

PYRAMID



Issue 3/6 April '09

SPACE COLONY ALPHA



SURPRISES FROM MOTHER NATURE

by Kelly Pedersen

WHEN THE DARK EATS YOU
by J. Edward Tremlet

HOW TO BUILD TOMORROW
by Christian Nienhaus

THE SUPER COLONY
by Brian Rogers

REACHING THE STARS
by Chris Wong Sick Hong

STEVE JACKSON GAMES

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Article Colors

Each article is color-coded to help you find your favorite sections.

Pale Blue: In This Issue

Brown: In Every Issue (letters, humor, editorial, etc.)

Dark Blue: **GURPS** Features

Purple: Other Features

Green: Recommended Reading

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IN THIS ISSUE

The future awaits! This issue of *Pyramid* provides the essential information you need to found your own space colony . . . at least at the gaming table. Most of the articles are generic, but our biggest article is designed with **GURPS** fans in mind: Kelly Pedersen's *Surprises From Mother Nature*. These new critters are suitable for any space world, but they're especially appropriate for groups of new space colonists trying to make sense of the local ecosystem.

The journey to a new world can batter even the most stalwart psyche, so J. Edward Tremlett explores what happens *When the Dark Eats You* – what could happen and how to prevent it.

Your new colony will never get off the ground if it doesn't have the right stuff. Thankfully, Christian Nienhaus gives you details on what a fledgling civilization needs to survive in *How to Build Tomorrow*.

Brian Rogers examines the similarities and differences between the supers and science fiction genre in *The Super Colony*. This article offers suggestions on how the two overlap, including a sample supers space colony to use as a campaign setting or a location to visit.

When it comes to colonizing another world, getting there is more than half the challenge. Chris Wong Sick Hong solves that problem by comparing the benefits and drawbacks of various engine types in *Reaching for the Stars*.

Once you decide on how to get there, let Steven Marsh, *Pyramid* editor, help you decide just how far apart worlds are in this month's *Random Thought Table*.

This issue's bonus insert, *Your Very Own Space Colony*, provides GMs with an instant method of generating colony layouts and ready-to-use maps, making it a tool especially helpful in world-hopping campaigns.

The two *Recommended Reading* articles make suggestions for games useful for replicating the space colonization experience, and they offer ideas on how to combine certain board games with roleplaying campaigns.

This month's *Last Word* comes from Ken Burnside, the creative force behind Ad Astra Games. Find out from him the final word on the final frontier.

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FROM THE EDITOR

This is the sixth issue of the monthly PDF version of *Pyramid*, and the second of our futuristic issues. This time we look at “Colony Alpha” – the first tentative steps off our blue-green marble onto the soil of some other world.



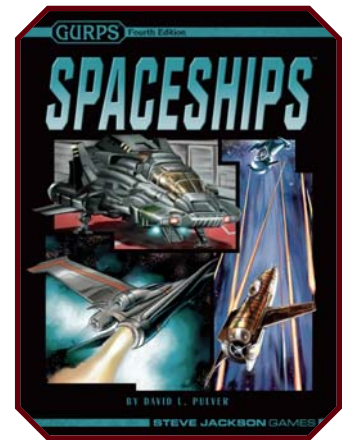
Part of the appeal of that first colony is that practically *anything* can happen. From gritty day-to-day survival tales to optimistic attempts at forging utopia to Machiavellian political maneuvering to two-fisted pulp-sci-fi action on a strange world to transformative power fantasies, the possibilities of adventure in a new home are literally out of this world. In fact, it might even be possible to combine multiple themes and ideas in ways that would

be more difficult in non-colony settings. For example, what if the heroes are charged with exploring and protecting the outpost by day (two-fisted action) and forced to defend the citizens by night from shadowy agents attempting to guide the colony to their own purposes (Machiavellian intrigues)?

The bulk of the “heavy lifting” of this issue is most likely found in whatever game system you’re going to use for your space-faring game, so this issue has fewer rules and game stats

than normal. Rather, there are a number of articles with ideas to consider when making the world. For game mechanics, *GURPS Space* continues to be one of the foremost works on subjects necessary for interstellar colonization – FTL travel, star systems and planets, and the like – and is an invaluable resource even if you don’t play *GURPS*. In addition, the *GURPS Spaceships* supplements are useful for those who want to construct vessels to help get the heroes to these strange, new vistas.

In many sci-fi settings, players get to look into doorways to the future. In a Colony Alpha campaign, the heroes may well have to first build the door . . . and then kick it down.



WRITE HERE, WRITE NOW

We love to get your feedback! Please feel free to send letters and comments to pyramid@sjgames.com, or post online on our forums at forums.sjgames.com. It’s especially important to make your voices heard, since this is the last of the six-issue subscriptions for those folks who were subscribers to the old *Pyramid*; we want to know what’ll make you stick around!

*While what’s in **Pyramid** is extremely useful and I will re-subscribe (if funds allow), it can afford to be a little less formal than the **GURPS** books. Not the articles obviously . . . they’re excellent and keep them coming!*

– trekkyjpj, on the Steve Jackson Games forums

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SURPRISES FROM MOTHER NATURE

BY KELLY PEDERSEN

Colonists on a new world face many threats: unknown terrain, dangerous weather, social stress. One of the greatest dangers a new colony can encounter is the alien biology of a life-bearing world. A landslide is a landslide, no matter what planet you are on, devastating but ultimately predictable and manageable. Life, however, is infinitely varied in its forms and patterns. Colonial researchers will take orders of magnitude longer to understand the biology of an alien world than they will to understand its physical features or even its climate.

Since alien biology is so varied and difficult to immediately comprehend, the life forms of a new world offer a rich source for adventure, as colonists struggle to cope with the surprises offered by a unique ecosystem and the inevitable unexpected interactions between alien creatures and the familiar organisms the colonists bring with them. This article presents four biological threats, all of which will require more than a quick application of high-energy weapons to solve.

These threats make a few assumptions that may affect how they're used in a campaign. First, it is taken as given that the colony is entirely – or at least mostly – human, with standard settlement patterns. If the colony is not human, or if they behave differently than normal humans, the threat level of the organisms may change. For example, a race that preferred low-density settlements in the middle of woodlands would have more problems with swarms and daphneia. Second, the colonists are assumed to be unable (or at least unwilling) to deploy unlimited technological resources. If colonists can apply military-grade weapons against common predators or advanced diagnostic and medical treatment technology at the first sign of anything unusual, then the threats will all be significantly reduced. Third, it presupposes that the colonists are settling blind, without significant previous observation of the ecosystem to draw on. Finally, the article makes certain biological assumptions that are shaky from a “hard science” perspective: All organisms involved have the

same biochemical basis as the colonists, enabling effective predation on them and their imported life forms, and cupids and daphneia have genetic codes similar enough that they can infect colonial organisms. If the colonists are drawn from several different species, the GM can choose to make some races less vulnerable to these threats.

The article also provides names for the organisms, but the GM should not feel bound by these, particularly since some of the names are a giveaway for the surprise! Let the colonists come up with their own monikers. If the players decline to name the species, or an NPC encounters them first, less revealing names can be chosen; cupids could be initially called “rose-flies,” for example.

CUPIDS

Cupids are small insectoids. They resemble Terran houseflies, although a close inspection will reveal that they have two pairs of wings instead of one, as well as other subtle differences that mark them as alien. They sport a bright pink abdomen that camouflages them against the wetland flowers that are their standard feeding ground through most of the year. Usually harmless to humans, cupids are herbivores that feed on nectar and pollen. Through the summer months, they reproduce sexually, laying eggs in pools of standing water. However, the arrival of spring begins the parasitic phase of their lifecycle, and the results can destroy human communities.

Cupids hibernate over the winter. Once the temperature has warmed enough for them to survive and flowers have begun to bloom, they emerge. Cupids are most visible to humans during the early part of the spring, since that is the only time they exhibit pestilent behavior. In the first six weeks of the season, cupids will bite any animals they can find. Cupid bites are irritating but not seriously painful, much like a mosquito bite. However, unlike mosquitoes, cupids are not biting to draw blood but rather to inject something into the victim.

What if there is quick communication with the homeworld, but it's limited to 140 characters a day? (Set up two Twitter accounts for “in-game” updates!)

Make *How Many* HT Rolls?

If the colonists spend time in the cupids' natural habitat in spring, they are likely to be bitten quite often. Rather than roll individually for each bite, which will quickly become tedious (and worse, give players a very strong idea of the threat and spoil the adventure), the GM can simply call for one HT+4 roll, or a HT-based Survival (Woodlands) roll, at the end of a day spent in cupid territory. Taking precautions to avoid more bites can give bonuses to this roll, while incautious actions that increase bite frequency apply penalties, as follows:

Appropriate insect countermeasures (personal insecticide spray, etc) gives +2. Alternatively, tailored insect countermeasures (specialized personal insecticide, etc.) give +4.

Wearing minimal clothing gives -2.*

Wearing standard hiking gear gives +0.*

Wearing protective clothing (veils, mosquito netting) gives +2.*

Wearing a totally sealed suit protects completely on an appropriate Environment Suit roll. If the skill roll is failed

(representing improperly closed seals, taking the helmet off at the wrong time), the suit gives +4.*

Traveling in areas or times of light cupid activity (edge of wetlands, night time) gives +0.*

Traveling in areas or times of moderate cupid activity (shallow wetlands, midday) gives -2.*

Traveling in areas or times of high cupid activity (deep wetlands, dawn or dusk) gives -4.*

* Choose only the worst applicable modifiers for clothing. Do the same for travel areas/times.

On any day where the total modifier to the HT roll is 0 or lower, the multiple bites will also cause the afflicted colonist to be *itchy* (-1 to DX, IQ, skill, and self-control rolls). While multiple bites by the same gender of cupid have no additional effect on the victim (outside of making him itchy), there's a 1 in 6 chance that one or more bites are from a different gender. The results of this can be deadly; see *Stages of the Gluttony Phase* (below) for details.

Every time someone is bitten by a cupid, it introduces a load of viruses into the victim's bloodstream (see *Make How Many HT Rolls?*, above, for details on resistance rolls). A Perception-based Naturalist or Biology roll allows someone about to be bitten to recognize the threat and attempt to shoo the cupid before it bites. Cupids can be swatted on a simple DX roll.

Cupid fever is also sexually transmissible. Anyone having unprotected sex with an infected person must make a HT roll, or also become infected. Other vectors for infection include tainted blood transfusion or improperly sterilized medical equipment.

Cupid fever can sweep through a colony, disrupting the community as sufferers become obsessed with sexual activity. Marriages will be broken, unplanned pregnancies will occur, and assaults will increase. If the disease all stems from a single cupid, the infection will eventually run its course, leaving only anger and recriminations in its wake.

If the victim fails the initial HT roll to resist, they are infected with cupid fever. Cupid fever's progress is measured in steps. Every week, the sufferer must make a HT roll. If the roll succeeds, the condition grows no worse. Three successes in a row, or a critical success causes the condition to retreat a step. Three successes in a row or a critical success at step one, or three critical successes in a row, at any point, cures the disease for that victim. A failure advances the condition by one step, while a critical failure advances it by two steps.

Stages of the Lechery Phase

The fever begins as a slightly elevated body temperature. At the second step, the sufferer gains the Lecherousness disadvantage, with a self-control number of 15. Each step after this one reduces the self-control number of the

Lecherousness disadvantage by one level, until a self-control number of 6 has been reached at step 5. If the sufferer already had Lecherousness, he instead immediately jumps to the infection step that corresponds to the initial self-control number of his Lecherousness; if successful HT rolls cause him to move back up the progression, he does so, but his default level of Lecherousness still applies.

Once a self-control number of 6 is reached, the next step of the disease, step six, inflicts Compulsive Sexual Activity (see box on p. 6), with a self-control number of 15. Each step after this, the self-control number again decreases by one stage. Once the self-control number for Compulsive Sexual Activity has decreased to 6, at step 10, there are no more steps; victims continue to suffer from the disadvantages at self-control 6 until they recover. Again, if the sufferer already had Compulsive Sexual Activity, he instead immediately jumps to the appropriate level of the progression, and successful HT rolls moves him back up the progression but leaves his original level of the disadvantage in place.

Stages of the Gluttony Phase

If someone is infected with cupid fever by male and female cupids, the disease changes character. Once the victim is injected with both "genders" of the disease, the next failed HT roll moves him out of the "lechery" phase and into the "gluttony" phase.

The first step inflicts Gluttony, with a self-control number of 15. Each step thereafter reduces the Gluttony self-control roll by one level. The Lecherousness and Compulsive Sexual Activity return to their normal pre-infection levels over the course of a week or two. Victims progress, recover, or stay the same on the steps of the gluttony phase as per the lechery phase.

Colonization without real-time FTL communication could conceive of "server ships."

Furthermore, preexisting Gluttony accelerates the infection the same as preexisting Lecherousness disadvantage (see p. 6)

Critical success or three normal successes on the first step of the gluttony phase cures him; he does not return to the lechery phase. If unrestrained and given sufficient food, victims of cupid fever in this phase will quickly begin to put on weight, gaining the Overweight or Fat disadvantages. When a victim reaches a self-control number of 6 on Gluttony at step four of the gluttony phase, the next step of the disease begins: the final phase.

