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Once Men

Dr. Michael C. LaBossiere
ontologist@aol.com

Special thanks to: Dave Herman, Bridgette Jeffries, Dan Lane, Ron Lynn, Douglas Moore, Trent Watson

Introduction

This work provides science fiction rules for *Call of Cthulhu* as well as four adventures set in the future. Naturally enough, writing a science fiction supplement for a universe based on H.P. Lovecraft's Cthulhu Mythos proved to be a challenging endeavor.

Lovecraft does include references to the future in some of his stories. Four of these are the "Shadow Out of Time", "Through the Gates of the Silver Key", "Beyond the Wall of Sleep", and "In the Walls of Eryx."

In the "Shadow out of Time", Lovecraft provides a few tantalizing comments about the future of humanity. As the story recounts, Nathaniel Wingate Peaslee's mind is exchanged with that of one of the Great Race of Yith. While his mind is in the distant past, he encounters other human minds from various epochs. Among these are three men from the future. The first is Nevil Kingston-Brown, an "Australian physicist...who will die in 2,518 A.D." The second is Yiang-Li who is "a philosopher from the cruel empire of Tsan-Chan, which is to come in 5,000 A.D." The third is Nug-Soth, "a magician of the dark conquerors of 16,000 A.D."

The story also related that a hardy coleopterous race would be humanity's immediate successor on earth. Unfortunately for that race of beetles, they will eventually be taken over by the minds of the Great Race. The final race on earth, at least according to the story, will be an arachnid one. While no specific dates are provided, it is suggested that these events lie in the far distant future.

In "Through the Gates of the Silver Key", Lovecraft mentions that Pickman Carter "would use strange means in repelling the Mongol hordes from Australia" in 2169. This is the only mention of future events in the story.

In "Beyond the Wall of Sleep", Lovecraft also mentions the cruel empire of Chan-Tsan. In this story, the empire is said to arise 3,000 years after the winter of 1900-1901.

The short story "In the Walls of Eryx", tells of a future in which humanity has landed on Venus in order to mine crystals. Of course, there is the obvious worry that this story does not seem to be part of the Mythos and hence cannot be taken as providing more insight into the future hinted at in the other two stories.

Some have taken the stories "The Crawling Chaos", "Nyarlathotep", and "The Fungi From Yugoth" to suggest that Nyarlathotep will bring about the end of humanity and perhaps the earth. No specific dates are provided for these events, but (given "The Shadow Out of Time") the end of man must take place after 16,000 A.D. and the earth must endure at least through the time of the arachnid race.

This lack of detail about the future was both a boon and a bane when it came to

writing this work. On the negative side, the lack of detail means that the future had to be created almost whole cloth and with few guides as to what Lovecraft might have intended or envisioned. On the positive side, the lack of details allowed a broad field in which to operate. Since I have been consistent with the few available details and the spirit of Lovecraft's stories, it would be difficult for a critic to plausibly say "that is not what Lovecraft would have intended."

In this work, I do not even pretend to try to guess as to what Lovecraft truly had in mind in regards to the future of man. My main goal has been to present a future consistent with Lovecraft's stories and the spirit of his works.

In terms of the game aspects, I elected to stick with two key assumptions of the *Call of Cthulhu* game. First, it is assumed that while man is truly nothing before the ultimate power of the Mythos, humanity is still worth protecting. While mankind cannot be permanently saved, moments of peace and islands of sanity can be carved out of the uncaring and horrific universe.

Second, it is not the "stuff" (weapons, vehicles, and gadgets) that matters most. Rather the story and the role-playing are what matter. The future setting is just that-a setting intended to provide a new twist to the game. Naturally, it is tempting to overload a game set in the future with amazing technology. However, I think that *Alien, Firefly* and even *Star Trek* have shown that science fiction is often at its best when the technology is a backdrop for the characters and plot rather than the star of the show. As in the standard *Call of Cthulhu* game, it is clever thinking, good planning and some luck that will win the day. To change a classic question just a bit: 'what happens when you nuke Cthulhu from orbit?" The answer is, of course, "he reforms, but now he is radioactive. Make a Sanity check."

Game Mechanics

This following provides an extension to the standard *Call of Cthulhu* game rules. As such, while some additions and modification have been made to the rules, the basics remain the same.

Characters

The following section provides a guide to creating characters. It includes new professions and skills for this game setting.

Character Creation

Basic character creation is done as per the standard *Call of Cthulhu* rules. To be specific, a character is rolled using the normal methods and then the player selects an occupation and allocates the relevant points for skills.

Old Occupations

The standard occupations from *Call of Cthulhu* are generally available to investigators in this setting. Some of them, such as Farmer or Tribal Member, will obviously be far less common in the future. The Keeper might also wish to modify some of the occupations to reflect specific differences between the game settings.

New Occupations

The following are new occupations for this setting.

Atmosphere Craft Pilot

Description: While vessels will travel the void, many more will remain within the atmosphere and will need skilled pilots to guide them safely. While these pilots all fly aircraft, they often fly through strange atmospheres under alien skies.

