evade each one.

Range: 30/60/90; **Damage:** 4d8+2, AP 10, Heavy Weapon; **Weight:** 500 pounds; **Cost:** £5.

Torpedo, Improved: Exactly like the torpedo, but Range is 60/120/180. Costs £20.

TRANSPORTATION COSTS

Transportation Type	Cost	Notes
Foot	nothing	10 miles/day, 20/day force march
Cab	1s	1 person for up to 2.5 miles or 1 hour
Cab per extra person	1s	Cabs can travel 25 miles/day, 4 passengers
Cab per set of luggage	1s	Up to 150 lbs. of luggage
Carriage	3s	Per 30 miles/person or set of luggage
Wagon	2s	Per day/person covers 10 miles
Riding, Animal	3s	Per day/person covers 20 miles
Riding, in Howdah	2s	Per day/person covers 10 miles
London Underground	1s	Per stop, 5-10 minutes between stops
Train, 1 st Class/2 nd Class	2s/1s	Per 10 miles, speed 25 miles/hour
Train, Baggage	1s	Per 50 miles – cross country 50 m.p.h.
Train, Sleeper	3s	Per 10 miles
Ferry	2s	Per trip, speed 10 miles/hour
Ocean Liner, 1 st Class/2 nd Class/Steerage	£1/10s/5s	Per 100 miles, speed 300 miles/day
River Steamer	1s	Per 10 miles, speed 5 miles/hour
Zeppelin or Steam Flyer	10s	Per 300 miles, speed 300 miles/day
Martian Flyer	6s	Per day, speed 200-300 (400 Kite)/day
Interplanetary Ether Liner	£6	Liner passage/trip, 2 occupants/room
Interplanetary Ether Cargo	£4	Cargo passage/trip, 2 occupants/room

Turbine, Steam: Uses high-pressure steam to turn rotary vanes, enabling it to produce the same power for the same cost at half the weight (2 tons per Power Level, but Power Level is restricted to no higher than the Reliability die). The maximum power output is the prototype's Reliability. These devices can explode, and do so with more force (3d6 damage), but no more than a conventional boiler in perimeter (Large Burst Template). They use just half ton of fuel (oil) per Power Level per day.

Turbine, Gas: Utilizes hot, expanding gases from combustion instead of steam. The weight is 1 ton per Power Level, but Power Level is restricted to no higher than the Reliability die. The maximum power output is the prototype's Reliability. These devices can explode, and do so with more force (3d6 damage), but no more than a conventional boiler in perimeter (Large Burst Template). They use just a quarter ton of fuel (gasoline only) per Power Level per day.

Water Breather: A small mask for breathing underwater as if the user is on land. It works for its Reliability in hours, but must succeed on a check for every hour of use. Weighs 1 pound.

Welding Device: Portable tool for fastening steel parts together without rivets, improving the structure's integrity to 1 + (0.1x Reliability die, rounding up) times its original Armor. The user must succeed a Reliability check or it causes a wound to the object or vehicle. Weighs 5 pounds.

IMPROVISED WEAPONS

Adventurers often find themselves fighting with objects never intended for use as weapons. Whether lost in the vast steppes of the Martian wilderness, mucking through the swamps of Venus or dancing in the promenade of an interplanetary ether flyer, a desperate adventurer must frequently adapt what is on hand.

All improvised weapons levy a –1 Fighting or Throwing penalty. If the object already appears on the weapon list on page 18 (such as a torch or lamp oil), use the listed stats. Otherwise, use the generic entry for a small, medium, or large improvised weapon, as appropriate.

TRANSPORTATION

Explorers don't get much recognition sitting in the drawing room or reporting from a library, no matter how well presented. Transportation methods, rental or per person costs, and notes on distances traveled are detailed in the Transportation Costs table.

Forced march can double foot speed, and force-marching animals increases speed by 50%, but both require a Vigor roll from all participants. Failing the check causes a level of Fatigue until a full day's rest is had.

INTERPLANETARY TRAVEL SPEEDS

The travel time between worlds depends on the speed of the ether propeller used. Most ships have the Edison Ether Propeller, with a base speed of 2.5 for liners and 2.0 for cargo haulers. The chart below gives the effective distance—in millions of miles, rounded down to the nearest ten thousand to facilitate calculations—between planets prior to navigational adjustments. After the Navigation skill check, divide the distance by the speed to determine the length of travel in days.

INTERPLANETARY NAVIGATION

Unlike sea and land travel, a port with a good view and a telescope lets you see your final destination on an interplanetary trip (unless it is blocked by another celestial body). What you can't see is the perilous wakes and eddies caused by planets orbiting through the ether. This is where a good navigator can ease the passage.

Prior to engaging the ether propellers, the navigator makes a Navigation roll to plot the ship's course (a non-player-controlled interplanetary craft is assumed to have an Extra with Navigation d8). A successful navigation check shortens the distance to 80%, and to 60% on a raise. A result of 1 makes the journey 10% longer!

The farthest a ship can fly away from the sun with a common solar boiler is 300 million miles, or 40 million miles beyond the Belt, before the boiler shuts down due to the absence of a sufficient heat source.

Instruments helpful in astrogation include the orrery (+1 Navigation checks), analytical engine (+1), astrogation computer (+4, but used in place of the orrery and analytical engine), large telescope (+1), and improved telescope (+2, but in place of large telescope). The bonuses stack, therefore a total of +6 is possible for the Navigation check.

INTERPLANETARY TRADE

While explorers do not typically engage in interplanetary commerce, they may need to maintain a cover or subsidize the ship's expenses, and trading is honest work.

Purchase: Cargo has a base cost of £1 per ton of raw materials, £100 per ton of food, and £200 per ton of manufactured goods. Mercury and Venus each provide 4d20 tons per day in raw materials. Mars provides 3d10 tons of raw materials and 2d10 tons of manufactured goods each day. Earth provides 4d10 tons of manufactured goods and 4d20 tons of food every 24 hours. Decide how much is available each day, and how much your heroes wish to purchase. Make a cooperative Streetwise roll once per day. A success enables acquisition of the cargo at base price. Each raise reduces the cost by 25%, to a minimum of 25% of original price.

Sale: Finding a buyer requires a cooperative Streetwise roll. On a success, the sale is made at the cargo's base cost. Each raise increases the sale price by 25%, up to 75% above the original cost. You cannot resell cargo purchased on the same planet. You are able to push through 2d6+3 tons of cargo per day, plus 2d6 tons more per 10% discount offered.

Resale: Secondhand goods are usually sold for 10% of the retail price. A successful Streetwise roll is required to find a buyer (a success finds one, each raise provides another alternate) and a Persuasion roll to sell the item. A raise nets 10% of retail cost, with an additional 10% for each raise, up to a maximum of 50% of base cost.

SPACE HAZARDS

Ether Wakes: The residual spatial ripples that planets and large celestial bodies leave as they travel through the ether are quite dangerous. They can damage a ship when crossed. Ether flyers meet one such wake for each planet they arrive at or depart from. It takes a Piloting skill check, cooperative with Knowledge (Navigation), to avert harm. A success prevents damage, while a raise cuts 10% off travel time by riding the wave. A failure incurs 3d6 damage to the hull. A critical failure causes the propeller to break down, requiring a successful Repair roll and 2d6 hours' time.