In the "incubation" phase, the sufferer must make HT-2 rolls *daily*. On a failed roll, he takes 1d toxic damage. Appearance level also declines by one for every failed HT roll, as large cysts forming under the skin give the victim a lumpy, disfigured look. Dissecting the cysts will reveal immature cupids. If the victim dies while in this stage, the cysts burst open, and thousands of cupids emerge and fly off, ready to start the cycle anew. The disease does not have steps at this phase; successful HT rolls merely stave off damage. Three critical success rolls in a row, or six regular successes in a row cure the infection.

New Disadvantage

Compulsive Sexual Activity

-5 or -10 points*

You crave sex and get stressed when it is denied you. You do your best to insure that you always have a partner available for sexual activity. This differs from Lecherousness in that you are not compelled to make advances at every member of your preferred gender; monogamy is fine, so long as the sex is regular.

Make a self-control roll to stop yourself from overindulging in sex. A failed roll means lost FP from going short on sleep, or allowing sexual activity to distract you from an important task, such as guard duty. You have a -1 reaction if your predilections become known to prudish citizens and -4 if the social norm greatly despises carnal pursuits. Compulsive Sexual Activity is worth -5 points, or -10 points in puritanical settings.

Making It a Surprise

Cupids are especially threatening in the early days of a colony, before their parasitic nature is discovered. Colonist heroes can encounter the effects of cupid fever in two ways.

The party can be called on to investigate odd reports from settlements in cupid territory. Depending on how soon they get to an infected settlement, they can find the inhabitants totally engrossed in mindless sex and jealous violence, in a gluttonous feeding frenzy, or suffering from the pangs of the final stages of the disease. The party must restrain the infected from their self-destructive behavior while applying cures – or possibly while *creating* remedies!

The party or their close acquaintances can also be infected with cupid fever, either from a direct cupid bite or from unprotected sex with a sufferer. Those with Lecherousness are particularly at risk for the latter! If an acquaintance rather than a PC is infected first, the players are likely to take longer to determine that something is going wrong.

Cupid fever can be a subtle threat that develops over several sessions, as the infection slowly spreads among the party's acquaintances. Gradually, the increasingly uninhibited and promiscuous behavior reveals itself to the heroes as more than just a simple trend of romances.

Once the threat of cupids is revealed, the colonists will likely try to institute some policy of large-scale extermination. This will require Biology and Chemistry rolls to create appropriate insecticides, Area Knowledge rolls to identify likely breeding grounds, and Piloting and Gunner rolls to disperse the agents appropriately. Of course, more creative solutions (like genetically engineering tailored predators for the cupids or introducing hunter nanoswarms to eliminate them) are possible.

Note that including cupids in the campaign will necessarily introduce sexual themes. The GM should be certain that the players are willing to deal with these and that they will not make anyone uncomfortable. This is especially important when deciding whether or not to infect the heroes vs. NPCs.

DAPHNEIA

Daphneia is a species of plant: a low, thorny shrub that grows in dry, open areas. It is a hazard because of its ability to infect creatures with its genetic material and transform them into new daphneia plants.

Daphneia are an unremarkable brownish shade, with small but succulent leaves. Their thorns are their strongest defense; they are long and sharp, clinging to creatures that blunder into a patch of daphneia. Walking through a patch inflicts damage to the legs (1d-3 cut), unless a successful DX roll is made. A critically failed DX roll means the thorny stems trip up the hapless victim, who falls. This increases the damage to 1d-1 cut, inflicted on random hit locations rather than just the legs.

The daphneia's leaves are edible. In fact, most creatures find them very tasty. The leaves induce a mild euphoria when ingested, which lasts for an hour and has the potential to be addictive. Continued use of the leaves also increases the user's strength. For each week of regular consumption of the leaves, ST increases by 1, to a maximum of +4.

However, this boost can have a terrible cost. After each week of regular consumption of daphneia leaves, a creature must make a HT+4 roll. If the roll fails, the victim is also infected by the daphneia's DNA. Spores in the leaves enter the victim's bloodstream and begin to change its behavior and eventually its physical form. Once infected, a victim of a daphneia's spores must make a HT roll once a month. On a failure, the sufferer gains Bad Temper at a self-control number of 15. If they already had Bad Temper, the self-control roll grows one level worse.

Once Bad Temper reaches a self-control number of 9 or lower, failed rolls also add the disadvantages of Loner and Obsession (Promote daphneia growth), both with self-control numbers of 15 (or worsen them a level is already present).

A server ship transports vast computers containing every scrap of knowledge it can accumulate.

Each failed roll after that worsens the self-control number of those disadvantages by one level. Three successful HT rolls to resist the disease, or one critical success, fights off the spores and ends the infection. Abstaining from daphneia leaves for the entire month gives +2 to the HT roll to resist the infection.

Once a sufferer has failed six HT rolls to resist the infection, the next stage can potentially begin. The victim continues to make HT rolls monthly, with failures reducing self-control numbers as normal. However, any critically failed HT roll touches off the next phase, in addition to the normal effects.

In the second phase of the infection, the sufferer must make daily HT rolls. Each failed roll reduces DX and IQ by 1. When either stat falls to 0, the victim is frozen in place. The host's cells are rapidly converted to vegetable cells, the plant puts down roots, and the body of its host becomes a new daphneia.

Making It a Surprise

Given its ST-enhancing properties, daphneia abuse will continue to be an issue even after the eventual fate of a consumer is discovered. Once widespread human use of the plant declines, the most common threat will be livestock becoming addicted, violent, and solitary.

Colonists are most likely to abuse daphneia in the early days of the settlement, when the effects of the plant are not fully understood. The infection then becomes a slow problem, as one or more of the users gradually begins to change behavior. Other colonists will have to notice their shift in attitude, and deduce that it is caused by an external source rather than simply a change in personality. Even if the plant is identified as the reason for the personality changes, scientists may ascribe it to a steroid-like effect. If a colonist decides to examine daphneia closely, a Biology roll identifies the ST-enhancing effect, Biology-2 notes the behavior-altering properties, and a Biology-4 roll spots the parasitic infection.

Another hook is to have an NPC colonist who is important to the party secretly become a daphneia user. If he is already fairly solitary, it may be several weeks before the party notices his changing behavior patterns and reaches the correct conclusion – leading to a race against time to get to the stricken colonist before he becomes part of the landscape!

HIVE HAWKS

Hive hawks are a species of avian animal predators, with a society similar to social insects like bees or ants on Earth but on a larger scale. Hive hawks have four castes, each with a different form and role in the colony: queens, soldiers, workers, and berserkers. The first three are standard parts of the colony life, but berserkers only show up during special circumstances and can prove a shock to those who first encounter them. Berserkers only appear if the queen of a mature hive is killed, at which point the hive breaks up into warbands of berserkers and soldiers protecting new queens and searching for a new hive site.

Lifestyle

Hive hawks live in colonies. Most colonies have about 50 members, although particularly large ones can have up to four

times that. The colony is typically about 30% soldiers and 70% workers, with a single queen in the hive. Hive hawks are omnivorous, and the colony works together to keep all its members fed and cared for. The workers perform maintenance on the hive and forage for vegetation; they even engage in a limited form of agriculture, clearing unwanted plants and scattering the seeds of edible species. The soldiers hunt meat, patrol the colony's territory, and guard the hive itself. Usually, about a third of the soldiers are devoted to each duty at any given time. The queen, with the aid of workers, cares for the young of the hive.

Hive hawk workers are sterile females, while soldiers are male. Typically, half of a colony's soldiers are immigrants from other colonies, and they compete with each other to become the queen's preferred mate. Competitions take the form of plumage displays, mock combats, and gifts presented to the queen. Once the queen has selected a mate, she will continue to give birth to hive hawks for the rest of her life, which averages 15 years for a healthy colony. Hive hawks are typically born in litters of six to 10, every four months. Litters are usually about 40% soldiers and 60% workers, to compensate for soldiers' higher mortality. In early spring, a queen also gives birth to a few litters that include new queens.

Every spring, a healthy colony will send out one or two "colonizing parties," consisting of a yearling queen with a retinue of five or six soldiers and three or four workers. These parties attempt to find a new site to form a hive, near their parent colony but not overlapping its territory. Most are unsuccessful, their queen dying through predation or misadventure. If this happens, the workers simply wander off to die while the soldiers try to attach themselves to another, or their original, colony. This is the primary method that soldiers enter other colonies.

Berserker gang

If the queen of a mature colony (over two years old) is killed, however, something different happens. The soldiers cluster close to the hive and defend it stringently, only going on short hunting trips. Meanwhile, the workers within begin to gorge themselves on the colony's stored food. All the workers begin to grow. Approximately one-sixth of the workers develop faster (usually those in the best physical condition), becoming fertile queens. Once they become queens, they begin emitting pheromones that change the development of their slower sisters. The remaining workers morph into berserker-caste hive hawks, and the exodus begins. The colony splits into groups around the new queens, each one defended by several soldiers and berserkers. The berserkers and queens carry whatever foodstores remain from the old location, and the bands split up, looking for new sites for hives.

While searching for a new home, the soldiers and berserkers guard the queen at all costs. The soldiers range out from the party as scouts and hunters, searching for new hive locations and catching prey to feed the group. The berserkers stay near the queen; if anything threatens her, the berserkers quickly earn their name. They charge into combat with terrifying ferocity, perfectly willing to trade their own lives for the queen's. Soldiers are more cautious but no less determined that the colony's future be preserved.

A server ship would be something like a flying version of Google's server farms.

If a band finds a new site for a hive, they quickly set up shop, driving out or killing any previous inhabitants. The soldiers set up a guard-and-hunting pattern, while the berserkers return to a more worker-like pattern of foraging. However, the berserkers are careful to stay close to the hive during this crucial early period, and any attack on the hive or queen will bring their wrath. The queen, meanwhile, begins producing litters very quickly, usually only a month apart; these litters are larger than usual as well, with 10 to 15 infants per litter. A new colony can grow to nearly mature size within a year, even with heavy predation. At this point, the berserkers tend to wander away from the hive to die, their purpose expired. However, they can still prove dangerous to those they encounter, since they retain their bad temper and willingness to attack anything moving.

Soaring

This is a new modifier for Flight.

Soaring

+10%

This enhancement allows you to fly effortlessly. While using this enhancement, you can fly no faster than 50% of your normal maximum flight speed. However, you *never* lose FP for flying in this manner – not even for flying long distances (see *Abilities and Exertion*, p. 159 of *GURPS Powers*). In fact, soaring is so easy that it does not count as effort at all. While flying, you can recover FP, heal, or even *sleep* on the wing.

The Hive

A hive hawk colony's home is typically built in a pre-existing structure. Hive hawks prefer sites on high ground, with defensible approaches and good sight lines. Caves, dense stands of trees, and similar natural foundations are preferred. Workers secrete a sticky resin that quickly dries to the strength of concrete, which they combine with plant matter and piled stones to create defenses and extend the size of the hive.

The structure usually has a large central chamber for the queen, surrounded by a maze of narrow passages interspersed with smaller chambers for stored food and dens for the other colony members. The hive usually has two or three entrances, and there is always more than one way for the queen to leave the central chamber if she is threatened. The passages contain numerous places for the hive's guards to ambush invaders.

Human Interaction

Hive hawks are unlikely to directly assault humans on first contact. However, they will probably make a nuisance of themselves quickly. Soldiers will attack human livestock, and workers will view human crops as buffets. In the spring, colonizing

parties from nearby hives will encroach on human settlements; hive hawks will see buildings as ideal places to set up a new home. Eventually, the humans will probably get fed up. Someone will have the bright idea of attacking the hive and killing the queen, assuming that the hive will act like a colonizing party and splinter once the queen dies.

Assaulting the hive itself should prove no easy task. The walls are sturdy enough to stand up to heavy weapons fire, so the only options are to either blow the hive up entirely – which colonial leaders are likely to view as a waste of munitions – or to send a team to fight their way in. The soldiers and the workers will bitterly defend the queen, and they have a home field advantage. Despite this, the queen will probably die since the hive hawks are merely clever animals. Human ingenuity will carry the day.

After that, the real problems will begin. The colony will have a week or so of peace. Then, parties of soldiers and berserkers will show up on the fringes of the colony, aggressively attacking anyone in their path and even more determined than a colonizing party to find a new hive area. Outlying settlements may be lost entirely before the colonists understand the true nature of the threat.

Physiology

All hive hawks share a basic body structure. They are shaped like large birds, the size of an eagle or a condor. A hive hawk has six limbs: a manipulating pair in front, followed by wings, and a pair of locomotive legs at the rear. Each limb has three segments, compared to the standard Terran vertebrate pattern of two. The back legs have three digits, used for walking and perching on the ground. The front limbs' four digits are adapted for grasping and manipulating; they include a "thumb" with limited opposability. Most of the body is feathered, although the face and the limbs are bare. The face itself is birdlike, with the nasal area pushed forward in a beaklike protuberance. However, the "beak" is simply hardened flesh, and there is no cutting edge. Instead, hive hawks have a mouthful of teeth, used for eating both meat and vegetation. The eyes are large and face forward, giving hive hawks excellent binocular vision.