Occupation Skills: Astronomy, Electrical Repair, Electronics, Mechanical Repair, Navigate, Operate Heavy Machinery, Pilot Aircraft and any one other skill as a specialty.

Asteroid Prospector/Miner
Description: Asteroid prospectors/miners have a dangerous and potential lucrative career exploring and mining asteroids and other small bodies in space. They are similar in some ways to the prospectors of old in that they tend to be ambitious and self-reliant. Unlike their historical predecessors, they need to possess technical skills in order to even survive the challenges of their occupation.
Occupation Skills: Electrical Repair, Electronics, Low/Zero Gravity Operations, Low Gravity Mining, Mechanical Repair, Navigate, Operate Heavy Machinery, Planetology

Computer Specialist
Description: Computers are an integral and critical part of all aspects of life and hence experts are needed to program, repair, and design them. While anyone with a modicum of intelligence can use a typical computer, special skills are required to deal with the more technical aspects of these machines.
Occupation Skills: Computer Use, Electronics, Electrical Repair, Library Use, and any two other skills as personal specialties.

Gate System Engineer
Description: Gate System Engineers are tasked with maintaining, repairing, and operating the Markelson Gate Systems that are the heart of human starships. They are also charged with protecting the secret of the Gate System.
Occupation Skills: Biology, Computer Use, Electrical Repair, Electronics, Gate System Operation, Library Use, Mechanical Repair, Medicine, and Physics.

Marine
Description: Although the use of the term "marine" is a misnomer, the tradition of calling soldiers aboard ships and naval installations "marines" carried over into space. Marines, in this sense, are combat troops who have been specially trained in low and zero gravity combat. While other soldiers receive training in such combat, they generally are not as focused in this area as marines.
Occupation Skills: Dodge, First Aid, Hide, Listen, Mechanical Repair, Rifle, Sneak, Low/Zero Gravity Operations

Orbital Engineer
Description: The orbital engineers are responsible for the design, construction, and maintenance of orbital assets such as ships, satellites, and stations. The orbital engineer's life can be a difficult one and sometimes a short one: accidents are rare but typically fatal in the harsh and unforgiving environment of space.
Occupation Skills: Chemistry, Computer Use, Electrical Repair, Electronics, Library Use, Low/Zero Gravity Operations, Mechanical Repair, Physics, and one Space Engineering skill as a specialization.

Planetary Engineer
Description: Planetary engineers design and maintain ground based structures. They range from experts with advanced degrees to individuals who just have a knack for making structures that will not fall down.
Occupation Skills: Chemistry, Computer Use, Electrical Repair, Electronics, Geology, Library Use, Mechanical Repair, Physics, and one Planetary Engineering skill as a specialty.

Space/Planetary Scientist
Description: The planetary scientist specializes in the study of certain aspects of planets, such as their geology, ecology, and so forth. The space scientist specializes in the study of space and the objects within it, such as comets, stars, and planets. Her

studies are typically on a more general scale than the planetary scientist, who typically focuses on one planet or even one small aspect of it, but space scientists sometimes have a fairly narrow focus (such as studying comets).
Occupation Skills: Chemistry, Computer Use, Library Use, Geology or Astronomy, Physics, and one Space or Planetary Science skill as a specialization.

Small Craft Pilot
Description: The small craft pilot specializes in the operation of the smaller spacecraft such as shuttles, space planes, and orbital vehicles. For the most part, small craft pilots specialize in either craft that are space and atmosphere capable (shuttles) or those that are limited to space (orbital vehicles). Some individuals have been known to be skilled in both areas. Some pilots prefer to know the basics of how to service and repair their craft themselves while others prefer to leave this concern entirely to service crews.
Occupation Skills: Astronomy, Computer Use, Electrical Repair, Electronics, Mechanical Repair, Navigation, Pilot Shuttle or Pilot OV, Low/Zero Gravity Operations.

Space Ship Pilot
Description: Space ship pilots are specially trained to pilot the larger space vessels. These vessels typically do not enter the atmosphere of planets, but some space vessels are capable of doing so. This is a highly technical profession that requires both courage and intelligence.
Occupation Skills: Astronomy, Computer Use, Electrical Repair, Electronics, Low/Zero Gravity Operations, Mechanical Repair, Navigation, and Pilot Space Ship.

New Skills

Low/Zero Gravity Operations (10%)
Use of this skill enables the investigator to function more or less normally within low or no gravity situations. For the most part, a character with any degree of this skill will be able perform routine tasks without any problems. Challenging actions (such as running, fighting or leaping from one space ship to another) will require a skill check. A failed skill roll will result in the action going awry in some way (losing control while running or missing the ship, for example). Relevant physical skills (such as weapon and physical combat skills) should be averaged with this skill (but not to exceed the maximum in the skill in question) when used in low or zero gravity situations.