Meteor Storms: These seemingly random showers of celestial debris cause impacts which can cripple a ship. Draw a card for every ten days of travel through the ether. On a

INTERPLANETARY TRAVEL SPEEDS

Origin	Mercury	Venus	Earth	Luna	Mars	Belt	Jupiter	Saturn	Uranus	Neptune
Mercury	0	100	130	130	180	290	520	940	1840	2840
Venus	100	0	160	160	210	320	550	970	1870	2870
Earth	130	160	0	0.3	230	330	570	990	1890	2890
Luna	130	160	0.3	0	230	330	570	990	1890	2890
Mars	180	210	230	230	0	400	620	1040	1940	2940
Belt	290	320	330	330	400	0	740	1160	2060	3060
Jupiter	520	550	570	570	620	740	0	1380	2280	3280
Saturn	940	970	990	990	1040	1160	1380	0	2700	3500
Uranus	1840	1870	1890	1890	1940	2060	2280	2700	0	4600
Neptune	2840	2870	2890	2890	2940	3060	3280	3500	4600	0

face card, the ship encounters a meteor storm lasting 1d6 rounds. Unless someone in a lookout position succeeds on a Notice roll (–2) to see the meteors coming, the very first sign of danger is a dire pounding on the hull (3d6 damage). Each round the storm lasts, the ship takes a hit for 3d6 damage unless the pilot succeeds on a Piloting roll.

GRAVITY AND ETHER

Not all worlds have gravity similar to Earth. Mars's gravitational pull is about 90% of Earth's, Mercury's is 40%, and Luna's is a mere 16%. Asteroids are found to have miniscule gravity. In practical terms, this increases the carrying capacity of a character from Earth on these worlds without penalty (albeit the GM may suspend this for awkward or bulky items).

Earthmen (and Venusians, since Venus has roughly the same gravity as Earth) on Mars increase their load limit by 10 lbs., receive +1 on Strength checks, +1 Strength-based damage, +1" to vertical leaps, and +2" to horizontal jumps. Martians on Earth experience the opposite effect (–10 lbs. load, –1 Strength checks, –1 to Strength-based damage, –1" from vertical leaps and –2" from horizontal jumps).

On Mercury, these chaps double their load limit, double the Strength die for melee damage, double all Strength check results, gain +2" on vertical leaps, and +4" on long jumps. Coordinated maneuvering, on the other hand, is more difficult due to the body being unaccustomed to decreased resistance. All Agility checks are made at –2 for the first week on Mercury. Martians receive the same benefits.

On Luna, Earthmen and Venusians triple their load limits, Strength die on melee damage, and Strength checks, plus they add +4" to vertical leaps and +8" to broad jumps. Agility checks are made at –4 for the first week on Luna, –2 for the second week, and return to normal the third week. Martians receive the same benefits. Lunarrians do not travel to other worlds, as they would have a hard time even breathing without special aid.

Derelict ships without power, asteroids, and other objects adrift in the ether have very little gravity. Such environments let a person carry five times his normal load limit—very clumsily. All Agility checks are made at –4. Strength damage is unmodified, but all Strength checks are increased to five times the result rolled. Leaping is not advised, as there is not enough gravity to keep a person from spinning off into the ether.

Exposure to the ether is not automatically harmful. Treat the character as if holding breath to avoid drowning, and refer to the Drowning rules in *Savage Worlds*. Moving in the ether is like swimming in calm water and uses the Swimming skill. With access to sufficient oxygen (perhaps supplied by some enterprising inventor's useful device) and food, a castaway might survive in the vast reaches of the ether for a long time. Tall tales exist of survivors found drifting weeks, or even years, after their craft were destroyed, but such tales have not been confirmed by any reliable source.

AERIAL SHIP RULES

Aerial ships are one of the critical discoveries of the era. Nations of Earth recognize the prominence they can project through these ships, and the rapid speed at which it is projected. These vehicles play a pivotal role in the solar system, and will no doubt continue to do so for the foreseeable future.

WIND DIRECTION

For sail-powered aerial ships (i.e., kites), it is important to know which way the wind's blowing. To determine wind direction, roll a d12 and use 12 as the ship's heading on an imaginary clock face. The number rolled is the direction of incoming wind, so on a 1, 2, 10, 11, or 12, the ship is meeting headwind; otherwise, the ship is moving with tailwind. Draw a card for every hour of travel. The wind shifts on a 2, 3 or 4; roll d12 again. A roll of 6 indicates a gale charging from behind. Once wind direction has been determined for combat, it remains so until a Joker is drawn.

NAVIGATING THE SKIES

Traversing the skies is harder than it looks. A clear day allows one to follow distinct landmarks, such as rivers, canals, or roads, but in less-than-perfect conditions a navigator and pilot with more than a little skill are needed. Each day, a ship covers a distance matching its Cruising Range in miles (+50% for screw galleys that are pushing, or steam ships overloading the boilers; 200 miles for kites into headwind and 400 miles with tailwind). Presumably the craft is either landed or anchored during the night. Provided fair weather, a successful Navigation roll means the ship maintains course. It travels the full range with a successful Piloting roll (cooperative with your crew's Boating skill), adding an additional 50 miles on a raise. The ship covers half the range on a failure, and one-quarter on snake eyes.

Mercury is the easiest planet on which to operate flights but also the most limited. The planet features a twilight zone merely thirty to fifty miles wide, but 10,000 miles long and encircling the world. Weather in the zone is a constant breeze from above that alternatively heats and cools in a cycle. While it's storm-free, only special furnishings can permit flight into Mercury's dark zones.

Venus, on the other hand, is lashed by almost constant storms. (Draw a card. The storm is mild on a number, severe on a face card, and just fog on an Ace or Joker.) Limited visibility and vast swamps greatly hamper navigation by landmarks. Add to that the atmosphere's detrimental effect on liftwood, from the same elements that bedevil compasses and render them useless, and aerial travel is confined to zeppelins, and even then usually just in the mountains. Apply the Piloting and Trimsmen rules for navigating on Earth with the following changes: Navigating a course is possible only at Very High altitude and very challenging

without an inertial compass (–2; –4 if relying solely on inertial compass at lower altitude; –6 without the compass and at lower altitude).

Earth has extremely variable weather. Draw a card for each day of flight. The ship runs into a storm on a face draw; the storm is mild if Jack or Queen (–2 Piloting, Trimsman, and Navigation), and severe for King (–4 Piloting, Trimsman, and Navigation). Flying at night incurs the penalty for darkness. The trimsman must succeed on a Knowledge (Trimsman) roll to keep the craft airborne or risk crashing it. Success on a second roll with an additional –2 penalty allows the trimsman to recover, but failure crashes the ship. To make headway, the pilot must succeed on a Piloting roll (with crew making their own Boating rolls to complement the pilot's). The ship covers just half the range on a failure, and one-quarter on snake eyes. The navigator must succeed on a Navigation roll or the ship flies in a random direction for the distance traveled.

On Mars, storms are random encounters and very rare. They affect flights identically to an Earth storm. Draw a card; on a Joker a storm blows in.

Headwind reduces a kite's speed by half. The kite is tacking back and forth against it, provided the wind is not strong. Screw- and boiler-powered vessels are unaffected by normal winds, but like all flying ships must land or flee when encountering a powerful gale.

CRASH LANDING

Sometimes it becomes necessary to bring a crippled airship to earth, a difficult and extremely perilous proposition. Success on this maneuver depends upon the helmsman's Piloting roll or the trimsman's Knowledge (Trimsman) roll. Either may assist the other in a cooperative roll, but only one can make the fateful primary roll.

If the ship weighs more than 500 tons, the roll is made at –2; if over 800 tons, –4. On snake eyes, the damage suffered by the ship and all Wild Cards onboard is 5d6. On an adjusted roll of 1 or less, the ship and Wild Cards suffer 4d6 damage. If the roll is merely failed, the ship and Wild Cards suffer 3d6 damage. Success limits the damage to 2d6, and just 1d6 with a raise.