Each caste has specific variations within this basic plan. Queens are about 1.5 yards long, with 12-foot wingspans that allow them to fly in short bursts. Their strong rear legs carry them about at a quick trot or a sprint if necessary, while their front hands are sensitive and ideal for caring for the hive's infants. Their plumage is brilliantly multi-colored. Queens try to avoid combat if at all possible, but if cornered, they bite.

Soldiers are about a yard long and have 11-foot wingspans. Each can extend the last joint of its wing out to allow itself to soar long distances, or fold it back to create a shorter, more maneuverable profile. Their back legs are thinner than the queens', good for sprinting but not for carrying huge weight, while their front hands have wicked claws. They have dull bluish-gray plumage for camouflage against ground or sky, but they can lift their feathers to reveal bright red under-down. In combat, soldiers usually attack with their claws, although they can also bite.

The server ship from an enemy culture could be a phenomenal prize for any war-minded group. Imagine getting to access all of what that civilization knows!

Workers are the smallest caste, only 0.75 yards long. Their wingspan is only five feet. They are fairly strong fliers, capable of carrying heavy loads, but they are neither fast nor maneuverable and cannot stay aloft for the long periods that soldiers can. Workers' back legs are sturdy, able to walk long distances while burdened, and their front limbs are strong and tough, allowing them to perform rough tasks. Their feathers are drab brown, excellent for blending into the woodlands. Like queens, workers prefer to avoid combat if possible, but they will fight as a last line of defense for the hive, using their bite.

Berserkers are the largest, strongest caste. They are fully two yards long, and heavily muscled. Their wings are totally useless for flying; they instead use them as balance for the terrifying sprints that the berserker's large back legs are capable of producing, and as powerful strikers in close combat. Their front limbs have huge ripping claws, and their teeth are vicious knives, adapted to tear and kill. Berserkers have brilliant plumage, similar to queens, warning potential predators of the danger of attacking. In a fight, berserkers unleash everything at their disposal: slashing with the front claws, biting, and bludgeoning with their middle limbs.

Hive Hawk Queen

ST: 10 **HP:** 10 **Speed:** 5.00
DX: 10 **Will:** 10 **Move:** 5 (Ground)
IQ: 4 **Per:** 10 **Weight:** 80 lbs.
HT: 10 **FP:** 10 **SM:** -1
Dodge: 8 **Parry:** 8 **DR:** 1

Bite (10): 1d-3 cutting damage. Reach C.

Traits: Enhanced Move 1 (Air Speed 20); Enhanced Move 1 (Ground Speed 10); Flight (Winged; Air Move 10); Quadruped; Sharp Teeth; Wild Animal.

Hive Hawk Berserker

ST: 14 **HP:** 14 **Speed:** 5.50
DX: 11 **Will:** 12 **Move:** 15 (Ground)
IQ: 3 **Per:** 11 **Weight:** 300 lbs.
HT: 11 **FP:** 11 **SM:** 0
Dodge: 9 **Parry:** 11 **DR:** 1

Fangs (14): 1d+1 impaling damage. Reach C.

Crushing Middle Limbs (14): 1d+2 crushing damage. Reach C.

Talons (14): 1d+1 cutting or impaling damage. Reach C.

Traits: Acute Taste and Smell 2; Combat Reflexes; Crushing Striker (Middle limbs); Discriminatory Smell; Enhanced Move 1.5 (Ground Speed 15); Fangs; High Pain Threshold; Quadruped; Striking ST +2 (Fangs and front limbs only); Talons (Front limbs only); Wild Animal.

Skills: Brawling-14.

Other Surprises

Here are some suggestions for altering the basic hive hawks.

The Hive Mind

In a setting with psionics, hive hawks could have minor psychic powers. The queen can form these into a gestalt to defend the hive when threatened or to help a berserker party overcome resistance when fighting for a new hive site. Telekinesis or bolts of mental energy would give attacking colonists a nasty shock.

Hive or Town?

Hive hawks could be more intelligent than they initially appear. They are a good candidate for sapience: fairly large, cooperative, tactically cunning, and even practice primitive agriculture. Humans could initially treat them as pests, only to discover larger hives showing signs of more intelligent behavior, like tool use, art, or advanced communication. The colonists would have to deal with the question of whether or not they have the right to kill intelligent beings on their own homeworld.

Hive Hawk Soldier

ST: 8 **HP:** 8 **Speed:** 5.75
DX: 12 **Will:** 10 **Move:** 12 (Air/Ground)
IQ: 4 **Per:** 11 **Weight:** 30 lbs.
HT: 11 **FP:** 11 **SM:** -2
Dodge: 9 **Parry:** 11 **DR:** 1

Bite (14): 1d-3 cutting damage. Reach C.

Claws (14): Front limbs only. 1d-1 cutting damage. Reach C.

Middle Limbs (14): 1d-2 crushing damage. Reach C.

Traits: Acute Vision 2; Combat Reflexes; Enhanced Move 1.5 (Air Speed 36); Enhanced Move 1 (Ground Speed 12); Flight (Winged with Soaring; Air Move 12); Quadruped; Sharp Claws (Front limbs only); Sharp Teeth; Striking ST +4 (Front limbs only); Weak Crushing Striker (Middle limbs); Wild Animal.

Skills: Aerobatics-14; Brawling-14; Stealth-12; Tracking-12.

Hive Hawk Worker

ST: 5 **HP:** 5 **Speed:** 5.25
DX: 10 **Will:** 9 **Move:** 4 (Ground)
IQ: 3 **Per:** 10 **Weight:** 15 lbs.
HT: 11 **FP:** 11 **SM:** -3
Dodge: 8 **Parry:** 8 **DR:** 1

Bite (10): 1d-5 cutting damage. Reach C.

Middle Limbs (10): 1d-4 crushing damage. Reach C.

Traits: Enhanced Move 0.5 (Air Speed 15); Flight (Winged; Air Move 10); Lifting ST+2; Quadruped; Sharp Teeth; Weak Crushing Striker (Middle limbs); Wild Animal.

Skills: Stealth-12.

Server ships could be one-time vessels or receive periodic updates while in transit.

Making It a Surprise

For maximum impact, the berserker element of hive hawk behavior shouldn't become obvious until after the queen of a hive near a human settlement is killed. Fortunately, this should not be difficult. Berserkers do not manifest unless a mature queen is killed without an heir, and this only happens rarely; the hive is typically too well-guarded for predators to have much luck. Only genetic sequencing and using the resulting data to predict behavior is likely to reveal the secret prematurely, and busy colonists are unlikely at best to devote that kind of effort to a pest species. The colonists should base their assumptions on the behavior of a hive on the colonizing parties, which disintegrate once the young queen is killed.

SWARMERS

Swarmers are solitary ambush predators that hunt by releasing a swarm of their own immature, flying offspring, which attack with vicious bites and poison. Swarmers can "upload" their experiences to their swarm, which allows for a dangerously high learning curve when dealing with new threats . . . and the potential for personal enmity against humans.

A swarmer resembles a Terran swine, about three yards from snout to rear. It has a muscular, heavy body on three pairs of short, powerful legs, ideal for charging through the underbrush of its forest environment. A swarmer's muzzle resembles a wolf's, with long canines for gripping prey and cutting off flesh from carcasses. The body is covered by short, coarse brown fur. A swarmer's most distinctive feature is the large hump on its back, between the rear two pairs of legs. This hump has a bony exterior (DR 5), with holes in a honeycomb pattern penetrating into the interior. Within these lurk the immature offspring of the swarmer, the nymphs, waiting to be released.

A nymph bears little resemblance to a full-grown swarmer. It is approximately two inches long and bald. Its limbs are radically different from the adult form. The back legs are large springs, like a grasshopper's, designed to launch the nymph long distances. The middle pair supports vanes of skin, ideal for gliding. The front legs are viciously hooked, in order to hold onto prey. A nymph's mouth is likewise simplified. Rather than the complex dentition of a mature swarmer, the nymph's mouth is a simply a set of jagged teeth, adapted to inflict ragged wounds.

Lifestyle

Swarmers are carnivores, hunting whatever they can catch. Their typical tactic is to hide in dense underbrush until prey wanders by. When a potential meal comes within a few yards, the swarmer releases a swarm of nymphs, which move to attack the target immediately. A swarm usually contains 10 to 14 offspring, approximately half of the swarmer's full complement. A nymph swarm flies at Move 5 and does 1d cutting damage per turn. Armor protects with its normal DR, but nymphs are adept at wiggling under protection. Every turn, reduce effective DR against the swarm's attacks by 1, unless the armor is sealed. Nymphs have poisonous saliva that does 1 point of toxic damage as a follow-up to the swarm's attack,

every 10 minutes for an hour after the initial damage (a HT-4 roll can stop one point of damage, but does not end the cycle). The swarm disperses when it takes 6 points of damage.

Once the swarm has seriously injured its prey, the swarmer recalls its offspring, charges from its hiding place, and finishes the job, biting and trampling the victim with its hooves. If the prey manages to escape the swarm before the swarmer can attack, the parent recalls the nymphs and tracks the victim, counting on the poison to bring it down. The nymphs do not eat directly, instead gaining nutrients filtered through their parent's digestive system and delivered to them.

Swarmers are solitary most of the year, except for their offspring. They mate once a year, in the autumn. They are hermaphrodites; mating involves exchanging genetic material, which each swarmer then stores and uses to fertilize new nymphs as necessary.

Nymphs develop deep in the core of the hump on the swarmer's back and are slowly moved outward as they grow. A proto-nymph's development can be suspended near the end of its initial growth cycle, then restarted as needed. This allows a swarmer to replace dead nymphs in a matter of hours as the undeveloped proto-nymphs are activated and their remaining growth rapidly completes.

Just after mating, a swarmer releases the remainder of its mature nymphs. The nymphs immediately begin growing. They stay together as a swarm for the first weeks of independence, hunting and gorging on whatever meat they find. By the end of autumn, those that survive have grown to be two feet long, have lost the flaps of skin that allow them to fly, and are otherwise beginning to resemble mature swarmers. At that point, the swarm separates, and the immature swarmers spend the winter hunting whatever game they can locate. Their growth continues through the winter and the following year. The survivors mate for the first time the next fall and develop their own nymph swarms at that point.

Memory

Swarmers have a remarkable continuity of racial knowledge. They have the ability to store their memories in a compressed chemical form and pass them along to their descendants. It takes between an hour and a day for a memory of a given event to be implanted in the nymphs a swarmer is carrying. The more emotionally powerful the memory is, the quicker it is transferred.

This racial memory allows swarmers to draw not only on their own experience, but that of their forbearers as well. As a result, they are more intelligent than humans used to terrestrial animals behavior might believe. A swarmer may not be particularly good at coming up with new approaches, but they will not be fooled by a trap that caught one of their ancestors, and they have a large body of solutions that did work in the past.

Not all swarmer memories are "unpacked" immediately once they are transferred. All swarmers have a large store of memories only archived in chemical form. An event similar to one of these stored memories can "remind" the swarmer of what its ancestor experienced, and the memory will be unlocked and returned to full consciousness within an hour.

Colonies are about limitations, and restrictions the heroes need to work around is a classic sci-fi trope.

However, swarmers have most of the memories of their immediate parent in full memory, particularly any memories related to serious threats or injuries.

Swarmers instinctively try to preserve this racial memory. A swarmer's first response to serious damage is always a panic run. They charge through the underbrush as fast as they can, trying to get as far away from the source of injury as possible. Once out of immediate danger, the swarmer tries to find a secluded place to hide and lick its wounds. If it recovers from the damage, it goes on with its life. However, if its wounds prove mortal, it is usually able to give the memories of its last battle to its nymphs. Once the parent swarmer dies, the nymphs begin to mature, using the corpse of their parent as their first meal.

Swarmers also have an impulse for revenge. If a swarmer recognizes a creature that hurt or killed its parent, it will often try to preemptively destroy the threat – and its ability to learn from its parent's mistakes makes a revenge-driven swarmer a dangerous foe. The same trick will almost never work twice on a swarmer, and if its enemy fails to kill it outright, the swarmer's descendants will eventually be back to carry on the feud.

Human Interaction

Swarmers will be regarded as just another alien predator by humans, at least initially. They keep to the wooded underbrush of their natural habitat, so they are unlikely to prey heavily on domesticated livestock. The only significant contact is likely to be with outdoorsmen and those in charge of scouting the wilderness.

Swarmers are not much of a threat to a prepared human, at least to begin with. A swarmer will be easily frightened off by a solid hit from a hunting weapon, and advanced medicine will be able to deal with the nymphs' toxin without too much trouble. However, a swarmer that encounters a gun once will recognize it as a threat thereafter, and so will its descendants. Humans who originally classified swarmers as big but dumb will find themselves facing more and more experienced individuals, capable of ambushing someone whose weapon isn't handy, staying out of gunshot range while the swarm deals with a foe, or avoiding traps that caught the first few. And swarmers will find human tissue perfectly edible. A swarmer that learns to eat humans will likely not stop, and its descendants will have similar behavior.

Swarmer

ST: 15	HP: 15	Speed: 6.50
DX: 12	Will: 12	Move: 8
IQ: 4	Per: 12	Weight: 400 lbs.
HT: 14	FP: 14	SM: +1
Dodge: 10	Parry: N/A	DR: 1

Bite (14): 1d+2 cutting damage. Reach C.