Gate System Operation (01%)
Use of this skill enables the investigator to operate the Markelson Gate System (or comparable alien systems) properly. This skill governs all operations of the Gate System including the Masking Field Generator as well as the Gate Generator. Activating and monitoring the systems is an easy task for those competent in such operations.
This skill also governs programming the Gate System properly so that the ship emerges in the desired location after entering Gate Space. Because stellar bodies move constantly, the Gate must be correctly programmed each time a Gate is opened.
Even with computer assistance, setting the Gate System properly requires considerable skill as well as a certain intuitive grasp of the system. A successful skill roll will result in the ship emerging in the desired location. At the keeper's discretion, better rolls can result in even more precise emergence Gateways. A failed roll means that something has gone wrong. If the roll is close to being a success, the emergent

Gateway will be fairly close to the desired emergence point. Worse rolls will, of course, result in the emergence point being even further away from the desired emergence point. A roll of 00 results in a truly spectacular failure. This can range from the ship emerging in entirely the wrong location to a failure to emerge at all.

Gunnery (5%)

Use of this skill enables the investigator to aim and fire vehicle mounted heavy weapons such as cannons, missile launchers and laser weapons. Weapons that are governed by other skills are operated using those skills even when they are mounted on a vehicle. For example, vehicle mounted machine guns are operated using the Machine Gun skill.

Since there are many types of vehicle mounted weapons, the Keeper might decide to adjust the skill of an investigator who is using weapons he is not familiar with. For example, someone who was trained as a tank gunner would not be immediately familiar with operating a space plane's laser weapons.

Pilot (01%)

The pilot skill has been expanded to include space vessels.

Pilot OV (01%)

An OV (orbital vehicle) is a small craft that is designed to operate exclusively within low and zero gravity conditions. While the name implies that such craft operate in the orbits of planetary bodies, that is not always the case. The name comes from the fact that the earliest craft of this type was designed to transfer passengers and cargo from earth orbit to the moon.

This type of craft differs from spaceships in that they are primarily designed for relatively short-range operations. Piloting an orbital vehicle successfully requires a high degree of technical skill. This skill covers all aspects of piloting such a vehicle, including basic navigation.

An investigator with at least 15% in the skill will be able to handle standard flight operations without any difficulty. An investigator with less than 15% in the skill can operate the craft under ideal conditions, but operating a craft in less ideal situations will often be more a matter of luck than skill.

Even for skilled pilots, landing and docking operations are always potentially dangerous. Under good conditions (external guidance and a proper docking station or landing pad) the investigator can double his skill before rolling. If conditions are poor (only a flat surface to land on), the investigator rolls at his normal skill. If the conditions are truly awful (trying to dock with a spaceship that is tumbling out of control) the investigator might be required to roll against one quarter of his skill. A failed landing or docking might damage the craft and even the passengers (Luck rolls can be used to avoid injury). A roll of 00 will be a memorable failure that might destroy the craft and injure those on board.

The Keeper might rule that other situations require skill rolls as well. Certain situations will require modified rolls; the modification of the roll is up to the Keeper as are the effects of failure.

There are various types of orbital vehicles ranging from small work pods to fairly large cargo carriers. As such, the investigator will need to select a specific class of OV.

Pilot Shuttle (01%)

A space shuttle is a small craft that is designed to operate in both space and in planetary atmospheres. Space planes also fall within the domain of this skill. The informal distinction between the two is that space shuttles lift straight up (often using booster rockets) while space planes take off

like classic aircraft and then fly into space. Highly advanced shuttles are often known as shuttlecraft and are capable of lifting off without boosters. Such a craft carried by a military spaceship is often known as a ship's boat.

Whatever the specific type, shuttles differ from spaceships in that they are primarily designed for relatively short-range operations. Piloting a shuttle successfully requires a high degree of technical skill. This skill covers all aspects of piloting such a vehicle, including basic navigation.

An investigator with at least 15% in the skill will be able to handle standard flight operations without any difficulty. An investigator with less than 15% in the skill can operate the craft under ideal conditions, but operating a craft in less ideal situations will often be more a matter of luck than skill.

Even for skilled pilots, landing and docking operations are always potentially dangerous. Under good conditions (external guidance and a proper landing field) the investigator can double his skill before rolling. If conditions are poor (only a flat surface to land on), the investigator rolls at his normal skill. If the conditions are truly awful (trying to land in terrible weather) the investigator might be required to roll against one quarter of his skill. A failed landing or docking might damage the craft and even the passengers (Luck rolls can be used to avoid injury). A roll of 00 will be a memorable failure that might destroy the craft and injure those on board.

The Keeper might rule that other situations require skill rolls as well. Certain situations will require modified rolls; the modification of the roll is up to the Keeper as are the effects of failure.

There are various types of shuttles ranging from small private space planes to fairly large cargo carriers. As such, the investigator will need to select a specific class of shuttle.

Pilot Space Ship (01%)

A space ship is a large craft that is designed to operate primarily within the realm of space. While most space ships cannot enter the atmosphere of a planet, some smaller or specially designed ships can do so.

Piloting a space ship successfully requires a high degree of technical skill. This skill covers all aspects of piloting such a vehicle, including basic navigation.

An investigator with at least 15% in the skill will be able to handle standard flight operations without any difficulty. An investigator with less than 15% in the skill can operate the craft under ideal conditions, but operating a craft in less ideal situations will often be more a matter of luck than skill.