In all cases, most crew and passengers onboard are either killed or badly wounded. Every Extra onboard an airship when it crash-lands is assumed to suffer a single Wound, requiring a Vigor roll to determine his or her fate (see *Savage Worlds*).

Cargo suffers catastrophic damage, with most buried deep under the (typically fiery) surface of the wreck. Volatile cargo might very well explode (at the GM's discretion), dealing yet more wounds to the wreck. Other than what the characters are carrying, most equipment is lost or destroyed. A successful Repair roll salvages a specific, stated item weighing 10 pounds or less, and a raise uncovers two of them.

A ship that has crash landed might be salvaged or even made whole again. For each wound suffered by the ship in the crash landing, apply a –1 penalty to the Repair roll to salvage it. Each roll takes 4d6 days' time. If a ship suffers 4 or more wounds during a crash landing, it cannot be salvaged.

OVERLOADING STEAM ENGINES

An engineer may overload a steam engine to obtain 50% additional speed, but must succeed on a Repair roll every hour to prevent the boiler from breaking down. A malfunctioning boiler must be shut down (a success on the boiler crew's Boating roll) or it explodes, causing a wound to the craft and 4d6 damage to each crewman manning the boiler.

A makeshift sail can produce only a modicum of speed—half that of a normal kite, at best.

REPAIRS

Repairing ships damaged by adverse weather or enemy fire requires 1d4 days per wound, plus a dock (found in most major cities) for critical results. Repairing each wound or critical result incurs £10 multiplied by Toughness (including Armor) in expense. Ships receiving four wounds are not reparable, but can be salvaged for 10% of their purchase price, providing 1 ton of cargo per £100 of salvage value recovered.

FIGHTING BELOWDECKS

The space beneath the railed deck of a typical ship (including ether flyers) is crowded at best, what with the bunks, compartments, low ceilings, and every inch of space packed with cargo. Heroes using weapons longer than a short sword suffer –2 Fighting belowdecks.

HIRING CREW

This is a popular activity in all major cities on Mars and Earth. A prospective employer makes a Streetwise roll (others may aid) and spends 2d6 shillings each week to find a number of willing crewmembers equaling the Streetwise roll. One in every five crewmembers hired this way will be a specialist, such as a surgeon, captain, navigator, pilot, engineer, trimsman, or soldier. However, the specialty is random unless the employer spends £1 for advertisements in the local paper (or the equivalent).

CREW UPKEEP

Should the heroes secure their own aerial ship, they need to retain a good crew to keep it flying. The crew must be fed, paid, and once in a while given a chance to blow off steam.

Crew: Every ship needs officers—a captain, a helmsman (with the Piloting skill), and a trimsman (who has Knowledge: Trimsman). A ship needs a number of engineers (Repair and Knowledge: Mechanics) equal to half of the

ship boiler's Power Level (rounded down), or one for every crankshaft post on a screw galley, or one with Climbing skill for every 100 tons of a kite's weight (rounded up). Additionally, a ship requires deck crew equal to one person per 100 tons of the ship's weight (rounded up), requisite gunners to man the weapons, and an additional officer for every 15 crewmembers. The first extra officer is always a signalman versed in semaphore.

Provisions: Necessities are purchased as units for easier recordkeeping. Each unit represents all the food and water necessary to sustain a crewman or passenger for one day. Each unit of provisions costs 1s and weighs 2 pounds. A ton of cargo space can store 1,000 units.

In the absence of adequate provisions, crewmembers begin suffering Fatigue levels. Make a group Vigor roll for each day of half rations (–2 if less than half). The crew suffers a Fatigue level for each failure. When they become Incapacitated, 10% of the crew perish each day from starvation. Most crews mutiny before getting to this point.

Pay: Standard wage is £1 per month (plus room and provisions) for a member of the regular crew. Officers and specialists demand £2 per month, minimum. All prizes captured, whether salvaged or as spoils of battle, are divided into shares with three shares going to the ship's owner(s), the officers and specialists getting two shares, and the remaining crewmen getting a share each.

City Leave: This is a chance to the crew to relax, unwind, and release the pressures of working constantly in the air. Player characters on leave must succeed on a Smarts roll every night or indulge in alcohol and become inebriated (Agility, Smarts, and related skills are all at –1, but Toughness is +1) and squander 1d6 shillings. Every full week on leave gives player characters a +1 to Streetwise (maximum +2) in that location until departure.

Cabin fever occurs when anyone spends more than 30 days aboard the ship without leave. The affected crew become Fatigued. After gaining a level of Fatigue in this fashion, the ship must make its way toward a city for leave or risk mutiny. A single night out usually resets the clock on the "30 Day Rule." Each week spent on leave negates one Fatigue level caused by cabin fever. Most interplanetary crews suffer this affliction on longer flights, and thus are always given leave upon arrival.

SHIP COMBAT

This section illustrates ship-to-ship aerial battles in *Space 1889: Red Sands*, with new details and rules added.

CONTACT

Ships with legitimate cargos steer clear of anyone they see. Escorts interpose themselves between any ship spotted and their charge, attempting to ascertain the approaching



party's intentions. Therefore, those with malicious intent normally set up ambushes either at a concealable position on land (in a valley or crevice, for instance), or drift just within the edge of a cloud in the sky, invisible and waiting for prey.

In a pursuit, the pilots of all ships involved make opposed Piloting rolls aided by their respective crews' Boating skill rolls, plus the margin in acceleration between the ships. (Because kites have a varying acceleration, determine the wind direction each attempt.) Each opposed roll equates to a 4-hour interval. If the pursuer wins with a raise, it puts both ships in close quarters; success gives the pursuer +2 on the next roll. The quarry gains +2 on the next roll on a success, and makes good the escape on a raise.

CLOSE QUARTERS

Once the ships are in close quarters, apply the standard chase and combat rules. The Range Increment is 50 and each turn is one minute long. Roll a d6 to determine each ship's present altitude: 1 = Landed or Crashed, 2 = Very Low, 3 = Low, 4 = Medium, 5 = High, 6 = Very High.

Ships may not fire on other ships if the difference in altitude level below the firing ship is greater than the quantity of Range Increments between the ships. Ships armed with drogue torpedoes or spike droppers can fire these weapons on those below them. Depending on the battery's orientation, rockets can be fired above or below ship.

All weapons fire once per turn with their normal RoF. All shipboard weapons have a restricted arc of fire, which must be taken into account—forward-firing weapons when pursuing and approaching, rear-firing when chased, side-firing when the pilot performs a turning maneuver. The fact that all weapons usually fire aimed attacks negates the penalty for an unstable platform. RoF can be doubled if not aimed but will, of course, incur the unstable platform penalty of -2. Relative speeds affect the chances of hitting as described in *Savage Worlds*.

AERIAL MANEUVERS

The captain may order one or more Maneuvers or Stunts each turn, depending on the Range Increments to the target.

Broadside: With a successful Piloting roll, the pilot can bring one side of the ship to fire on the enemy.

Change Altitude: The trimsmen is called upon to change the current altitude while the Pilot attempts to maintain the current distance. Success on a Knowledge (Trimsmen) roll success enables a one-level altitude change, and two levels of altitude may be changed on a raise. (The altitude limit for the ship still applies.)

Close: A successful Piloting roll brings the ship one increment closer, and two on a raise. This is an opposed roll when the target is fleeing. Crews of both ships can make a Boating roll to aid. A Change Altitude order may be

issued in conjunction and achieved if the trimsmen makes a successful Knowledge (Trimsmen) roll (only a one-level adjustment is possible).