Hooves (14): 1d+2 crushing damage. Reach C.

Traits: Combat Reflexes; Discriminatory Smell; Enhanced Move 1 (Ground Speed 16); High Pain Threshold; Hooves (+1 DR to feet only); Quadruped; Racial Memory (Special) Sharp Teeth; Striking ST +2 (Teeth); Wild Animal.

Skills: Brawling-14.

Making It a Surprise

Swarmers' primary surprise value comes from two sources: how fast they learn, and the atypical (for people used to Earth animals, anyway) revenge-seeking behavior. Swarmers will not pose a threat to a colony as a whole, since they are unlikely to attack livestock kept outside their natural habitat. However, a swarmer that develops man-eating behavior can present a deadly challenge to a party charged with keeping colonists safe when working in the wilderness. Such a swarmer will not be caught in the same trap more than once, and if it escapes instant destruction, its descendants will return, both to continue its man-eating behavior, and to seek personal revenge on its killers.

Other Surprises

You Are What You Eat

In a less hard-science setting, swarmers may not be limited to gaining memories only from their parents. They could absorb chemical memories from *any* species and learn their secrets in the process. A swarmer that eats a member of a herd of livestock knows where the herd eats, sleeps, what routes it takes to get to places, and when humans are likely to be watching the herd. And a swarmer that eats humans may start to become *truly* intelligent . . .

A Thousand Eyes

Memory transfer from a mature swarmer to its nymphs does not have to be one-way. A swarmer may be able to absorb memories of what a nymph has experienced and act accordingly. If this is the case, a swarmer will have some fraction of its swarm constantly released, scouting the area for it to spot likely ambush sites, sources of danger, and defensible hidey-holes. Any attack on the swarmer would have to move faster than the nymphs could return and upload their memories, or the adult swarmer would be forewarned.

A Little Knowledge

Swarmers become much more dangerous if they can share knowledge outside their bloodline. Swarmers could exchange chemical memories, either recent or their entire archive when they encounter one another. Information about human tactics and equipment could spread through the entire race in this manner.

ABOUT THE AUTHOR

Kelly Pedersen lives and works in Saskatoon, Canada, where he continues to search for a job that will both pay for gaming books and allow him enough free time to participate in gaming sessions. He feels that writing for *Pyramid* is a good step toward fulfilling both of these goals. He enjoys a wide range of game systems and styles, but he remains committed to annoying his friends by pointing out, "You know, we could do this with *GURPS*." In his free time, he bothers his cat.

WHEN THE DARK EATS YOU

BY J. EDWARD TREMLETT

Imagine there's a 10-person, 10-year expedition to survey and prepare a planet for colonization. Two years into the voyage, the chief mechanic – the loud, funny guy everyone loved – got steadily grumpy, then strangely quiet, and then seriously sabotaged the engines. Suddenly he's demanding they turn around go home, *now*, or he'll let the malfunction he created build until the ship explodes. Threatening him hasn't helped, killing him would accomplish nothing, and his assistant can't even see the damage.

What can they do? What *should* they have done? Where was the ship's psychologist? Did they even have one? Can the captain restore order and preserve the mission, or is it too late? And if they do get through this, what do they do with the guy: Try to cure him, strap him to his bunk for the next eight years, or space him?

Insanity in deep space is a familiar threat in science fiction movies and games, but encounters with the unknown and the alien aren't the only causes. Personality disintegration is a real concern on lengthy missions; this makes it something to consider while planning a journey and a good source of thrills and conflict in game play. What do the heroes do when the captain decides they'd all be better off dead? And what will the rest of the crew do if one of the characters starts seeing things?

WHAT WE CAN GUESS

What can cause people to become mentally unstable on long-term, deep-space missions? The short answer is "everything," as there are any number of stressors that a crew will encounter. And any stressor, if not solved or confronted, could erode someone's psychological well-being given enough time.

Stressors common to such a setting could include: a failure to sleep properly; too heavy a workload (or too light of one); poor social interaction; interpersonal conflicts; a lack of privacy and personal space; a dearth of recreational activities to stimulate the mind and encourage positive social interaction with other members of the crew; and the boredom of doing the same thing every day for years at a time.

Another obvious stressor in long-term spaceflight is creeping claustrophobia. A spaceship's personal space is limited by cargo and fuel considerations, plus how much power can

be given to life support to permit areas on a spaceship to be habitable. Thus there is only so far one can move, and only so many places one can get some privacy. Unlike a submarine or an Antarctic base, there exists no chance on a deep-space craft to go outside for some "air" during the journey. People might not start the voyage with claustrophobia, but by its end, they might start developing it. Some people might not make it halfway to the destination without starting to crack.

On the other side of the spectrum is a growing sense of agoraphobia. Deep space is as wide and open as you can get, and there's no real control to be had over anything that goes on outside of the ship. People may eventually have panic attacks just looking out the window pondering the distances involved, and sufferers could shut themselves in their quarters if given a chance.

There is also interpersonal separation to consider. As the crew gets further from friends and loved ones, the ability to talk directly with them may decrease, and they may start to feel increasingly isolated. They may still be able to communicate with people back home, but signal lag will turn it into back and forth "letters" rather than genuine communication. While colonists may have people to interact with in person, they will be with the same few people day after day for years. Sooner or later, the novelty starts to wear off, and those same few people may get too close and too familiar.

A stressor unique to outer-space missions could be a lack of normal light and dark cycles, which can be essential to proper sleep. Depending on the surrounding space, the ship could be slowly rotated to simulate this; otherwise, it could have its lighting dimmed at appropriate times. But for some, only real daytime and nighttime will do, which would require them to take special measures, such as consuming vitamins to replace what's normally gained through sunlight or spending a half hour every day under special lamps.

There are also the small eccentricities of life onboard ship that can, when added to other frustrating factors, cause problems. The food may be the same recycled, tasteless glop over and over, day after day. The ship might vibrate ever so slightly, creating high-pitched whines just out of range of human hearing but close enough to bedevil a sensitive crew member. Certain things might keep breaking no matter what's done to fix them: the exercycle, the toilet, the coffee maker.

In cramped quarters, colonists can use compact entertainment that has multiple uses.

And then there's the worst kind of stressor: the omnipresent danger of being in deep space, which is both hazardous and merciless. The ship is surrounded by deadly vacuum and radiation, and too far out for anyone to help. Mistakes while navigating could burn their fuel, causing the colonists to go too far off-course to return and resulting in their deaths. If they suffer a bad enough malfunction, something irreplaceable could break or run out, resulting in their deaths. A collision with something small and fast could pierce the hull in a critical spot, resulting in their deaths.

Anything could go wrong, anyone could make a mistake, and the crew could all die before they know what's happened. Every space explorer has to keep that fact somewhere in their thoughts, or they might get careless. But some keep it too close to the top, and it preys on them, becoming a constant source of worry, fear, and nightmares.

WHAT WE DON'T KNOW (YET)

Those are the stressors *can* be guessed. But deep space exploration and colonization will put human explorers in contact with strange, new situations that have no earthly analog, and these could prove detrimental to mental well-being. Worse, people may not be able to predict or foresee any of them, which could spell doom for early space pioneers.

The possibility of suspended animation presents a number of questions. Hopefully the process would have been tested several times and proven safe before equipping a ship with sleeper units. However, numerous things could go wrong with the technology: Maybe it's only safe to sleep up to a certain number of years, or maybe the chance of mental damage increases every time someone embarks on a new sleep. There's also the possibility that some people's brains just can't handle being asleep for that long, and personality disintegration will begin in their dreams.

What if the engines prove inimical to the human mind? New, somewhat-proven science might expose the crew to maddening waves of sensation or broken bio-chemicals. Trips involving warp space, light speed, or tesseract might break down the barriers of reality, taking the passengers somewhere mere mortals have no place being.

There's also a chance that some unknown substance or force could play havoc with the human mind. Strange radiation could foster tumor growth or cause mutations in otherwise-harmless mold that proves maddening, then fatal. Overlapping fields of cosmic force could scramble the senses

Space Madness!

Many things could strike in mid-journey, or be exacerbated by time in space. Here are some other, dramatic conditions, well-suited for heroes to deal with, or develop, on a lengthy space mission.

Depression: Day in, day out, forward and upward, what's the point? This causes poor sleep, suicidal thoughts, slow reaction time, and possible hallucinations. Yelling at depressed people to do their jobs may just make it worse.

Megalomania: A crew member becomes convinced that his is the only opinion that matters, and everyone else should shut up and obey. Stereotypically common among captains and head scientists, but it could also strike engineers, pilots, technicians, and those along for the ride.

Paranoid Schizophrenia: Likely to result when someone has his mind blasted by trauma, the crew member becomes convinced people are plotting against him. Visual and auditory hallucinations confirm the delusions, and he may become withdrawn, subject to weird tics and outbursts.

Phobias: Apeirophobia, fear of infinity. Astrophobia, fear of stars. Cenophobia, fear of a void. Cometophobia, fear of comets. Meteorophobia, fear of meteors (not so irrational a fear!). Noctiphobia, fear of night. Nyctophobia, fear of darkness.

Shared Paranoid Disorder: One person sees it, and then everyone else does, too, resulting in contagious hallucinations and feelings of persecution (with or without just cause). This is always fun when the captain's trying to regain order.

Somatization: Like hypochondria, but the patient isn't convinced the psychosomatic ills are the result of a particular condition. He has no idea what could be wrong, and the doctor can't find anything wrong, and yet the pains are "there." This affliction ties up the doctor's time, hobbles the patient, and makes other people wonder if they aren't sick with something, too.

Survivor Guilt: Some people don't take others' deaths well. They wonder why *they* didn't die instead of the victims. This can lead to social withdrawal, depression, and excessive worry of being the next to go.

or create time distortions, resulting in people to see "ghosts," "aliens," or other hallucinations. Extended periods in space could erode the body's ability to regulate brain chemistry, causing mental problems in otherwise healthy crew and requiring constant medication to overcome.

PREVENTION ON THE GROUND

While everything that could go wrong on a lengthy deep-space expedition cannot be accurately predicted, experience has taught people much about who would be best suited to go on such a journey.

In the 1960s, NASA determined that the best candidates for spaceflight were intelligent, emotionally mature, and non-impulsive, with a high sense of self-esteem. They should be independent workers yet very capable of becoming a full, cooperative member of a group. They also should be realistic thinkers, able to evenhandedly evaluate a mission, its current risks and status, and their personal role within it.

If energy is plentiful, video games/computers offer the largest number of options for entertainment; if not, a deck of cards is the best choice.

A long-term spaceflight analog program conducted in Antarctica in the late 1990s affirmed these findings. They also discovered that those best suited to long stints in deep freeze were those who were not extroverts, didn't require large levels of affection from others, and not subject to boredom. Ideal candidates should also have high optimism and a desire to see the mission succeed, but not have high needs for personal achievement, neatness, or expectations of others' efficiency. Military service was also a positive predictor of a well-qualified candidate.

What that all means, essentially, is that candidates for long-term spaceflight should be mostly self-contained individuals whose self-esteem is such that they can look after themselves emotionally, and not be dependent on the affirmations and affections of others. They should be driven to see the mission succeed, but not place too much weight on their own personal success within the mission (or be bogged down by others' lack of progress toward it). They should be used to privation, close quarters, and a relative lack of privacy, and they should also have a high sense of responsibility and duty, and an understanding of command structure and their place within it. Finally, and perhaps most importantly, they should be able to resist boredom, able to find interest in each day and make their own fun.



Of course, just because the people on the ground are applying criteria to a potential crew doesn't mean every person on board the ship is going to an exemplar of these qualities. Sometimes mistakes are made, and sometimes people do a really good job of fooling themselves and their evaluators. Occasionally, people are forced into accepting a mission because they're the only ones who can do the required tasks, or they essentially force their way on board for personal or professional reasons.

Sometimes people just change when they're actually on the mission, or when faced with too much stress within it. The question, then, becomes how to keep those changes from becoming detrimental to the person and the mission.

DEALING WITH IT IN THE AIR

Once the crew has been picked and trained and the mission goes forward, precautions will have to be taken to ensure things stay on an even keel throughout the voyage. Physical, social, and psychiatric factors must be considered and implemented. If things go seriously wrong, those in charge will have to take measures to deal with members of the crew who have gone around the bend.

The physical and social factors may or may not be anything the crew has control over; these factors will have to be either changed or worked around accordingly. Space constraints, the hazards of working within hard vacuum, and the need to deal with the same people every day for years are elements that probably cannot be changed. However, food quality, privacy issues, and how the crew interacts with one another are things that probably could be addressed. For example, schedules can

be adjusted to get people who aren't working well together on opposite shifts, thus smoothing tensions.

Logistically, it is obvious to have the ship's medical doctor be a psychiatrist as well. If space permits, having a dedicated ship's psychiatrist along with a trained doctor would be an ideal situation; a second opinion in a serious case would be a good thing to have, and if something happened to one person, the other could take over.