Even for skilled pilots, landing and docking operations are always potentially dangerous. Under good conditions (external guidance and a proper docking station or landing pad) the investigator can double his skill before rolling. If conditions are poor (only a flat surface to land on), the investigator rolls at his normal skill. If the conditions are truly awful (trying to dock with another spaceship that is tumbling out of control) the investigator might be required to roll against one quarter of his skill. A failed landing or docking might damage the craft and even the passengers (Luck rolls can be used to avoid injury). A roll of 00 will be a memorable failure that might destroy the craft and injure those on board.

The Keeper might rule that other situations require skill rolls as well. Certain situations will require modified rolls; the modification of the roll is up to the Keeper as are the effects of failure.

There are various types of orbital vehicles ranging from small scout ships to massive colony vessels and warships. As such, an investigator will need to select a specific class of vehicle.

Planetary Engineering (01%)

Planetary Engineering skills govern engineering operations on the surface of a world with a significant gravity field (at least 20% of that of earth). Such operations may be on worlds other than earth, such as Mars. If players wish their characters to have specialized engineering skills, they should work out the details with their Keeper.

Examples of Planetary Engineering Skills are as follows

Construction (01%)

This skill governs the construction of structures ranging from small buildings to massive skyscrapers. Keepers may wish to limit investigator skills to general areas such as small construction, medium construction, and large construction. Individuals with this skill can design, supervise the construction of, and inspect structures.

Mining(01%)

This skill governs a variety of mining operations ranging from commercial digging to the building of underground complexes. Individuals with this skill can supervise mining operations and inspect underground sites for their structural integrity. Individuals may have various specializations in this skill such as strip mining, deep mining, and so forth.

Sciences (01%)

The following are examples of some science specializations:

Planetology (01%)

This skill is comparable to the geology skill, except it governs planetary bodies in general. It also governs the skill of the character in drawing informed conclusions regarding the planet as a system, but such conclusions will tend to be more general than those which a specialist (such as a geologist) would draw. For example, individuals with this skill would be able to draw informed conclusions about the weather patterns of a planet given adequate evidence but the individual would not be as accurate as someone who specialized in meteorology.

Xeno-Archeology(01%)

An investigator with ability in this area has received (theoretical or practical) training in the exploration of alien ruins as well as the identification and dating of various alien objects. Individuals with this skill are often specialized in specific cultures. Individuals with training in this area would also be capable of working with human sites, but with much less skill than an archaeologist who was trained in human cultures.

Xeno-Biology(01%)

An investigator that possesses this skill has been trained in the basics of standard biology and has also received special training in theoretical biology regarding possible alien life forms. In some settings, training in actual alien biology will be possible. Someone skilled in biology will also have basic skills in xeno-biology but will lack specialized training in non-terrestrial life. This skill could prove handy in investigating the nature of (and perhaps determining the weaknesses of) various mythos beings.

Remote Vehicle Operation (10%)

This skill governs the operation of remote operated vehicles such as survey drones. An

investigator must select a particular basic type of remote vehicle he or she is skilled in operating. Any skill level permits the individual to operate a vehicle in normal conditions, while skill rolls will be required for more difficult operations. These rolls may also be modified at the keeper's discretion. For example, directing a survey drone through a standard search pattern would require no roll for a skilled operator, but directing a survey drone through a narrow cavern would.

This skill governs the piloting or driving of the vehicle as well as its basic operations (such as the use of manipulator arms). Doing skilled tasks using the ROV will require the relevant skills. For example, using a ROV to conduct mechanical repairs would require Mechanical Repair skill. Since the operator's skill with the RCV will limit her ability to use her other skills, the operator's skill should be averaged with her RVO skill when using a skill remotely. Obviously, the RVO skill cannot increase the individual's other skills. Hence, the maximum for the average of the skills is the other skill. For example, if an operator has 20% skill in RVO and 50% in Mechanical Repair, then her Mechanical Repair skill when using a RVO would be 35%. If she had 50% in her RVO skill and 25% in Mechanical Repair, then her Mechanical Repair skill when using a RVO would remain 25%.

There are various types of ROVs. The main skill specializations are for the operation of airborne, aquatic, space or ground ROVs.

Space Engineering (01%)

This skill category is similar to that of Planetary Engineering except it governs construction work in low and zero gravity conditions. As with Planetary Engineering, players who wish to pick a specialization will need to work out the details with their Keeper. Two examples of specializations are as follows:

Low/Zero Gravity Construction (01%)

Similar to Construction, this skill governs the construction of structures in conditions involving low or zero gravity (as well as vacuum conditions). Building spaceships and space stations requires this skill. Individuals may further specialize in various areas. For example, a person may be an expert in the construction of space ships.

Low/Zero Gravity Mining (01%)

This skill governs mining operations in low gravity and vacuum or unusual atmospheric conditions. It includes knowledge of the special challenges presented by such conditions as well as understanding of how to effectively deal with them.

Optional Skill Rules

The following are two optional rules for skills. These make the game somewhat more realistic while only making it slightly more complex.