Flee: A successful Piloting roll moves the ship one increment farther away, and two on a raise. This is an opposed roll when the target is attempting to close. Crews of both ships can make a Boating roll to aid. A Change Altitude order may be issued in conjunction and achieved if the trimsmen makes a successful Knowledge (Trimsmen) roll (only a one-level adjustment is possible).

Push: This maneuver is possible only with a screw galley or boiler-powered ship. With a screw galley, the crew must make a group Vigor roll to boost its speed by +1 on a success (+2 on a raise), but suffers 1 level of Fatigue on snake eyes. For a boiler-powered ship, the crew makes a group Boating roll to increase the ship's speed by the same bonuses, with the steam engine suffering a blowout to drop the speed by -1 on a botch. For either type of ship, success adds +1 to a pilot's next roll to perform a Close or Flee maneuver, and a raise gains an extra increment of distance on that maneuver.

Seek Cover: For battles in the mountains or near clouds (GM's discretion), the pilot with the trimsmen's aid can try to use them for concealment. If they both succeed, or one scores a raise while the other fails, the ship obtains light concealment (-1 to enemy attacks). With one success and one raise, the ship receives medium concealment (-2), and on a raise by both, the ship is almost completely obscured (-4). The ship loses one level of concealment for each turn this order is not maintained (re-roll the skill checks), and loses it entirely against other ships within the same increment. Should both pilot and trimsmen both fail their rolls, the ship spins out of control.

AERIAL STUNTS

These actions can only be attempted within one Range Increment of the target.

Boarding: To board another ship, the boarder must first maneuver up close with a successful Parallel stunt (opposed Piloting roll). The boarder's crew makes a group Throwing roll to establish grappling lines, opposed by a group Strength roll from the enemy crew, as they work furiously to sever the link. Success means the enemy ship has been grappled. A grappled ship no longer moves or suffers trim loss, unless both ships suffer the same loss or one ship drops two levels of altitude due to damage. In that case, the ship's weight breaks the grappling lines as it plummets.

Only marines, deck crew, and petty officers are available to perform this action. The remainder of the crew, the pilot, and the trimsmen are too busy firing weapons and guiding the ship.

High Martians simply fly across open space to board an enemy ship.

Ram: This requires an opposed Piloting roll. The ships must be within one height-level increment. If successful, the attacker inflicts 1d6 damage per 5 full inches of relative speed, but takes the same damage unless outfitted with a battering ram (reducing the damage by half, with AP equal to the attacking ship's Armor value).

SHIP DAMAGE RESULTS

Out of Control: When a ship suffers damage matching or exceeding its Toughness, the pilot and trimsmen must both make their respective skill rolls. If the pilot fails, treat any Roll Over or Flip results as a Rolling Deck instead, which forces all deck crew and gunners not in turrets to make an Agility roll or fall overboard (likely to their deaths). Spins, Skids and Slips are treated normally. If the trimsmen fails, the ship drops one altitude level and he must attempt to recover trim with another roll. The ship descends another level on a failure—the trimsmen can keep rolling until he is successful, or the ship crashes.

CRITICAL HITS

Damage against flying ships has the normal effects, but a few consequences have been added for Critical Hits.

Engine: A struck mast reduces a kite's Acceleration by 1 and Top Speed by 2. A hit to the air screw or driving chains cuts the vehicle's Acceleration by 1 and Top Speed by 2, but is repairable by the ship's crew with Repair roll (–2) on the next turn. Success reduces the Top Speed penalty by 1. A

raise reduces the penalty by 2 and completely restores the acceleration. The repair crew is too occupied to change the ship's speed.

Locomotion: The lifting panels are jammed, so the ship cannot change altitude voluntarily until they are freed, and the problem incurs a –2 Piloting penalty until they are. To free the lifting panels takes a Repair roll at –2 (or Boating roll at –4 from deck crew or an officer) to rectify.

Controls: A stuck rudder restricts the pilot's ability to move the ship either straight or turn to only one side (Roll a d6; 1-3 left, 4-6 right) until cleared, and the problem incurs a –2 Piloting penalty in the meantime. Unsticking the rudder takes a Repair roll at –2 (or Boating roll at –4 from deck crew or an officer) to rectify.

Chassis: This is a hull hit. Roll a d6, with a 6 indicating a fire has started as well. Roll 1d6 for each fire still burning at the beginning of a round: 1 or less = Fire burns out on its own; 2–3 = Fire continues to burn but no significant damage or spread; 4–5 = Fire causes one wound and continues to burn; 6+ = Blaze spreads and starts two more fires. Kites incur +1 on this roll, while steel ships receive –1.

Fighting a fire takes a number of men equaling at least one-half the ship's Toughness or six, whichever is less. Each team of six may fight one fire. While the deck crew can fight a fire in the first round, all others take one round to assemble. Putting out a fire requires a successful group Boating roll at –2.

Crew: Inflicts 2d6 crew casualties randomly among the active deck crew and gunners first. They may roll to recover after the battle as normal. If doubles are rolled, a random player character is hit too, taking damage from the weapon separately but receiving the ship's Toughness as Armor if not on deck.

Weapon: One random weapon is destroyed. The crew manning it also takes the full blunt of the blast, but less the ship's Toughness for a weapon in a turret or belowdecks.

Wrecked: The hit ripped the liftwood panels away and the ship is about to crash. A trimsmen can make a heroic attempt to control the plunge with a Knowledge (Trimsmen) roll at –4. Success means half of the remaining crew is killed and player characters suffer half damage. Otherwise, all characters on board take 4d6 damage from the crash and all but 10% of the remaining crew are killed.

CONSTRUCTION OF FLYERS

Constructing a flyer is a matter of personal choice and finances. The process (or customization) entails the following considerations: Hull Size (including type of lift and optional ram), Propulsion, Fuel Storage, Armor, Armament, Exotic Weaponry, Crew, and Cargo, with ether flyers adding or substituting ether propeller and solar boiler.

Hull Size: Choose a size from 1 to 20. That number multiplied by 100 is the amount of lift in tons. Ships under 100 tons (Hull Size 1) tend to be personal vehicles and are

Climb Limit

The altitude a flyer can attain is limited by the percentage of a ship's total tonnage that is in use, as shown on the following table.

Tonnage Used	Altitude limit
80% or less	Very High
81%–100%	High
101%–120%	Medium
121%–140%	Low
141%–160%	Very Low
over 160%	Cannot lift off

bought starting in 10 ton increments. Hull Size can port tonnages up to 60% more than itself but weighed capacity will reduce climb levels attainable. If fitting the hull with a battering ram, the ram weighs 10% of the Hull Size. Wooden hulls have a base cost of £50 per ton in Martian yards, £80 per ton in British yards, and Toughness 14 (4). British yards can make steel hulls, which have Toughness 16 (4), for £100 per ton. Rams cost £10 per hull ton at all yards. Ships over 2,000 tons have not yet been built.

Propulsion: Steam-powered vessels use conventional boilers with air-screw propeller, taking up 10 tons of space per Power Level (available in 0.25, 0.5, then ranging from 1 to 12). Forced draught boilers are also available at less space (5 tons per size) but twice the cost. To generate Cruising Speed, multiply the Power Level by 6, then divide by Hull Size (minimum tonnage of 100), and round down; if the result is greater than 6, take half of the value exceeding six, drop all fractions and add 6, with a maximum of 12. Cruising Speed times 2 is the vehicle's Top Speed, and the Travel Speed is Cruising Speed times 50. Acceleration is one-third of the Top Speed (rounded down). The cost is £500 times the Power Level for conventional boilers, and twice that for forced draught boilers.