It would also be a good idea to have periodic psychiatric interviews with all crew members along with their physical check-ups, to try and detect developing problems before they explode into emergencies. Having people sit down for more regular, proper psychiatric interviews might also be helpful, but might be seen as "headshrinking" by those who distrust psychiatry, becoming a cause of resentment and stress. In theory, potential crew members who harbor such feelings should be screened out, but people might change their feelings as the mission goes on or develop an unfavorable view of the ship's psychiatrist or his methods. Allowing the crew to have another viewpoint or a second opinion is another good reason to have the medical doctor also be a psychiatrist.

Alternatively, crew members might need to approach the psychiatrist on their own initiative, unless the commander thinks the individual is acting out of the ordinary. This could also create problems, though, as a visit to the psychiatrist might be seen as punishment, adding a layer of resentment to the psychiatrist-patient dynamic. The psychiatrist could be (or become) pro-active, either suggesting or mandating talks with those who are acting oddly; however, that could lead to resentment against the psychiatrist as well.

If colonists are superstitious (or bored), they could come up with a wholly new astrology. Remember: The constellations are all different!

Slipping Through the Cracks

There's also the situation where people didn't *intend* to be on the ship in the first place. What if the colony ship picks up refugees or victims on its way to the unknown? What if a global disaster forces ordinary people to commandeer a space vessel and look for a new planet? What if people get trapped on board when the ship warps off, and there's no turning back?

Such people are more likely to suffer from mental degradation or full-blown insanity than carefully picked crew. If they're trained and integrated into the crew, the new sense of purpose that gives them might be enough to keep them sane throughout the rest of the voyage, and maybe they'll even fare better than some of the "proper"

crew. However, if they feel like they're being press-ganged into service, they might harbor a resentment that will last for years.

Another consideration is if the journey turns multi-generational. The original explorers might have been made from hardy, self-denying stuff, but will their children be cast from the same mold? What will they do if the commander's child turns out to be a cowardly extrovert who doesn't want to do anything at all? What happens if some of the grandchildren decide the mission is pointless and want to return to the homeworld, but can't convince the others or override the navigational controls? Measures will have to be in place to deal with these eventualities, too.

The psychiatrist himself will probably have to be the "odd man out" during the voyage; getting too close to the rest of the crew might impair his ability to properly diagnose problems. He will have to constantly watch for changes in behavior and determine if growing eccentricities are just a normal reaction to extraordinary circumstances or a sign of mental illness. He will also have to be empowered to force crew members, including the captain, to stand down and submit to treatment in the event they are unable to fulfill their duties due to psychological impairment.

Treatment is another problematic factor: Small tics and disorders could be seen to with regular treatment, but what do you do if someone becomes dangerously violent, self-destructive, or severely anti-social? Giving sedatives to people who are having a violent breakdown solves immediate problems, and people who remain violent could be strapped to their bunk or locked in their cabin. But if the dangerous condition continues on for some time, and verbal and pharmacological treatment goes nowhere, the safety of the mission may have to trump other concerns. Lobotomies or chemical comas could be employed if putting people into a hibernation unit isn't an option. If they turn homicidal or try to blow up the ship, there are always more permanent solutions, though one would hope that would be the drastic, final resort, if only for crew morale.

There's also the question of psychiatric medicines and their shelf life. Hopefully the ship would have the ability to manufacture more or recycle them. But if not, there exists the worry of running out of psychiatric drugs five years into the mission. Hopefully the psychiatrist is not a hapless pill-roller and also knows of drug-free therapies.

The ultimate question is: Can the mission continue if a key member of the crew is stricken with mental illness? Captains can be replaced by subordinates, specializations can be trained and doubled-up, and hopefully everyone knows how to pilot the ship. But there is a possibility that, due to crew death or insanity, a certain crucial specialization will vanish due to someone going insane.

If there is no short-term cure for serious mental illness that has struck a key member of the mission, the crew will have to decide whether to continue, change the mission, or turn back in defeat. Of course, there's a chance another ship might rendezvous with them with renewed supplies and replacement personnel. But they might be so far out by the time the problem happens that it would be just as well to go back, learn from the mistake, and start over at some other date.

Pulling the plug on such an endeavor should never be done lightly, as it could all but destroy the morale of the crew, almost ensuring a gloomy, nonproductive trip home. But if there's no real option and the survival of the crew is paramount, it may be the only rational thing to do when faced with the consequences of others' irrationality.



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With massive thanks to Craig Levin of NASA's Glennan Memorial Library, Washington, D.C.

ABOUT THE AUTHOR

J. Edward Tremlett claims he came from outer space, and the FBI won't confirm or deny. He's lived in South Korea and Dubai, UAE. He's been the editor of *The Wraith Project* and has seen print in *The End Is Nigh* and *Worlds of Cthulhu*. He's also part of the *Echoes of Terror* anthology. Currently, he writes for Op-Ed News and lives in Lansing, Michigan, with his wife and three cats.

HOW TO BUILD TOMORROW

BY CHRISTIAN NIENHAUS

Whether traveling with generation ships (because of the lack of FTL engines) or with ships capable of moving many times the speed of light, once humanity can reach for the stars, they will begin looking for planets suitable for colonization.

Overpopulation, environmental pollution, and the search for new resources are some of the reasons why settlers take on the arduous task of traveling many light-years to alien planets and starting a new life underneath a foreign – and sometimes deadly – sun. In the last centuries here on Earth, colonies have often created wealth, influence, and military power for their sponsors. So why should future nations, empires, or corporations act differently?

Because of the vast distance between a colony and any spaceport, thorough advance planning is needed even before the first colony ship takes off.

HEAVEN OR HELL

Once a space probe or an explorer spaceship has found a celestial body apparently suitable for colonization, the planet is first scanned and analyzed with the help of scientific instruments. The biosphere should be devoid of intelligent life for both ethical reasons (because colonization could destroy or alter the culture of the indigenous life-form) and because of possible rivalries regarding resources and living space. Further prerequisites for a successful colonization are geological stability; temperature ranges suitable for humans; and the presence of water; a nonpoisonous and noncorrosive atmosphere, and mineral and metal deposits.

The more of these prerequisites that are met by a planet or moon, the more likely it is that one day humanity will set foot on its surface. But even an inhospitable world might be worth the trouble if the benefits outweigh the risks. These can include rare minerals or metals, or possibly ancient ruins of an extinct but technologically advanced civilization.

Investigation of a possible colony can take weeks and probably months. Depending on technology, explorers may need to place thousands of sensors all over the surface to collect data. Along with information collected from orbiting satellites, surface scans could be gathered and sent to a central data storage facility located on the world or in orbit. Other probes might roam the solar system, examining the sun or the area surrounding the planet. Depending on how

cheap interstellar travel is, it's possible explorers will have sensors and satellites on multiple planets, traveling to other systems or worlds to deposit more sensors or check on earlier satellites. They could take multiple trips to the same system to analyze data, and there may be weeks or months between these trips.

After a first positive evaluation, the planet would be examined in more detail by robotic probes and teams of human experts. Independent of whether the explorers are made from metal or flesh and bone, those investigating the celestial body need scientific skills – biology, geology, meteorology, astronomy – to decide whether the planet is worth the money, time, and resources to be settled.

Skills in the field of biology are necessary to evaluate whether any dangerous microbes are present on the orb's surface or in the atmosphere that could pose a threat to settlers or their livestock. In many games, biology-related skills require specialization according to planet type, since evaluating the biosphere of a desert world requires different knowledge than evaluating an ice globe. Animals, human cell cultures, or mindless vat-grown medical clones may be exposed to the new environment to test and study the effects of alien microbes on both humans and on livestock the settlers might bring with them. These results could take weeks or months to fully analyze, depending on the level of technology. Societies with advanced computers and sufficiently skilled programmers can simulate these interactions with computer models, speeding up the investigations and making experiments on living organisms obsolete. It's likely alien microbes can cause light or serious diseases or even death; they may also alter the infected, causing physical changes in the colonists or livestock, or mutations in the offspring of both. An interesting side effect might be the appearance of psionic abilities, making the planet the future homeworld of *Homo psionicus*.

Geological skills are needed to examine the planet's crust. Besides finding mineral and metal deposits, it is important to learn more about the body's activity. Understanding plate tectonics can prevent a newly built factory from being destroyed by an earthquake or lava. Earthquakes also cause massive landslides and tsunamis, which must be taken into consideration when looking for safe locations for settlements or industrial complexes. On desert planets, geological skills will help find underground water supplies.

Colonies are likely to have different or unusual holidays. Holidays from the homeworld could morph over the years.

If the planet has an atmosphere, meteorologists will study the climate. Many games require meteorologists, like biologists, to specialize according to planet type. Meteorologists can study the year's seasons to find regions with moderate climate throughout the solar cycle. Ideally they can locate a spot where the probability of tornados, hurricanes, sand storms, blizzards, or monsoon rains will be low. Of course, some weather patterns can take years or even decades to cycle through, so a seemingly safe place to build settlements today might turn out to be a natural disaster magnet in a decade.

Astronomers are one of the few types of scientists who seldom visit the planet itself. Instead, they tend to stay in space and check the planet for an eccentric orbit around the star. If the world gets too close to the sun or veers too far away during its annual cycle, there could be times of the year where conditions are inhospitable. If so, the colony would require specially protected housing and ruggedized equipment, which increases costs. If conditions are hostile enough, staying on the planet might even be impossible during certain times; at the very least, there could be periods that require great effort or expense. However, astronomers wouldn't only research the planet itself. Their skills are necessary to search the star system for stray asteroids or comets that might come too close and hit the planet, causing global catastrophes. They would also study the star around which the planet circles; the frequency and magnitude of solar flares have to be determined to ensure that these outbursts have, at most, minor effects on the colony.

If competition in finding suitable star systems is fierce, explorers must keep a low profile unless they want to be "coerced" by members of rival companies, nations, or interstellar empires, stealing the results of months of research. And who knows what will happen to the researchers themselves . . .

WHY AND WHO

Why does an intelligent and technically advanced species travel to distant stars, looking for planets or moons to colonize? Why leave home, having been a cozy place for thousands of generations?

There are multiple reasons why colonists take upon themselves the tedious task of traveling to a far-away sun to colonize a planet or moon. Whatever the catalyst, resources will be a key element when deciding if a planet is going to be colonized or not. Without resources, a colony is doomed to fail.

The term "resource" shouldn't be taken literally. Many things make planets or moons interesting besides dirty chunks with streaks of ore, sparkling little rocks, or crystals used to focus energy in laser weapons. For example, the world's location in a space sector might be vitally important; strategic considerations may lead to military colonies with fleets of heavily armed battleships. Interstellar travel might

This Year's Fashion: Fur!

Depending on the campaign, terraforming might take too long and be too expensive. Colonists settling on a planet that cannot sustain human life must therefore either live in sheltered habitats or be genetically modified to adapt their physique and metabolism. Genetic modification raises initial expenses and preparation time, but it could pay off in the long run. These modifications depend on the conditions faced by the colonists. Extreme cold necessitates protection like fur on the skin or an extra fat layer underneath. A high level of UV, solar, or cosmic radiation calls for radiation-proof skin and eyes. High or low gravity can only be endured if settlers have experienced musculoskeletal upgrades. Implementing the modifications into the germline of the colonists ensures that future generations possess the same traits.

only be possible along specific routes: stable wormholes and natural or artificial jump points linking locations light-years apart, or highways in hyperspace connecting only certain star systems. Whoever controls these locations will have a strategic and economic advantage.

Colonies sponsored by governments or huge corporations are likely to be well-organized in order to deal with almost all kinds of situations. This increases the chance of survival for the settlers, since help will be weeks or even months away. However, organization not only includes shipping all necessary equipment to a colony, but also selecting the appropriate members for this complex project.

The head of the colony is the supervisor, who coordinates the activities of the different departments needed to establish the colony. (There may be more than one, if the colony is too big for one person to manage alone.) He is familiar with the master plan and guides the colony through the different stages of development until it has grown into a full-fledged member of interplanetary society.

There are also likely to be multiple departments on a colony. Each department plays a vital role in the development and advancement of the colony, and it's likely that the heads of different departments counsel the colony supervisor.

The construction department includes a number of different roles. Surveyors measure building sites, after which construction workers build homes, factories, streets, bridges, and an airport or spaceport (which may be the same location). Technicians and engineers install machines, electricity, running water, food gadgets, and other gimmicks that make life a little bit easier.

If exploiting the resources is the main cause for settling, miners, lumberjacks (wood might be an expensive resource in a spacefaring society), agriculturists, and even fishermen will be a common sight. Medical staff takes care of bruises and illnesses. Soldiers are likely to maintain a small or large presence, especially if the colony is situated near the border of a hostile neighbor. Other professions will follow once the first colonists have settled in and the colony is running.

Colony shortages change traditions ("Now we decorate the Christmas rock!"), and distances alter certain days' level of importance ("No one works on the Winter Solstice. No one."). New holidays for colonies could include Founder's Day (the birthday of a founder or mastermind) and Charter Day (the day the colony ship was launched or landed).

DON'T FORGET YOUR TOOTHBRUSH

It's likely that a big undertaking such as colonization can only be planned and financed by a huge corporation – such as a mining company – or a world government. Depending on the setting of the campaign, private settlers will most likely not have the financial means to buy all the equipment needed for colonization.