Difficulty Ratings

Rather than judging difficulty on an ad hoc basis, a Keeper can elect to assign difficulty ratings to tasks. This system already exists in a basic form in the rules for firearms: it is easier to hit things at point blank range and harder to hit them at longer ranges.

The system is quite simple: after determining the difficulty rating, multiply the skill rating by the appropriate number. Keepers desiring more levels of difficulty can simply employ additional modifiers.

Normal difficulty is the baseline as set in the standard *Call of Cthulhu* rules. Trying to shoot an opponent at close range, trying to find an article in a library using Library Use and so forth would be tasks of normal difficulty.

Simple difficulty is just that-something that is simple to accomplish and such that a competent individual would have almost no chance of failing. A trained pilot running through a pre-flight check list would find such a task to be simple.

Easy difficulty is such that a competent individual will succeed almost all the time and even someone who is not particular skilled will have a decent chance of success. Trying to shoot someone at point blank range would be easy and landing a plane on a commercial grade runway with tower guidance would be an easy task for a trained pilot.

Challenging difficulty is such that a competent individual faces a real risk of failing. Even for a skilled pilot, trying to land in a storm would be challenging. As another example, even a trained mechanic would find it challenging to repair a vehicle without the proper tools.

Hard difficulty is such that even a skilled professional is likely to fail. Trying to shoot a distant opponent would be a hard task. Trying to land a damaged shuttlecraft on the rough surface of an uninhabited moon would be hard even for a skilled pilot.

Difficulty Rating (DR)	Skill Modifier
Simple	X4
Easy	X2
Normal	X1
Challenging	X ½
Hard	X ¼

Skill Similarity

In reality, someone who has skill or knowledge in one specific area can often apply some of that skill or knowledge in related areas. For example, someone who can fly a small prop plane would have a better chance of flying a jet airliner than a person who had never flown. Keepers who wish to add this aspect of reality to the game can use the following skill similarity rule.

If the Keeper decides that if two skills are adequately similar, then one can be substituted for the other. In most cases, completing a task with a substituted skill will be more challenging. One way to reflect this is to increase the DR of a skill roll by one level in such cases. If the DR rule is not used, then skill can simply be halved (round up). For example, an investigator with Pilot Aircraft at 50% who is trained in small planes could fly a larger, more complex plane as if she had 25% in that skill.

A generous Keeper might allow a skill to be applied in cases in which the two skills are somewhat alike, but in some ways significantly different. In this case, the DR should be increased by two. If the DR rule it not used, just reduce the skill to 25% of normal. For example, an investigator with Pilot Aircraft at 50% attempting to fly a space shuttle in the atmosphere would have an effective skill of 13%.

Environmental Factors

There are many opportunities for the investigators to encounter strange and hostile environments in this game setting. For simplicity's sake, three main factors are considered: pressure, atmosphere and gravity. These rules are, of course, based on human physiology. Other creatures might be affected differently (or not at all) by conditions that would harm or kill a human.

Pressure

To survive, humans need a breathable atmosphere with the right amount of pressure. As such, environments with extremely low pressure will be fatal to exposed humans.

The most extreme form of low pressure is that encountered in a vacuum, such as in space. Unprotected exposure to vacuum will

render a human unconscious in about ten seconds and will result in death in approximately 90 seconds.

In game mechanics, an exposed investigator will remain conscious for a number of seconds equal to his CON score (10-11 seconds on average). He will be able to survive for a total number of seconds equal to nine times his CON score (90-99 seconds on average). If someone is rescued from the vacuum before death, the person will recover fairly quickly.

While death by exposure to vacuum is not a pretty sight, humans do not explode in the dramatic manner often portrayed in movies. They will, however, tend to expand in unpleasant ways because of the pressure difference between the interior of the body and the exterior environment. Clearly seeing someone die from exposure to vacuum would be a 0/1D3 SAN loss.

If the pressure is less than what is needed to sustain human life but is greater than that of a vacuum, then the normal suffocation rules can be used. Suffocation rules are also used if the pressure is adequate but the atmosphere is something humans cannot breathe, such as methane or carbon dioxide.

A breathable, low-pressure atmosphere will tend to cause a human to tire much faster and perhaps might even cause a loss of consciousness. If the keeper desires that level of realism, then he can require the investigators to rest more often or impose other penalties.

Under vacuum or low pressure conditions, a leak in a pressurized vehicle, structure, or suit will result in a gradual loss of air and pressure. If the life support systems of a structure, vehicle, or suit fail, those inside will suffocate when the air runs out.

Combat and Damage in Vacuum

Combat in vacuum or extremely low pressure is far more dangerous than normal combat.

In general, human combatants in vacuum will be wearing space suits or in vehicles. If they are not, they will not be engaged in combat very long. If a human wearing a space suit in damaged in combat or by accident, the following rules apply: the initial damage will be normal. If the damage does not exceed twice the suit's armor rating, self sealing suits will seal the holes. If the damage exceeds twice the suit's armor rating or the suit is not self sealing, the individual will suffer damage equal to half the original damage each round, until the person is dead, has patched the damage, or gets into an area of adequate pressure.