Screw galleys require a number of turn-cranks. Each turn-crank position (for the crewman turning the crankshaft much like a rower on old galleys, plus the actual mechanisms) occupies 10 tons of space. You need 10% of the ship's tonnage in turn-cranks to generate a Cruising Speed 1, 20% for 2, 30% for 3, and 40% for 4. No screw galley machinery can move a ship over Hull Size 2 faster than Cruising Speed 4. Hull Size 1 can reach Cruising Speed 5 with six turn-cranks and Cruising Speed 6 with eight. Hull Size 2 can reach Cruising Speed 5 with eight turn-cranks. Cost is £100 times the total number of turn-cranks. Top Speed is twice the Cruising Speed. Cruising Range is 50 times the Cruising Speed. Acceleration is one-third of the Top Speed (rounded down).

Kites require 10% of total tonnage for the rigging and topmen's quarters. You need one topman for every 10 tons of rigging (round up), minimum two tons. Cost is £600 times the Hull Size. The Acc/Ts is 2/8 against the wind and 4/14 with the wind, regardless of size. Cruising Range is 200 miles in headwind, and 400 miles with tailwind.

Fuel Storage: Steam ships use fuel to generate power, at one ton of fuel per Power Level of a conventional boiler per day of use, halved for forced draught boilers. Fuel storage determines the amount of days the ship can sail before refueling.

Armor: Some ships fortify their exterior in addition to any Armor value inherent in the structural material. Every point of Armor weighs 5% of the hull tonnage if made of steel (British or Earth yards only), or 10% if protected by double-hulled brick lining (available from Martian yards). Steel costs £10 per ton, while Martian protection costs £50 per ton.

Power Level and Efficiency

Ether propellers and sails are rated by how much power they are able to output (the Power Level) and how efficient that power output is (the Efficiency rating).

A higher Power Level indicates greater output, and likewise a higher Efficiency represents a smaller amount of lost energy during operation. Interstellar Speed, representing the millions of miles per day a ship can travel, is calculated thusly—Power Level times Efficiency, divided by the tonnage of the ship (rounded up).

Armament: Modern European military weapons are normally unavailable to civilians, especially in British shipyards on Mars or any shipyard on Earth. Martian weapons and surplus smoothbores sold in older military stores on Earth can be installed on Mars. You may purchase machine guns as long as they are stored while in port. A flyer can mount one forward mount (RFL), one aft mount (RAL), one left wing mount (FLA) and one right wing mount (FRA). Each of these 180° mounts may be replaced by two 90° mounts, with both having a center arc of fire and each an opposite arc. All additional guns may only fire to right or left as part of a broadside.

Guns may rest protected for no weight increase if firing in a single direction, but at a 10% gun weight increase if firing in more than one arc. These protective mounts may be of an Armor value different from rest of the ship. Machine guns must be able to fire at more than one direction to be given protection. Martian yards cannot fit protections for guns capable firing in more than one direction, ever. All protected weapons cost 5% more per point of protection.

Crew: All officers, crewmen, or gunners' quarters are included in the weight. Marines or passengers take 1 ton of space each. Cargo space is required for units of provisions (converted to two pounds per person per day). Cost is £20 per additional quarters, plus provisions.

Cargo: Any unused space is considered cargo space, free of cost.

SPECIAL WEAPONS (VEHICULAR OR IMMOBILE)

Weapon	Range	Dam	Cost	Wt	RoF	Notes
Cannon, Heavy	150/300/600	4d12	£6000	600	1	AP 24*, LBT, 1 action reload (HC), crew 3
Cannon, Medium	120/240/480	4d8	£1000	100	1	AP 14*, MBT (MC), crew 2
Cannon, Light	72/144/288	3d8	£400	40	1	AP 10*, SBT (LC), crew 2
Cannon, Rotating	48/96/192	2d12	£200	10	3	AP 6*, (RC), crew 1
Machinegun	24/48/96	2d8	£70	5	3	AP 2, (MG), crew 1

Martian Weapon	Range	Dam	Cost	Wt	RoF	Notes
Mars, Heavy	36/72/144	3d10	£1000	40	1	AP 5*, MBT, crew 2
Mars, Light	24/48/96	2d10	£400	20	1	AP 4*, SBT, crew 2
Martian Lob	-/-/144	5d8	£2000	200	1	AP 6*, MBT, 1 action reload, crew 3
Rod Gun	48/96/192	2d10	£800	30	1	AP 7*, SBT, 1 action reload, crew 2
Rogue Gun	48/96/192	3d12	£2000	60	1	AP 6*, MBT, 1 action reload, crew 3
Sweeper	12/24/48	1-3d6	£200	10	1	SBT(3d6)/MBT(2d6)/LBT(1d6), crew 1

Other Smoothbores	Range	Dam	Cost	Wt	RoF	Notes
9" SB	36/72/144	3d8	£1000	60	1	AP 6*, SBT, crew 2
10" SB	36/72/144	4d8	£2000	80	1	AP 8*, MBT, crew 3, 1 action reload
11" SB	48/96/192	4d10	£3500	150	1	AP 10*, MBT, crew 3, 1 action reload
15" SB	72/144/288	4d12	£6000	300	1	AP 12*, MBT, crew 4, 2 action reload

AP #* = Heavy Weapon; SB = Smooth Bore; LBT = Large Burst Template; MBT = Medium Burst Template; SBT = Small Burst Template; ammunition storage should be figured by weapon and the amount of reloads wished. P for Damage = Personnel only.

Exotic Weaponry: Single-use exotic weaponry is seldom found on civilian ships. Martians (and black marketers) sell them to anyone with the money. There is one internal and one external space for exotic weapons for every 100 tons (rounded down) of hull space. Hale rockets, liquid fire racks, bomb racks, and spike droppers each take one external space. Smutts torpedoes and tether bombs take internal space each.

Martian Weapon	Range	Dam	Cost	Wt	RoF	Notes
Drogue Torpedo	below	3d12	£20	10	-	AP 4*, any officer lower/raise/cut
Liquid Fire	below	Fire	£200	20	-	1d6-altitude dif = # of fires started
Power Grapple	24/48/98	-	£200	20	1	Uses 2 crew, 2 turn reload, grapple
Spike Droppers	below	P	£150	5	-	1d6-altitude dif = # of crew hit
Tether Mine	above	4d6	£200	-	-	AP 4*, deck hands raise/lower/cut

European Weapon	Range	Dam	Cost	Wt	RoF	Notes
Bomb Load	below	2d12	£10	5	-	AP 5*, 1d6-altitude = # hits
Bomb Rack	-	-	£50	10	-	1 crew fire, 4 crew reload
Drogue Torpedo	below	3d12	£20	10	-	AP 4*, any officer lower/raise/cut
Hale Rockets	up/down	2d10	£50	5	-	1 crew-fired rack of 6 at a time
Power grapple	24/48/98	-	£200	20	1	Uses 2 crew, 2 turn reload, grapple
Smutts Discharger	-	-	£1000	200	1	3 crew-fired, 2 turn reload, interior
Smutts Improved "	-	-	£1500	100	1	3 crew-fired, 2 turn reload, interior
Smutts Torpedo	6"/turn	4d10	£500	10	-	AP 5*, ram to hit, cause trim loss
Spike Droppers	below	P	£150	5	-	1d6-altitude dif = # of crew hit
Tether Mine	above	3d10	£200	-	-	-

Ether Propeller: A ship designed to travel between worlds must be able to attain Very High altitude in order to activate the propeller. Propellers weigh 0.5 tons per Power Level. There are three existing brands of ether propeller: The *Edison* has Efficiency 25, costs £1000 per Power Level, and is able to accept power supplied by a solar boiler or batteries. The *Armstrong* has a Efficiency 20, costs £500 per Power Level, and is able to accept power supplied by a solar boiler or batteries. The *Zeppelin* also has Efficiency 20 and costs £100 per Power Level, but operates at Power Level 8 maximum even if a solar boiler could supply more.