Unless the necessary equipment can be created or replicated from raw materials on the planet, spaceships transporting colonists to their new homeworld would have huge cargo bays to store all the equipment required. In fact, they may be nothing else *but* flying cargo ships with only a little room for the settlers. In order to save space, it might even be reasonable to transport the settlers in suspended animation, with only the ship's crew awake; in this way, only a small portion of the ship needs to be fitted with life support systems and no space-consuming cabins are necessary, leaving room for even more cryo capsules. Even livestock may be transported in suspended animation, ensuring that the crew can concentrate on maintenance instead of chasing escaped chickens throughout the ship. When the ship reaches its destination, colonists are likely to be reanimated in waves, temporarily causing the habitable sections of the ship to buzz with activity before they leave and make room for the next group of colonists to be awoken. Although cryogenic storage saves space, it almost certainly does not save *money*; cryo capsules used for suspended animation are likely to be expensive.

Because of the size of colonist ships, most will not be able to land on the planet themselves. Shuttles commute between the mother ship and the planet, bringing down cargo and the settlers. If and when the mother ship flies back to its home port, some or all of these shuttles may be left behind to serve as vessels for reaching remote corners of the planet, the world's moons, or even the moons of *other* nearby planets!

If satellites were used to analyze the planet before colonization, they may (if so equipped) double as orbital navigation systems or communication satellites in addition to their usual duties. If they are not equipped for this, additional satellites for these tasks are likely to be a priority.

Besides the settlers, the mother ship's shuttles carry all the provisions needed to establish a colony that intends to be self-sufficient. It's likely that equipment would be stored in containers to make them easier to transport; once unloaded, the containers may serve as modules for building temporary shelter, storage, or laboratories.

This equipment includes components for building housing, machines for exploiting resources, and equipment for the expansion and further development of the colony. Above all, the majority of supplies are purely functional. Personal belongings like casual wear, family souvenirs, books, stuffed animals, or board games are part of the luggage the settlers bring along in smaller bags and cases.

Fabricators might help achieve self-sufficiency. These machines are capable of producing spare parts for broken equipment, or customize components to allow for upgrading or changing equipment. However, given space restraints for

most colony ships, these are likely to be small and produce similarly small quantities; if so, wide-scale production is not initially cost-effective.

BUILDING A SETTLEMENT, ONE HOME AT A TIME

A colony needs a supply of water, which is probably the most essential and versatile resource humanity requires. Besides the obvious biological necessity of water, electrolysis generates oxygen and hydrogen; Oxygen is necessary on a moon or planet lacking an atmosphere or having a poisonous one, unless the colony has a full life-support system that can regenerate and purify air. Hydrogen can be used as fuel for spaceships or fuel cells. Without a significant source of water, a human settlement becomes difficult or impossible.

As the settlers can't go to the next supermarket to pick up some groceries (at least not in the early stages of settlement), a supply of food must be ensured, since stored consumables will dwindle sooner or later. Advanced methods of food production such as vat-grown food (meat, vegetables, or other foodstuff grown by cell cultures and supplied with flavors and nutrients) can provide tasty and healthy food. However, they might not be everyone's favorite dish, especially if the diner isn't used to it. This technique would probably acquire ingredients via biochemical means from local soil and plants in a nutrient solution nourishing the chambers that grow that fake steak or pumpkin.

If food production is more traditional, the colony will need to raise crops and livestock to feed those hungry mouths. Depending on the environment, crops and animals may be genetically modified to withstand cold, heat, or radiation, unless cultivated or raised in protected areas such as greenhouses or barns.

Local plants and animals, if edible by humans, may be a welcome additions to the settler's diet. They would reduce dependence on old-world supplies and add variety to meals.

After deciding on how to obtain a steady food supply – or perhaps just before – power generators need to be created. Power may be provided to facilities by fusion plants, solar panels, wind turbines, or other means.

Providing shelter is another high-priority task. A warm and mild climate calls for housing with good air circulation, while a cold and harsh climate needs homes with good insulation and heating, offering a comfortable retreat for freezing inhabitants. Like all buildings with apartment-sized rooms, these may be assembled using a modular design. Prefabricated modules with furniture, plumbing, electrical installations, and even appliances can be combined to set up housing in no time. This applies to hospitals, laboratories, or small workshops as well.

As on Earth, there is no bad weather, just inappropriate clothing. Function dictates style; fashionable footwear or jackets are rare. Colonists are likely to be supplied with clothing made from durable, water- and dirt-repelling materials. The garments keep the wearer cool or warm as needed, and protect him from rain, radiation, thorns, or annoying insects.

The GM allots your character a specific number of pounds (or ounces!) for your personal belongings. What do you bring?

Colonists might be equipped with bio-monitors, constantly checking the wearer's health condition and alerting rescue service or medical staff in case of an emergency. A GPS module may also be supplied, so that rescuers can find errant colonists.

Another early high priority is a spaceport, if needed. In addition to a landing place for spaceships and shuttles, this would include an arrival/departure terminal, loading/unloading docks, maintenance bays, and fuel. The spaceport may be small if most tasks for large ships is handled by a space station in orbit.

If the colony has a military background or purpose, buildings would be heavily fortified. There might be armed satellites and military vessels orbiting the planet, plus gigantic spaceports on the surface, all ready to defend the system and other colonies nearby. Arms factories – which manufacture weapons, ammunition, and missiles – will be rarely located in colonies, for a number of reasons. First, a colony will find those factories to be a major advantage when it comes to declaring its independence. Second, there is always the possibility of losing the colony to a hostile force, which would let the facilities fall into the wrong hands (or claws or whatever manipulating limbs the conqueror has).

The first resources obtained by the settlers will be used to erect their own industrial complexes to make the colony self-sufficient. This takes years or even decades to accomplish, during which further equipment, which the colony cannot manufacture itself, might arrive along with new settlers.

WHAT'S THIS COLONY FOR, ANYWAY?

The settlers are not traveling billions of miles just to watch the beautiful sunset or enjoy the steak from a six-legged antelope. They came for a purpose. This assignment dictates the type of equipment brought to the colony.

Exploiting the mineral resources of a planet requires different types of equipment. Mining gear is needed to acquire minerals and metals underground, while huge excavators and trucks are necessary for surface mining. Blast furnaces are required to extracting metal by smelting ore. At first, only a small plant is needed; it can be used to smelt the metals needed for building bigger and more powerful blast furnaces. Once a colony's mining equipment is fully operational, metals can be smelted for local industry or exported to planets covered with factories and industrial complexes (since such "factory planets" usually had their natural resources depleted long ago and rely on off-world resources to continue production).

Fertile soil – combined with just the correct amount of sunlight and rain – is another valuable resource. Planets with these conditions are likely to be covered with lush vegetation and teeming with animal life; if not, they may well become so as a result of settler involvement! If interstellar travel is uncommon or expensive, naturally beautiful planets may serve as exclusive holiday planets for the rich and famous. If trips are affordable, they may function as food suppliers and general recreation resorts for people from nearby star systems with no garden planets of their own.

If a "colony" is actually a tourist attraction, it requires buildings to accommodate all visitors. Construction machines are needed to build and maintain structures such as hotel

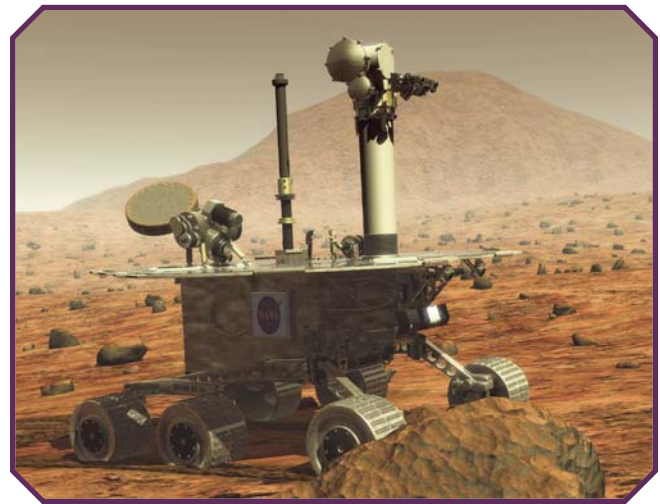
complexes, swimming pools, and shopping malls. If a fertile world is used as an agricultural source to provide food for surrounding star systems or nearby factory planets, agricultural machines like tractors, machines for soil cultivation, or combine harvesters are needed. "Luxury" goods are possible, even on an agrarian planet; the combination of climate, sunlight, soil composition, and atmosphere may result in tough and unique lumber or exquisite wines and liquors, making them profitable and sought-after goods throughout a space sector.

Cost-effective production is possible for a colony, but tricky. It can usually only be achieved by implementing production lines that allow fast and cheap manufacturing. Local resources can be used to make goods sold either in the colony or exported to neighboring star systems. Production lines creating modern goods require sophisticated and expensive equipment and machines. Transporting a complete production line is too expensive; therefore the bulk of components should be manufactured in the colony. Because of this, fabricators are ideal for manufacturing the components needed to finish the production line.

RESTLESS SETTLERS

Once the industry is up and running, if all goes according to plan, the colony will grow prosperous and expand over time, perhaps covering the planet. The remainder of the star system will be explored, new settlements founded, and nearby planets, moons, and asteroids exploited.

One day, some people of this star system will board a spaceship, fly to a distant star, and start a colony of their own . . .



ABOUT THE AUTHOR

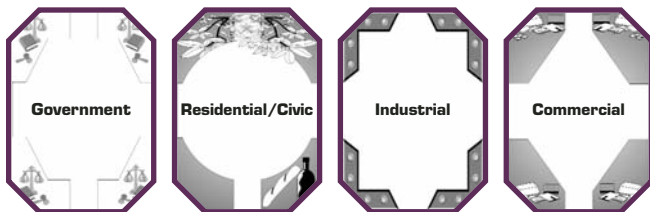
After studying biology, Christian Nienhaus now lives in Ulm, Germany, where he works as a scientific project manager and editor in a translation agency, specialized in translating medical and pharmaceutical documents. He has been roleplaying for more than 16 years. Always fascinated by the fusion of men and machine, his favorite settings are cyberpunk and space; however, he also enjoys horror, supernatural, and post-apocalyptic settings.

His worldly interests include astronomy and dogs. At the moment, he does not have a friend with four paws and a cold, wet nose, but he is planning on having one in the near future.

YOUR VERY OWN SPACE COLONY

Have the heroes shown up unannounced at a featureless planet? Do they need help figuring out how to structure their colony? These Space Colony cards might help.

First, print out the cards on pp. 21-26. You can use card-stock to make them stiffer or insert them into shufflable plastic card sleeves (or do both!). Depending on your needs, you might want to print out multiple copies of some pages. There are four types of cards: Government, Residential/Civic, Industrial, and Commercial. You then have a few options for how to use them.



COLONY REPRESENTATION

If you know the heroes will be visiting a colony at some point, simply devise the layout using these cards as inspiration. If you know that you're going to use a five-by-five grid as the colony, then arrange the cards beforehand, then stack the cards in the order you need so you can "deal" out the colony again at a moment's notice. Alternatively, you can use pipe cleaners or wooden frozen-treat sticks as connectors and leave some distance between cards, lending a more city-like look.

RANDOM COLONY

If you find yourself strapped for time and need to come up with a colony on the fly, simply start dealing out cards in whatever format you want. There are many possibilities.

Totally Random: Have all the cards in a stack and start dealing. This will likely result in colonies that don't make much sense, but it can be an interesting challenge to sort out *why* such an odd outpost resulted.

Structured: Sort the cards by type – Residential, Industrial, etc. – then determine the rough shape of the colony. For example, maybe the colony is built around an industrial core, with residential circling that and a ring of

bureaucratic and commercial areas on the outside. In this case, deal out a 1x1, 1x2, or 2x2 center of Industrial cards, a ring of Residential cards surrounding them, and a ring of Bureaucratic and Commercial cards on the outside. Or maybe there are "bands" of each type: Deal out a 1x5 band of one type, another 1x5 band below that, and so on.

Semi-structured: If there are certain cards you know you definitely need to make sure are there or want in relation to each other, simply place those however you like and fill in the rest randomly.

USING YOUR NEW COLONY

Once you have a colony, you can incorporate it however you like in your game. For example, maybe travel from one "card" to another takes a half-hour in game time; this could limit the amount of preparation the heroes can take before an adventure, and might force them to prioritize based on their current location. You could also use the abstract chase rules from **GURPS Action 2: Exploits** to allow exciting pursuits throughout the colony; perhaps every round or two the race progresses to another location, and one side or the other tries to use the geography to their advantage. If nothing else, the existence of what is available in a colony might give players ideas for where they might want to go . . . or the *absence* of a place might give them an idea for a capitalistic opportunity.

Massage Parlors the Size of Prisons?!

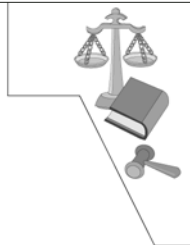
These cards are not meant to be strictly representational; they are intended as abstract representations of colony features. Thus, although all the cards are the same size, the actual size of the locations is "as big as they need to be." For sanity's sake, the layout assumes that the cardinal directions of the cards do match their orientation. Thus if the Executive Building card is to the left of the Refinery card, then Executive Building is west of Refinery. However, *how* these cards relate geographically can be decided by the GM; maybe each one represents an encapsulated dome, and there are tubes connecting the cards. Maybe it's an open-air colony, and there are rough geographic boundaries that separate the different "card" regions.