Atmospheres

From a practical standpoint, there are two types of atmospheres: those that humans can breathe and those they cannot. Obviously, a non-existent atmosphere would fall into the latter category.

A breathable atmosphere has the proper mix of gasses (primarily oxygen) required to sustain human life. Some breathable atmospheres might contain other things that are potentially harmful to human beings (such as smoke, spores, or toxic chemicals) but these can be dealt with by the proper precautions (such as filter masks).

A non-breathable atmosphere is one that lacks the proper mix of gasses or otherwise cannot sustain human life. Provided that the pressure is otherwise adequate, a human can survive in such an atmosphere as long as she has an adequate air supply. For example, a human could survive in a ship full of carbon dioxide gas using an oxygen mask.

Some atmospheres might have various negative effects on human beings. For example, an atmosphere might contain highly corrosive gasses that dissolve exposed flesh. Such specifically unpleasant atmospheres would have various game effects based on the keeper's discretion.

Combat and Damage in Hostile Atmospheres

Combat in hostile atmospheres will tend to be more dangerous than normal combat situations.

If the atmosphere is merely non-breathable, then there are no special rules needed to govern combat or accidental damage in that setting. For example, being shot while within an atmosphere of carbon dioxide is the same as being shot in a normal atmosphere. Obviously, damage to the equipment that is providing breathable air will have an effect on those relying on the equipment.

If exposure to the atmosphere is harmful, then unprotected beings will be affected by it. If a human wearing a space suit or other protective gear is injured, the following rules apply. If the damage does not exceed twice the suit's armor rating, self sealing suits will seal the holes. If the damage exceeds twice the suits armor rating or the suit is not self sealing, the person will be exposed to the atmosphere and begin to suffer whatever ill effects it might inflict.

If the atmosphere consists of gasses harmful to humans, if such gasses enter a leaking structure or vehicle, then they might harm any human occupants. The exact effect depends on the nature of the gasses in question and the keeper's decision.

Gravity

Normal gravity for humans is that of earth. Earth gravity is often referred to as "one standard gravity" or "1G."While gravity does not affect mass, it does affect weight.

Keeping things simple, the weight of an object is equal to its weight on earth times the actual gravity. For example, a gun that weighs ten pounds on earth would weigh twenty pounds on a world with twice earth's gravity. In zero gravity (or microgravity, as some prefer to say), objects are effectively weightless. However, they still have mass and volume hence an investigator will still be limited in what she can easily carry and move.

Gravity also affects how quickly a character can move as well as the effects of falling. In higher gravity, movement is more difficult and falls are more damaging. To simulate this, reduce movement speeds based on how many times the gravity is greater than that of earth. For example, in twice normal gravity investigators would move at half speed. In the case of falling damage, multiply the damage by the number of times the gravity is greater than that of earth. For example, investigators falling on a world with twice earth's gravity would sustain twice the normal falling damage. Likewise, objects falling one someone will inflict proportionally more damage in higher gravity than in lower gravity.

Lower gravity makes movement faster because the investigator can bound along. To simulate this in a very simple manner, increase the investigator's movement based on what fraction of gravity the world has. For example, an investigator could move twice as fast on a world with half earth's gravity. This assumes an open area in which the investigator can freely move by bounding. In enclosed or obstructed areas an investigator's speed will be reduced. For microgravity, assume that an investigator can move up to ten times his normal speed provided that he can make contact with a surface often enough to control his movement. If this cannot be done, the investigator will continue to move in a straight line until an outside force acts upon him (such as a wall). Naturally, the use of artificial propulsion (like a jet pack) will significantly increase potential speed (and the severity of accidents).

Falling in lower gravity inflicts less damage for the same distance fallen. To simulate this, multiply the damage by the gravity (relative to earth). For example,

falling on a world with half of earth's gravity would inflict half normal damage. This can also be applied to objects falling onto someone. Falling objects will inflict less damage in lower gravity.

Vehicles are less affected by gravity than investigators because they cannot (unless they are designed to jump) take advantage of the lower gravity in the same way. Driving a car in lower or higher gravity is about the same as driving a car in normal gravity. For the sake of simplicity, vehicle movement can remain the same in lower or higher gravity (provided that the gravity is high enough to allow traction for ground vehicles and low enough that the vehicle is not crushed into the surface). Keepers desiring more realism can adjust vehicle speed up and down hills and also adjust the load carrying capacity of vehicles. Interestingly, higher gravity tends to make ground vehicles handle better because they have better traction.

Combat in Low/Zero Gravity

Combat that occurs in lower gravity is considerably more difficult. For game purposes and for the sake of simplicity, combat can simply be designated as being in low gravity or not. As a rule of thumb, if the gravity is at least one quarter of that of earth, then combat can be handled using the normal rules. If the gravity is less than that, then it is a low gravity situation.

In such low or zero gravity situations, all relevant combat skills are averaged with the character's Low/Zero Gravity skill. The weapons used in combat can also affect the investigators chance of success.