Solar Boilers: The final consideration for an ether ship is the solar boiler. It costs £250 times the Power Level, and weighs one ton per Power Level. Any amount of Power Level may be purchased for it.

EXTRAS

The following are some of the commonly expected additions for an aerial vessel, as well as other, non-essential features which are nonetheless quite useful.

Armory: A well-armed crew is a confident crew. Moreover, they are poised to blast enemy boarders to pieces in close combat. The typical armory fills 1 ton of space and costs a mere £5 to install. However, the weapons must be purchased separately!

Brig: A miniature prison cell capable of detaining up to two inmates, costing £20 and taking 1 ton of space. Sturdy doors (Toughness 12) and walls (Toughness 15) minimize breakouts.

Chart Room: A small area where the Navigator can consult a library of charts and plot courses undisturbed. It requires 1 ton of space, costs £50, and adds +1 to Navigation rolls made with the benefit of its resources.

Conservatory: A lounge for relaxation, recreation, and light entertainment mitigates the onset of cabin fever, essentially doubling the 30-Day Rule. It weighs 2 tons, costs £200, and can accommodate ten persons. Every additional ten persons require 1 more ton of space and £100 in furnishings.

Galley: Essential for large ships that undertake long journeys, this area provides crew and passengers a place to take their meals together. It requires 4 tons and costs £10.

Laboratory: A facility like this enables research to continue even on long voyages. The minimum size is 1 ton and is free for an inventor. Each additional laboratory space costs £100 per ton.

Lifeboat: A small craft, constructed of lift-wood, which holds up to nine passengers and is kept onboard the main craft in case the crew and passengers must abandon ship. A lifeboat uses the stats for a steam launch (see page 28), except it

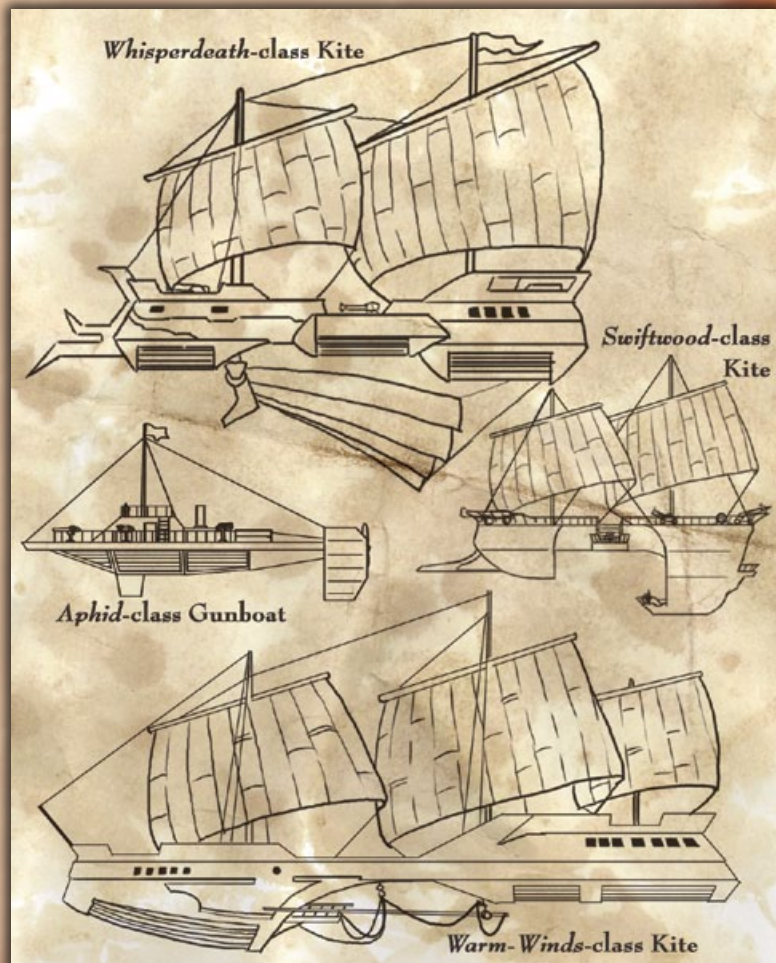
has no steam engine and cannot propel itself; it can only descend 1 Height Level per 3 rounds of controlled descent. Lifeboats weigh 2 tons and cost £300.

Medical Station: A fully equipped medical bay to treat wounds in emergency situations, a medical station grants a +2 to Knowledge (Medicine) and Healing skill checks. It costs £150 and takes up 1 ton of space for every two patients that may be treated at a time. Any roll of 1 on a Healing skill die exhausts the supplies, requiring a restock at £5 per patient allowance (i.e., £10 minimum).

Quarters, Crew: Crew quarters tend to be spartan, but are a step up from being told to string your hammock in the cargo hold. For each 1 ton of space allotted, two crewmen may be quartered, which costs £5.

Quarters, Passenger: Passengers cannot be crammed into tiny berths except on the most uncouth of vessels. Usually 1 ton of space is allotted per intended passenger, costing £10.

Quarters, Gunners/Marines/Officer: Similar to passengers, it takes 1 ton of space to house one Gunner, Marine, or Officer. The cost is £5.



THE RED CAPTAINS

In the latter part of the 1870s, a number of humans were entranced by Mars and decided to put down roots. Many of these were ex-officers in various services, prime among them the Royal Navy. They combined martial and aeronautical skills with a zeal for adventure, and soon were an unofficial brotherhood of human captains plying the skies in Martian ships.

Martians dubbed them “Red Captains,” because of how the golden-skinned locals regarded the humans’ ruddy complexions. Begrudgingly accepted as equals by the Cloud Captains of the Shistomik Mountains (who are known as pirates to everyone else), they are hated by the High Martians of the Astusapes.

The Red Captains do little to disabuse others of the perception that they are ultimately loyal to the crown, though they are ostensibly independent. Historically speaking, they are roughly analogous to the Elizabethan Sea Hawks.

Prizes refer to the number of ships captured (not destroyed) by each Captain, while tonnage refers to the total weight of ships, cargo, and booty captured. Members of the Explorer’s Society have been known to place friendly wagers on which way a Captain’s fortunes will go. As of January 1, 1889, these were the five highest-scoring Red Captains.

THE LEGENDARY FIVE

Frederick Gustavus Burnaby: Steam Ram *Penelope*; 27 prizes; 43,200 tons.

Alonzo Quinton Freemerchant: Steam Gunboat *Baron Lortmore*; 21 prizes; 34,900 tons.

Frederick Armand LeBeg: Screw Ram *Gloire*; 17 prizes; 21,400 tons.

Michael Paget-Smith: Gun Kite *Lismore*; 15 prizes; 16,000 tons.

Arturo Diego della Mora: Screw Ram *Gato*; 17 prizes; 12,200 tons.

Quarters, Captain: A captain’s stateroom is his sanctuary, where he can consider the vessel’s next move away from the mercurial tides of his crew’s favor. While the crew dines together in the galley, the captain and his officers dine here. This cabin requires 2 tons of space and costs £40.

Reinforced Hatches: Internal security is as important to some captains as the ability to repel boarders. A ship with reinforced hatches has high-quality doors installed

throughout (Toughness 10), and each has a high-quality lock (–2 to Lockpicking attempts). This feature adds no tonnage but costs £20.