**Colony
Defense -
Large
Scale**



**Colony
Defense -
Small
Scale**



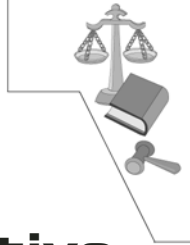
**Court
Facility**



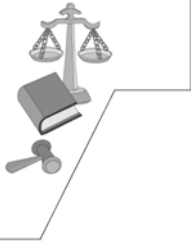
**Emergency
Services**



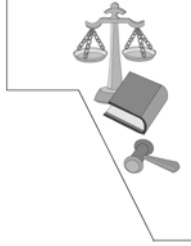
**Executive
Building**
(statehouse,
palace, etc.)



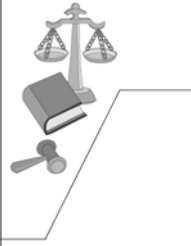
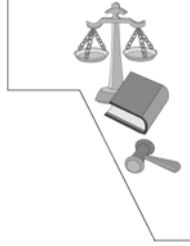
**Incarceration
Area**



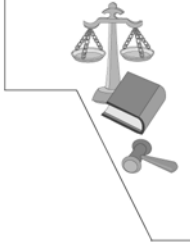
Monument



**Municipal
Building**



**Police/Civil
Defense**





**Childcare
Facilities**



**Gathering
Facility**



**Educational
Facility/
Library**



**Gymnasium/
Sports
Facility**



**Living
Quarters -
High
Occupancy**



**Living
Quarters -
High
Occupancy**



**Living
Quarters -
Low
Occupancy**



**Medical
Facilities**



Park



**Factory -
Cutting
Edge/
Research/
Prototype**

**Factory -
High-Tech**

**Factory -
Low-Tech**

**Hydroponics/
Food
Production**

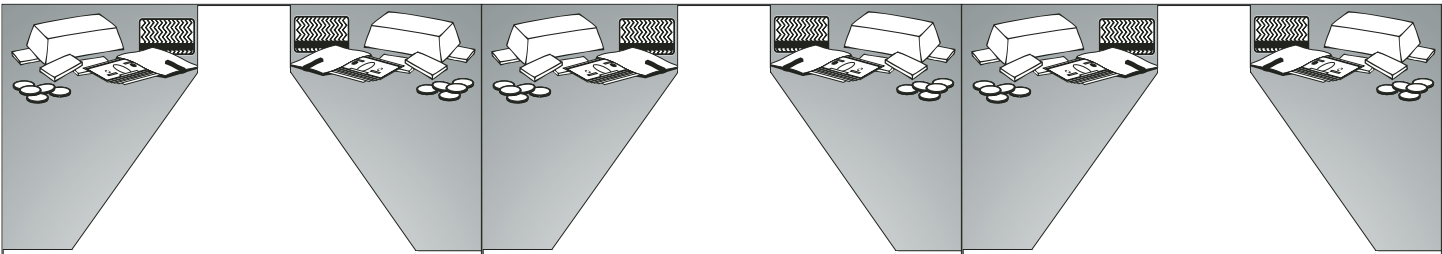
**Landing
Port -
Cargo**

**Livestock
Facility**

**Mining
Facility**

Refinery

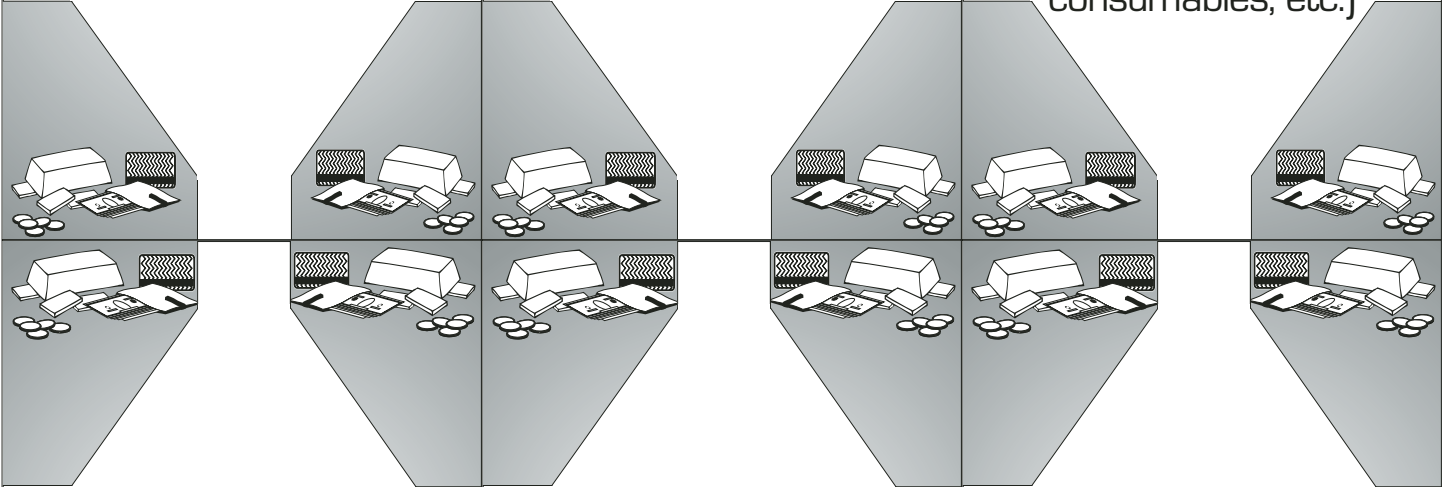
**Warehouse/
Storage**



Bazaar

**Business
Facility**

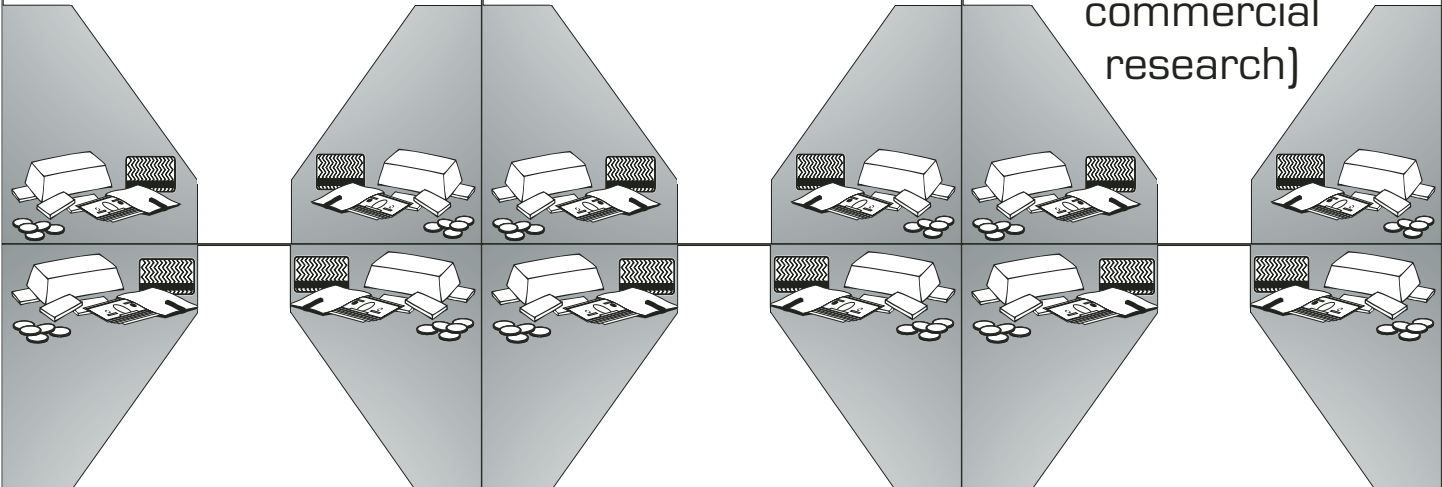
**Dry Goods
Store**
(clothing,
consumables, etc.)



**Electronics
Store**

Food Store

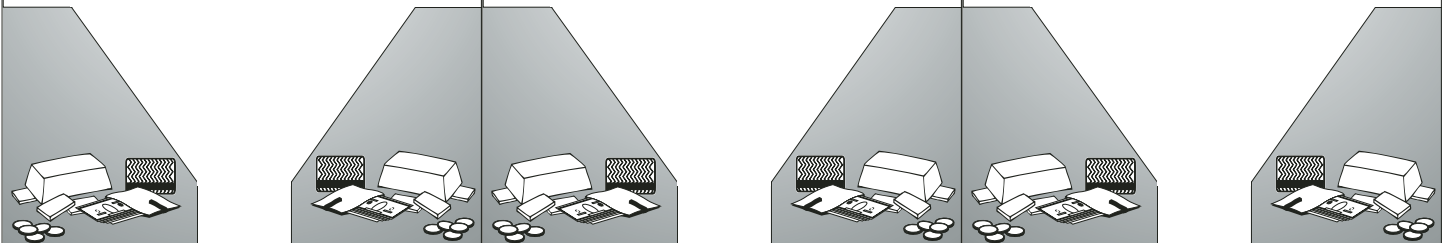
**Information
Facility**
(media, broadcast,
commercial
research)



**Landing
Port -
Business**

**Legal
Services**

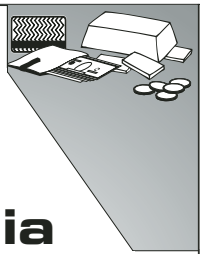
**Luxuries
Store**



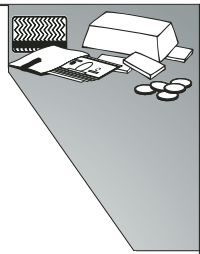


Media Store

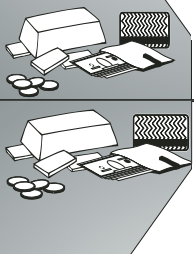
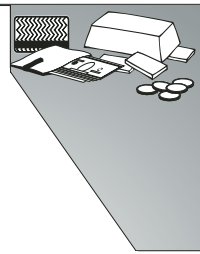
(entertainment, commercial information)



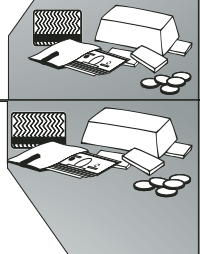
Refueling Station



Repair Facility

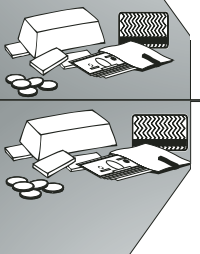


Restaurant/Bar

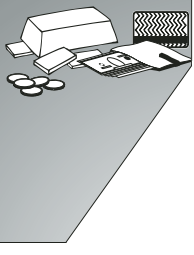
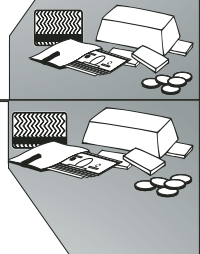


Specialty Service

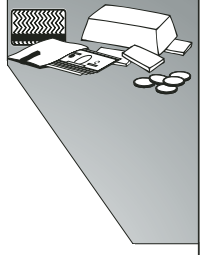
(salon, massage parlor, casino, etc.)