Weapons that recoil (such as firearms), melee weapons (including unarmed attacks), and thrown weapons may cause a loss of control. This is because of the laws of motion. Each time an investigator uses such a weapon, he or she must check against his or her Low/Zero Gravity Operations skill at a negative modifier equal to twice the maximum damage of the weapon if the character is not properly braced. For example, firing a 12 gauge shotgun that can do a maximum of 24 points of damage would result in the skill being reduced by 48% for the roll. If the investigator is properly braced the negative modifier equal to the maximum damage of the weapon. For example, firing a 12 gauge shotgun while braced would result in a penalty of 24 to the investigator's skill. In the case of melee weapons, the investigator's damage bonus is included. An investigator can decide to reduce her damage bonus to reduce the penalty.

A failed roll will cause the character to lose control and he or she will be pushed backwards (how far and to what result is left to the keeper). The character will be out of control, and unable to act, until he or she can make a successful skill roll using Low/Zero Gravity Operations.

Some weapons are specifically designed for combat in low/zero gravity and this will be specified in their description. The keeper will also need to adjust the effects of certain weapons based on how they actually do damage. For example, a thrown grenade will do far more damage than a thrown rock, but throwing either would create about the same amount of imbalance (around 3 points if braced or 6 points if not). As another example, a weapon that discharged energy on contact (such as a taser) could do a great deal of damage but would not be that destabilizing. In such cases, the keeper should compare the physical force required to use the weapon to similar weapons. For example, striking a target with a electrified "shock club" would be just like hitting the target with a normal club in terms of the penalty.

Keepers desiring more realism can devise rules based on a more accurate simulation of the effects of lower gravity on the motion of

objects. For example, the range of projective weapons (such as bullets and thrown grenades) would increase in lower gravity.

Combat in High Gravity

Combat that occurs in high gravity is somewhat more difficult than combat in normal gravity. The main effects of higher gravity are that the movement of combatants will be reduced and the consequences of falling (or having something fall onto someone) will be more severe. High gravity, provided that the combatants can still move, will not affect combat skills.

Keepers who desire a higher degree of realism can reduce the range of projectile weapons (such as bullets and thrown knifes) based on the gravity.

Sanity Rules

The standard sanity (and insanity) rules for *Call of Cthulhu* apply, with some modifications. Advances in psychiatry, neurology and pharmaceuticals do provide some additional options for the treatment of mental disorders and the following rules govern the effects of these advances.

Increasing Current Sanity Points

Because of significant improvement in psychotherapy and psychiatric medications, investigators undergoing such treatment will receive 1D6 Sanity points for each month of successful therapy. Otherwise, the rules remain the same as in the standard game. If the investigator does not have access to advanced methods, then the normal rules apply (1D3 Sanity points rather than 1D6).

Preventative Medicine

Advances in pharmaceuticals have produced drugs designed to limit the impact of shocking, frightening or horrifying events on the mind. The weakest versions of these drugs were designed to help mitigate various fears and phobias. For example, one popular commercial product, Angel's Wings ("you'll fly with serenity on angel's wings"), was developed to combat the fear of flying. Various militaries have also experimented with stronger drugs designed to limit the psychological damage of traumatic experiences. Some of these drugs are strong enough to affect sanity loss.

These drugs fall into two main categories: emotional buffers and emotional inhibitors. Emotional buffers are the milder of the two and serve to dampen a person's reaction to terrifying or horrifying events. They work by altering the neuro-chemical responses in the brain associated with fear. A standard dose of the drug will last 120+3D10 minutes.

While the drug does not actually prevent sanity point loss, it does help avoid temporary insanity. While the drug is in effect, sanity point losses are treated as if they half their actual value (round up). This can sometimes be enough to prevent temporary insanity. For example, if an investigator loses 7 sanity points, the loss is treated as 4 points and thus the investigator has no risk of going temporarily insane. The drug does not, however, prevent actual sanity loss. So, the investigator deducts the full sanity point loss from his total. The drug also mitigates the effects of normal fear, so an investigator using it will be far less affected by anything that would normally frighten her-including phobias.

The emotion buffer is not without its side effects. Since the buffer limits the range of emotions, an investigator under its influence will be incapable of extreme emotional reactions and hence they will be fairly cold and somewhat distant. To an investigator under the influence of the drug, emotional ties (such as love and friendship) will seem weaker and less important. The keeper must be certain to enforce these conditions and be sure that the player takes them into account. Another serious side

effect is that the experience of the drug tends to be rather disturbing to most individuals. Once the drug wears off, the investigator must make a Sanity check or lose one sanity point. The drug is non-addictive.

The emotion inhibitor is even more powerful than the emotional buffer. It serves to prevent the mind from reacting to horrifying events by chemically inhibiting certain chemical responses in the brain. Each dose of the drug lasts 30+3D10 minutes. While the drug is in effect, it is impossible for the investigator to go insane due to Sanity point loss. However, the investigator still deducts the full sanity point loss from her total. If an investigator's sanity points are reduced to zero while under the influence of the drug, she will be insane when the drug wears off. In theory, it would be possible to prevent this from happening by taking the drug again before its effects wear off.