THE FLYER’S LIFE

Aerial travel is perhaps the most prominent difference between the world of Space 1889 and the real-world Victorian Era (except, of course, for the existence of the ether!). Since flight is so widespread a means of travel, you can be sure your brave Explorers will spend plenty of time on board one type of aerial craft or another. Sometimes he’ll be hanging on for dear life!

Considering the many hazards that might be encountered, any hero would be well-advised to avail herself of the Piloting skill. Though only one can take the helm at any one time, steering in shifts is advised. Additionally, if the captain and first mate are injured, your hero can valiantly leap to the crew’s aid! Knowledge of Navigation and the Trimsmen’s art are always useful, as one never knows when one is about to be hopelessly lost.

Storms: Storms are the primary threat to aerial travelers, and the rules for flying through them are covered on page 45. In practice, however, a captain will only need to run this sort of gauntlet when it is unavoidable. Usually aerial flyers take every opportunity to outrun or avoid storms, due to the extreme dangers they pose.

Liftwood flyers are the most susceptible to meteorological disturbances, as turbulence has the distressing tendency to tip them over and cause it lose trim quite quickly. The penalties to a Pilot’s skill roll are not insurmountable, but when the stakes involve the entire craft “capsizing” in midair and plunging to smash upon the rocks, the wiser man avoids the risk altogether.

If it is impossible to avoid or outrun a storm, a captain usually orders his craft grounded so the crew can wait for clear skies. Zeppelins are especially at risk to stormy weather, since they cannot avoid foul weather by landing. They must outrun or avoid storms, or pray their captain is up to the task.

Hostile Encounters: Sky pirates are found wherever aerial flyers ply the skies, which is now most of the inner Solar System. On Mars, High Martian raiders are all too common in areas where open rebellion is the norm, or where the Ground Cleansers hold sway. Enemy sky navies, large flying creatures, or even stranger encounters may be considered all in a day’s work, so be ready, Explorers!

GAZETTEER

This chapter presents information any traveler can glean from commonly available travelogues. The Solar System mostly remains a place of mystery. The Explorer's Society is eager to learn anything new your heroes discover.

ASTEROID BELT

The remains of a planet shattered centuries ago, the Belt is a dangerous place. Chunks of the broken world, dubbed Vulcan by astronomer-historians, drift in a dangerous cluster and are mostly uncharted. Lying about 257 million miles from the sun, they are perilously close to the limit for most solar boilers to operate reliably. Asteroids show cross-sections of the ancient world and are mostly iron, sandstone, or rock. Evidence of long-extinct Vulcan races, structures, and artifacts might still exist on some of the surfaces.

EARTH

Earth is home to adventure and regions yet unknown to any Explorer's footprint. Nations struggling with nationalism and socialism breed intrigue, while the old monarchs try to cling to power at any cost, oblivious to the new age.

Africa, the "Dark Continent," holds vast, unexplored wilds. Apes Hill supposedly hides a secret tunnel to the dark caves beneath Gibraltar. In a location lost to time, King Solomon's Mines are said to lie. Legends tell of a lost Roman city in the eastern mountains. The tale of the Elephant's Graveyard has inspired many an ivory hunter. The ancient city of the dead is said to lie in the vast Sahara.

China, under the failing Xhi Dynasty, is carved into sections mastered by European powers. In the mountains hide forgotten tombs of great kings and emperors from China's long history. In the Himalayas the lost valley of Shangri-La allegedly lies, guarded by the Yeti and powerful mystics.

Southeast Asia is fast falling to the resurgent French, who found colonies to assuage wounded pride. Laos is succumbing to French imperialism and whispers of lost civilizations

hidden deep in the jungles fuel French greed. Next door, under the able guidance of King Chulalongkorn, Siam has modernized her army and is one of the few Asian states with emissaries on Mars.

South America, a constant battleground between Brazil, Argentina, Bolivia, and Peru, is home to the legendary empires of the Incas and Aztecs. Tales of lost tribes and the fabulous City of Gold still draw explorers and con men of all stripes to the deadly rainforests.

JUPITER AND BEYOND

Jupiter, 480 million miles from the sun, is the closest body beyond the 300-million-mile limit of exploration. Who knows what frozen secrets lie beyond?

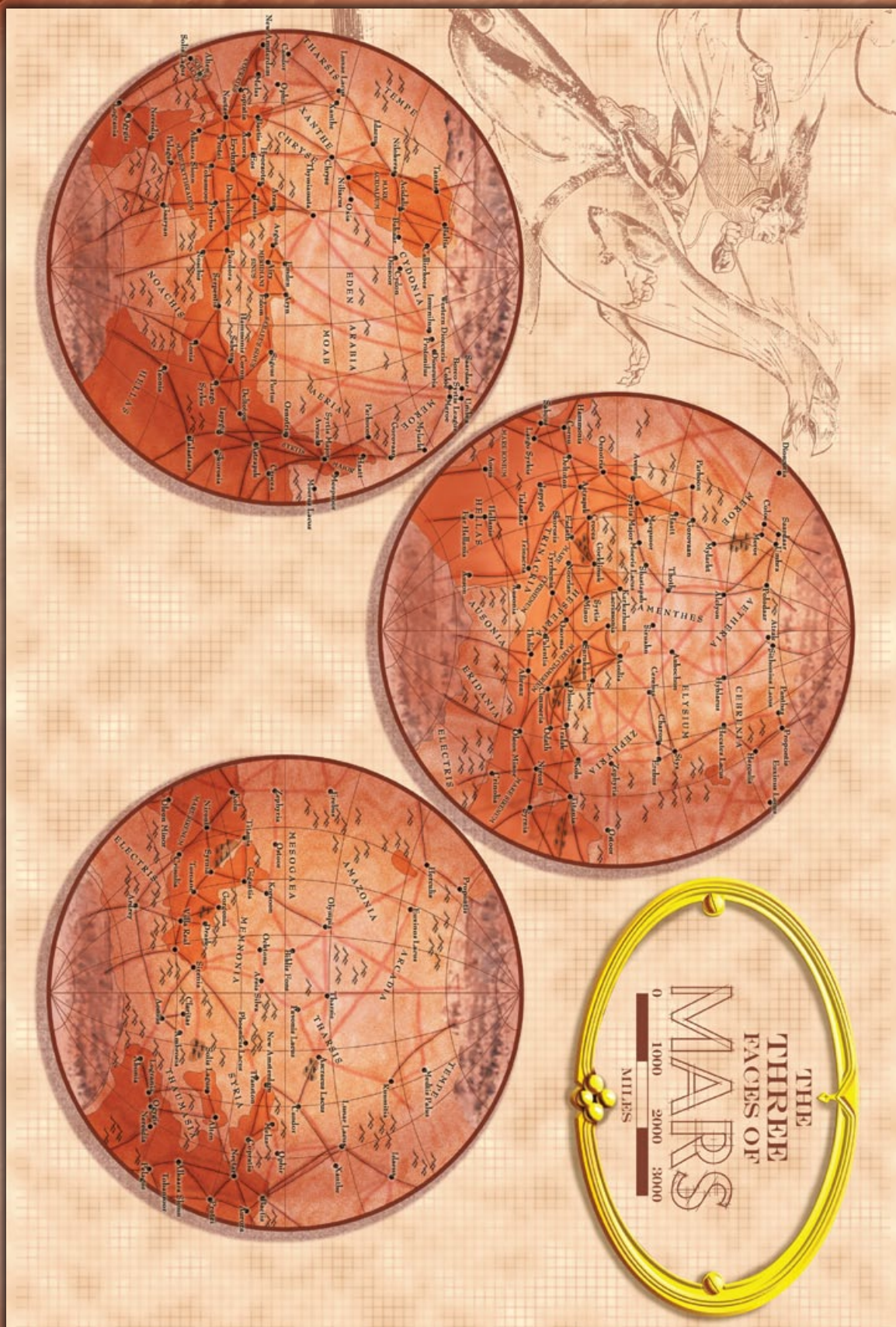
LUNA

Long thought devoid of life, the recent delve into the Great Canyon on the far side of the moon has led to the discovery of an ancient insect civilization and the rumors of another, even more ancient, people. If the Great Canyon hides one entrance to a lost world, might another deep crevasse become the entryway to an even greater discovery?