The emotion inhibitor is not without serious side effects. Since the drug inhibits emotions, an investigator under its influence will be incapable of emotional reactions. That is, an investigator under the influence of the drug, emotional ties (such as love and friendship) will seem meaningless. The investigator will also be incapable of feeling negative emotions, like hatred or rage. Despite the lack of emotions, the investigator will still be able to take action as her memory and reasoning abilities will be unimpaired. The keeper must be certain to enforce these conditions and be sure that the player takes them into account. Another serious side effect is that the experience of the drug is terribly disturbing to most individuals. Once the drug wears off, the investigator suffers a 0/1D4 sanity point loss. The drug is non-addictive.

Treatment of Insanity

Many of the methods used in treating insanity in the past will still be employed in the future. However, medical and pharmaceutical advances will make the treatment more effective.

The private care and institutionalization options from the standard rules apply normally except the investigator gains 1D6 Sanity points for each month of successful treatment. This assumes that the investigator is receiving the benefits of advanced treatment. If the investigator is being treated by less advanced means, then the normal rules (1D3 Sanity points rather than 1D6).

The wandering and homeless option remains the same. Even in the future, that will still be a bad situation.

Personality Restructuring

In the past, when an individual went insane, there was often nothing that could be done beyond minimizing the damage he could do to himself or others. Fortunately, advances in medicine and technology have provided a way to undo permanent insanity, thus making it no longer permanent. This method is personality restructuring.

In many ways, personality restructuring is analogous to repairing a damaged computer operating system in order to get it working normally once more. The process itself involves three main stages.

In the first stage, the investigator's brain and mental processes are mapped out and recreated in a virtual brain. From this map, the nature of the madness is determined.

The second stage involves the use of surgery, drugs, and psychiatry to excise the madness. Not surprisingly, this process destroys much of the investigator's memories along with the insanity. Third, the investigator's personality is reconstructed. If the process is successful, the individual is restored to some semblance of sanity and her former self. Of course, there will be a few things missing.

The first stage of the process takes 1D4 months to complete and requires the use of

Computer Use, Medicine and Psychoanalysis skills. Each skill has to be successfully rolled each month in order for the next step of the treatment to begin.

The second stage of the procedure is of indefinite length. The intensive therapy requires Medicine and Psychoanalysis. Each skill is rolled each week. If both rolls succeed, the investigator loses 1D10 points of Cthulhu Mythos and 1D10 points of every other skill as his memory is excised. If either or both rolls fail, there is no effect. For every 96-00 rolled on either skill, the investigator loses 1D10 points of each skill, but loses no Cthulhu Mythos points. In no case can a skill be reduced below 01%, with the exception of Cthulhu Mythos skill.

The process of treatment may be continued indefinitely, but each week the patient must roll under her CON X5 or suffer 3D6 points of damage. If the roll is successful, the damage is only 1D6. This damage reflects the terrible stress of the process on the body and mind. This damage may be treated normally. If the investigator being treated has no Cthulhu Mythos skill points (unlikely, but it could happen), then the process will take 1D4 weeks before the investigator is ready for the third stage.

The third stage of the process takes an indefinite length of time and requires the use of Computer Use, Medicine, and Psychoanalysis. Each week of treatment the skills are rolled. A successful use of all the skills restores 1D10 points to each skill and 1D3 Sanity points. A failed roll results in no gains and wastes a week. Each roll of 96-00 results in an additional loss of 1D10 points of each skill. The third stage of the process can continue until each 1D10 of lost skill points has been matched by 1D10 of restored skill points. In no case may an investigator gain more points than he lost in step two.

When the therapy is finished, the investigator is indefinitely insane and can now be treated further using more conventional measures.

There will be some gaps in the investigator's memory from the treatment. Some individuals who have been treated feel very strangely about the process and a few have reported that they think that "pieces of their souls" are missing.

Personality Reconstruction Example

Already teetering on the brink of madness due to a series of horrific incidents, Dr. David Tsung is driven permanently insane by an unfortunate encounter with a horrific alien artifact. After his companions render him unconscious and bring him to a facility for treatment, he is scheduled for personality reconstruction.

The first stage takes only a month and the keeper makes the skill rolls for the NPC treatment team. At the time of his insanity, Dr. Tsung has 30 points of Cthulhu Mythos. To condense the process, the keeper rolls for four weeks of treatment. Dr. Sung's player is lucky and each week the team succeeds in the process. The keeper rolls 4D10 to determine how many Cthulhu Mythos points are excised and another 4D10 to see how many skill points are lost. The keeper gets a result of 27 on the first 4D10, thus reducing Tsung's Cthulhu Mythos skill to 3. The keeper gets a result of 32 on the second 4D10 roll, reducing Tsung's other skills by 32 points each. For the first three weeks Dr. Sung's player also manages to make his CON X 5 roll (thus taking a non-life threatening 1D6 per week, which the doctors quickly treat), but in the fourth week he fails and suffers 3D6 damage. Tsung survives the damage, but the keeper rules that the treatment team decides to end this stage, out of fear of harming Tsung further.

The team then begins stage three. Tsung is lucky during the process and the NPCs succeed in their skill rolls over four successive weeks. Since Tsung lost 4D10