MARS

The crown of the English Empire and the planet that has excited more Victorians than any other, Mars is a vast world of mystery. Home to a decaying, ancient civilization, treasures both natural and created are scattered in the endless wastelands and cold deserts of Mars. Where is the burial chamber of Seldon the First, greatest known Emperor of Mars? Who were the Martians that created the planetary canal system? Where are the burial ruins of those Martians and their forgotten knowledge?

Earth's influences on Mars are important to note.



BRITISH MARS

The British Empire holds the Crown colony of Syrtis Lapis, composed of Syrtis Major, Haatt, and Avenel. Parhoon and the conquered city-state of Gordvaan continue to be ruled by the Commissioner-Regent and Colony Governor Lord Dundas for the eleven-year-old Parhoon Anwaak-to-be. Moerus Lacus and Meepsoor are treaty dependencies, and the city-state of Shastapsh has had an occupying force governing it since 1887.

The British have a formal defensive agreement with the Boreosyrtis League of Coloe, Meroe, Umbra, and Saardaar to the Northwest, giving them the promise of British protection in exchange for dictating their foreign policy and a monopoly on the Bhutan spice trade.

GERMAN MARS

Germany has a significant presence in the Western Dioscuria highlands north of the League, controlling the city-states of Ismenlus, Protonilus, and Dioscuria. They aim to weaken the Boreosyrtis League to secure part of the Bhutan spice trade and turn the Martians against the British.

BELGIAN MARS

The Belgians, through their mercenary Belgium Legion and a few Regiments of Regulars, have conquered the city states of Po-Poo-Hanna-Kitai (renamed New Amsterdam), Melas, Melas Lacus (renamed Copratia), and the towns and villages between.

OTHER NATIONS

France has great influence in the city-state of Idaeus Fons and the surrounding area. Japan's authority is limited to Euxinus Lacus. Russia has a presence in Hecates Lacus, using political prisoners to build a colony in the city-state and acting as a ploy to get Great Britain to allow them more freedom to deal with the faltering Ottoman Empire on Earth. America has small legations everywhere to aid their merchants and arms dealers. Siam also has a handful of emissaries on Mars, but it is unknown what they can offer the Martians.

NATIVE INFLUENCES

Major native influences on Mars are the Boreosyrtis League, the Oenotrian Empire (actually the Six Cities League, but run by Oenotrian Nobles) of Oenotria, Astrapsk, Crocea, Deltoton, Lapygia, and Skorosia (and the towns between them); and the Tossian Empire of Tossia, Hyoraotes, Thymaamata, Aramis, Dueccalionis, Pandora, Noachis, Pyrrhae, Tobansoor, Erythria, and Protei, which exercises dominance over most surrounding cities.

The Oenotrian Empire's war with England is stalemated, while the Tossian Empire has a defensive alliance with Prince Sitaani of Nectar to defend against Belgian raiders from the Coprates. Furthermore, the High Martian tribes

are disorganized but strongly opposed to Earth's presence, especially since the British crippled the Barrovaar High Martian raiding fleet out of the Astusapes Highlands and pillaged the Kraag Barrovaar.

MERCURY

While Mercury's twilight zone has been flown over, there is no evidence of advanced civilizations on the world. Glow crystals and shell glands are treasures worth finding, and the World Rivers' array of aquatic creatures is interesting to note, but there's little else.

The only permanent station on Mercury is England's Princess Christiana Scientific Station with its faculty of 20 scientists, 50 servants and workers, six government officials, and a score of Royal Marines with three small steam launches. Occasional visitors can be found outfitting for a journey up or downriver, but these are sightseers as much as true explorers.

VENUS

The second most fascinating world in our solar system is Venus. The planet's odd magnetic field confounds the use of normal compasses, and has a degrading effect on liftwood (rendering it useless within about three days). With almost constant storms of varying intensity, Venus is a challenge for any explorer. The world is inhabited by tribes of Lizard Men, both hostile and friendly, who live in large villages of primitive huts. Dinosaurs from out of Earth's past are alive and well—and hungry—on Venus.

Earth's presence on Venus began with the Armstrong Expedition of '73, which was lost with only a single known survivor. The Collingswood Expedition of '74 established a base camp on Mount Maxwell, and was joined in '76 by a Times rescue expedition. The secret of decaying liftwood was revealed by the Heidelberg Expedition of '78—which was also the first expedition to actually return from Venus.

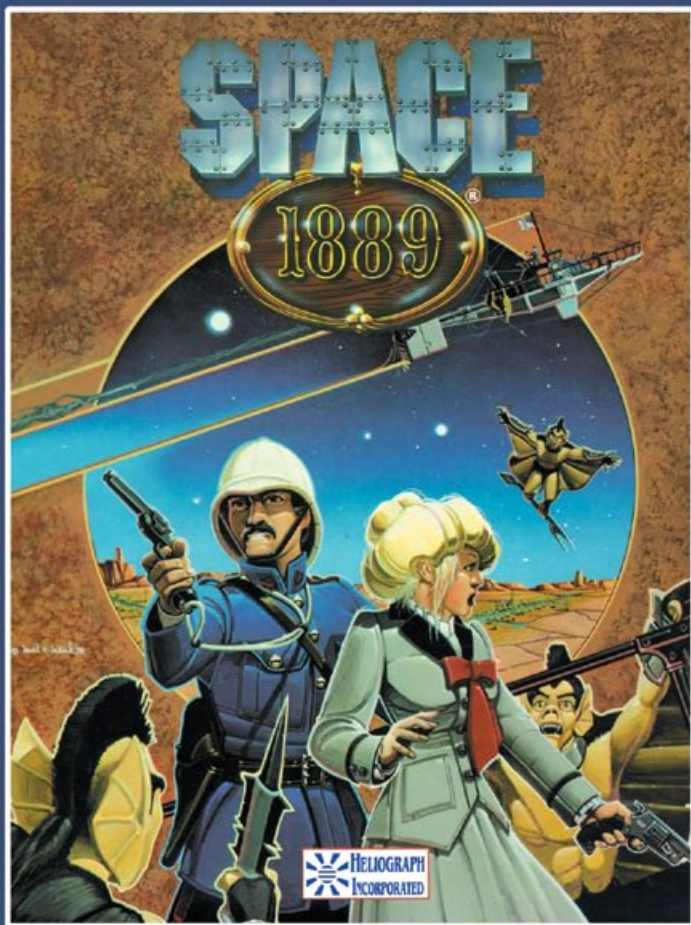
The Russians have fortified trading posts in the Aphrodite Mountain region, and the British have a small settlement on the Victorian Plateau, a military fort, and several outlying plantations and trading posts. The Americans have several trading posts and a near-stranglehold on the shipment of ice. The Italians have a few troops, trading posts, and plantations on the Sappho Plateau, while the Germans are a major presence on the western slopes of the Kaiser Wilhelm Mountains with four large towns and outlying plantations and trading posts. Two regiments of Schutztruppen guard the towns, with Lizard Man auxiliaries as well.

Many mysteries encircle Venus—what became of the Armstrong expedition? What strange creatures exist in the jungles and seas? Did a lizard man civilization more advanced than the primitive farming tribes ever exist?



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