Science/Research Facility



Vehicle Store



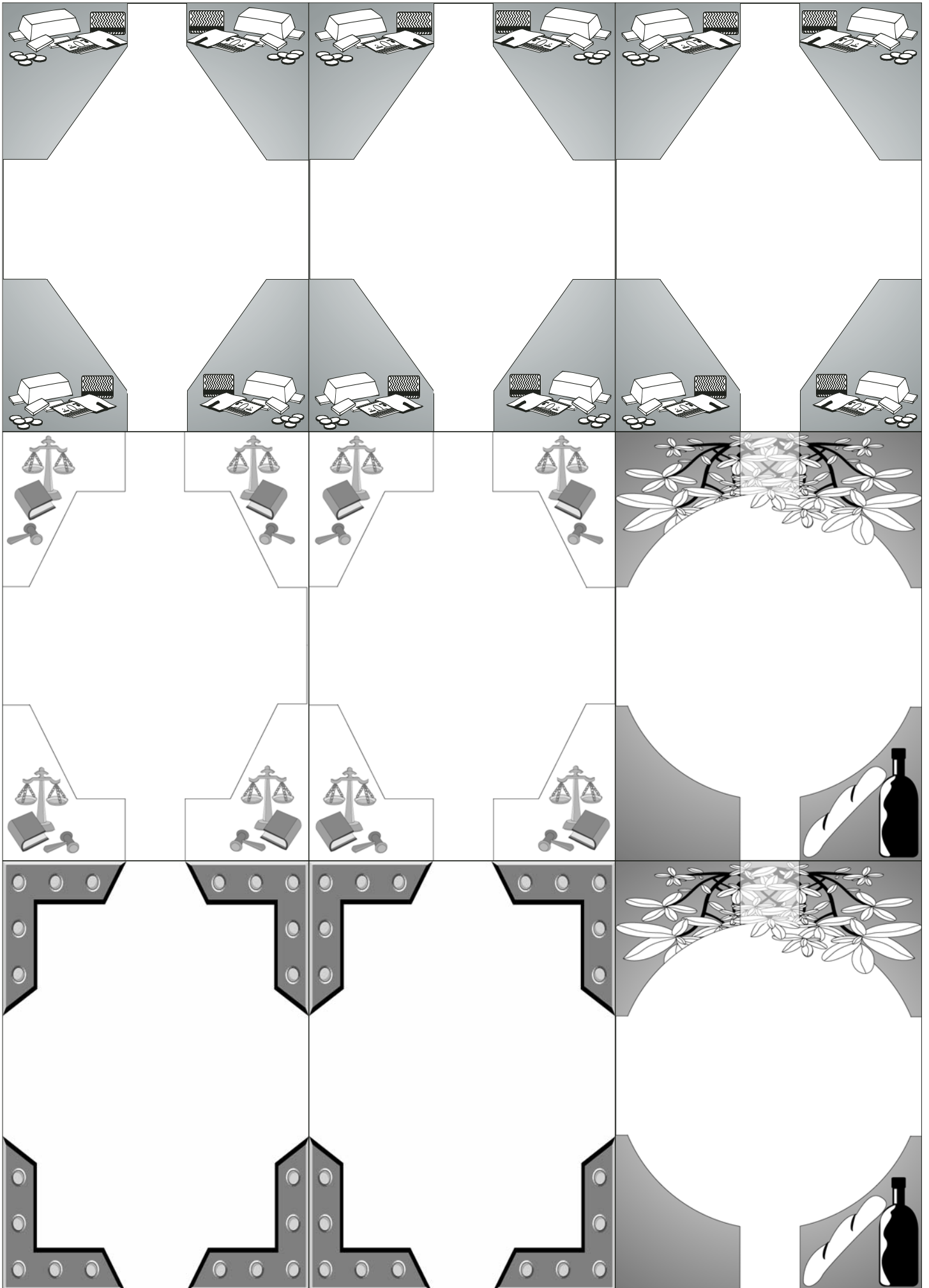
Weapon/Armor Store



Black- or Gray-Market Operation

(drugs, sex, etc.)





GURPS

Fourth Edition

SPACE



THE FUTURE IS YOURS!

STEVE JACKSON GAMES

THE SUPER COLONY

BY BRIAN ROGERS

One dream of science fiction is the human conquest of space through the foundation of its first colony. Making it happen requires advanced technology, the discovery of habitable worlds, and exceptional humans to face the challenge. Interestingly, common elements in the supers genre include advanced technology, alien worlds, and people who go beyond exceptional into “super.” It’s reasonable that humans in superpowered settings should form off-world colonies much sooner than in reality, especially with superhumans to ease the way.

Science fiction doesn’t have a problem with superhumanity per se – it’s had “superhumans” as far back as Hugo Danner and Virgil Samms. Concepts common in sci-fi have a different flavor in the supers genre – a Green Lantern isn’t a Lensman, for all their similarities – so a space exploration game with supers will be unlike those with standard sci-fi androids, alien artifacts, and telepaths. It’s up to the GM to determine how much the supers genre influences the setting: Is it a space campaign with some supers, or a supers campaign with some space?

DEFINING OUTER SPACE

Superpowered settings have heroes with science-fiction origins – people wielding alien artifacts, extraterrestrials living on earth, and so on – but generally restrict themselves to three styles of space.

Colonial Powers

Space is full of unity-government planets of aliens sporting signature powers or abilities. Worlds are much like countries in 19th-century Europe, with shifting alliance webs and social stereotypes. There aren’t star-spanning empires, but some races have colonies that serve as proxy battlefields. Homeworlds rarely go to war; when they do, it is usually precipitated by a social upheaval or a sudden resource scarcity, and wartime forces are small enough that a team of powerful superhumans can end the fighting. A campaign-focus colony might become a target in such a conflict, generally at the end of a longer plot arc that starts with meeting the threatening aliens (with their homeworld’s prototypical powers) and

escalates in a slow dance of contacts that leads to war. However, it’s possible that a sudden incursion of one or more hostile races want the colony’s world. This is the most “hard” sci-fi option, as the idea of some races having evolutionary advantages, access to a particular technology or a single psionic power doesn’t step outside accepted science fiction. Of course, if the races in question are vastly powerful Kryptonians or the size-changing Imskians, “hard sci-fi” doesn’t really apply . . .

Imperial Powers

Space is full of vast empires containing hundreds of star systems that are constantly jostling for territory and power. Some empires contain dozens of races (willingly or not); others are a single race (they never encountered others, or perhaps they slaughtered or transformed them). The constant cold war is punctuated by huge hot wars. Individual supers must find powerful outside forces to end the conflict or target leadership (since, in the stories, empires always have individual leaders who can be battled or entreated). A campaign-focus colony might be affected by wartime spillover: The colony world is a strategic point for the other races, or is a treaty-designated neutral space that the colonists have violated. Alternately, humanity might learn that, by founding a colony, they have entered the big leagues, so the constant brinkmanship, saber rattling, and space armadas are simply something to deal with. This is the most “space opera” option, where the GM must juggle dozens of different alien powers and several levels of technology.

Cosmic Powers

Space is full of cosmic powers that most people can barely comprehend. Such powers include floating moss-covered eyeballs that empower guardians of the universal order; aliens that look like Earth pantheons waging internal battles over the shape of reality; immortals who pose challenges to colonists to understand “love” and “sacrifice” or . . . well, Azathoth. Very powerful heroes armed with advanced technology *might* be able to drive off such cosmic forces, but in general, the forces have to be outwitted, out-moralized, or out-gunned by remnants of even more powerful cosmic forces.

In GURPS, strange psychic augmentations can be implemented easily with GURPS Psionic Powers. Maybe everyone has the same level of power!

A campaign-focus colony might be plagued by aliens who see the new civilization as “humanity in a Petri dish,” or they might face an unspeakable cosmic force armed only with sci-fi technology and pulp investigation. This runs the gamut from Marvel’s “1970s cosmic” to H.P. Lovecraft in space, and can be added to either other option. The *Babylon 5* series, for example, has both warring empires and ascended energy aliens using lesser races as pawns in their philosophical arguments.

It's like two giants fighting in a sandbox. They don't even care who's getting stepped on anymore.

– Commander Susan Ivanova,
Babylon 5 #4.5

SUPERHUMAN COLONISTS

Once the GM settles on the type of space, he has to think about the colony’s superhuman population. Again, the question arises: Is this a space campaign with supers, or a supers campaign in space?

No Superhumans in the Colony

The colony just exists in a universe with superhumans. Perhaps some superhumans act as guardians, checking in on a regular basis to make sure everyone is all right, but they can’t be counted on for day-to-day assistance (and are therefore secondary to the campaign). This is pretty much a regular colony world that sometimes faces supers-scale threats, has the super as a convenient *deus ex machina* when the normal-powered PC colonists make world-threatening errors, or simply has supers-style science. As a plot element, supers matter more on a philosophical level: Would such a colony take more risks because they trust CosmoGirl to answer their FTL distress call? Would they be resentful that even this aspect of human endeavor is overshadowed by superhumanity? Is Colony Alpha the “home city” for CosmoGirl’s secret I.D., meaning the PCs are her supporting cast? (See also *League* in *GURPS Supers*, p. 19.)

The Colony’s Founders Include a Few Superhumans

This occurs when Earth-based superhumans decide that they’d do better (or at least more interesting) things off planet. Such supers are likely the colony’s driving force, power base, and initial leadership. They may be expanding humanity, preserving it from an Earth-centered catastrophe, or just sick of putting the same theme villains in jail. (Alternately, the colony was founded by a supervillain who went into space to escape meddling heroes and their endless defense of a failed status

quo!) Such games are likely to maintain some supers elements: Earth-based threats or alien species from the heroes’ past will intrude, trying to destroy, conquer, or subvert the colony (or perhaps they founded their own colony nearby), leading to evil masterminds, criminal cartels, flashy battles, and maybe even super cattle-rustling. This allows for some supers-style play while keeping the focus on the SF elements of founding the colony.

A Few Superhumans Emerge After Founding

After the settlement has had one or more members develop superpowers (unplanned and unreproducible, as such things are), the colony has some interesting citizens. If the PCs have superpowers, they become important as defenders, resources, or threats.

As defenders, it explains why the PCs are the ones sent to deal with the uncovered alien city, crashed spaceship, or psychotic killer while removing from them any burdens of resource management or civic planning. If they’re seen as resources, the story focuses on management and civic planning with the benefits of superpowers, and the morality of using superhumans as resources. For example, the colony may decide to rig the lightning-generating mutant up to the power grid 24 hours a day! At this point, superhumans might work in secret against the oppressive government, just as they would if the colonists saw them as threats.

Parallel colonies on the same world might have different attitudes, and if they use their superhumans to try to steal another colony’s resources, then some supers-genre battles might be in the offing. The idea of superpowers being a resource is the most hard sci-fi of the options, with the potential for both hard-science uses for powers and moral dilemmas for society.

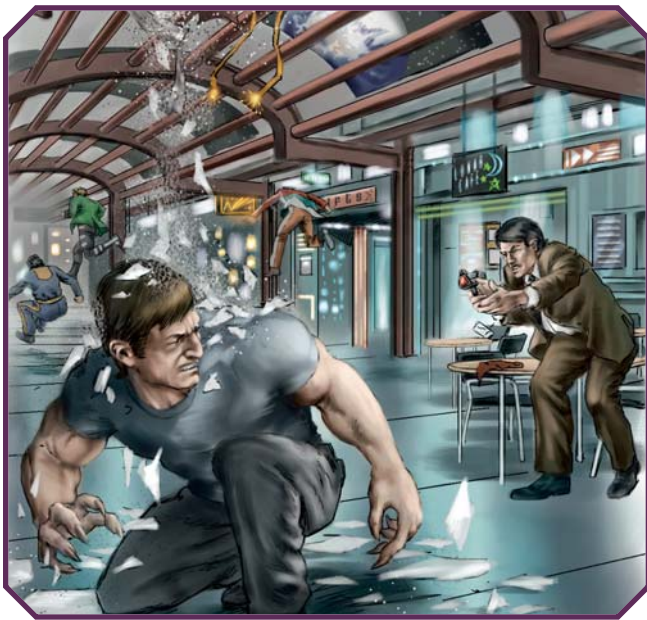
Everyone in the Colony Became Superhuman After It Was Founded

Such colony-wide superhumanity almost always manifests as a single power caused by their new environment (which is also more sci-fi in style than supers). There are two obvious directions for this. First, the power gained is a color element that alters but does not override the colony setting; giving everyone laser-vision just means no one has to carry a blaster. Second, the campaign might explore the ethics of the power. The power could be a source of unease (the whole colony slowly becomes telepathic – now what?) or horror (everyone can conjure the ghosts of dead loved ones – now what?). Of course, if everyone has laser vision, they also have a ready power source for energy, and construction becomes easier, as does survival in a frigid environment. In the cases where everyone *doesn't* have the same power, such a colony-wide manifestation either produces chaos (or conquest if some powers are more potent than other) or humor (either slapstick or arch) as the colony struggles to cope.

Many locations from GURPS Places of Mystery can have their serial numbers filed off and be used for interesting colony-planet locales.

Every Founder Is Superhuman

This is usually an attempt to forge a new world by powered outcasts, or as a penal colony to get the supers off Earth. In a space setting, the power will be psionic and standardized. In a supers setting, powers are likely mutations and vary wildly. Such games likely lack the morality play or chaos elements of a post-foundation emergence as the colonists aren't surprised by the power. Campaigns will likely focus more on the development of a superhuman community and the use of powers to make founding the colony easier or more difficult. These games are unlikely to have many supers genre elements, focusing on exploration adventures, resource management, and civic structure where everyone can make super-contributions. Of course, if the outcasts are still hunted by their Earth-based, enemies there's the strong chance of super-colonists vs. space armadas and giant robots.



HANDLING POWERS

One complaint about standard supers universes is the need to keep the status quo. Despite the presence of superhumans as far back as the 1930s, the Marvel and DC universes still look like reality. While this is a conscious decision by the publishers (and by GMs who are trying to mirror these works in gaming), the whole point of founding a space colony is to forge something new. In other words, superhumans in the colony world are *supposed* to change things! That shift is what makes the stories more sci-fi than supers; if the GM doesn't want that, it's probably best to just set the game on Earth, or give each hero his own domed habitat as his "home city," complete with rogues gallery, reducing the sci-fi elements to chrome.

But if the presence of superpowers changes things, what changes can be expected?

Physical powers such as super-strength and super-speed offer advantages in colony construction and defense – the colony will be built faster and better. While telekinesis is even better for construction (unless the super-strong hero can also fly and/or ignore structural stresses), the advantages are similar: The superhumans are cheap, agile, intelligent construction equipment.

Super-speed (or other movement powers, like flight) allows for better transport between far-flung colony elements, so the colony can safely spread out a little more. Teleportation is similar unless it can reach back to the homeworld, in which case the colony has the advantages of distance but not the disadvantages, as someone can always pop home for more penicillin.

Energy creation powers change things radically. Almost any energy projection ability alleviates power scarcity issues, but if only a few people have the power, the colony might overreach, causing trouble if one of their living generators suffers an accident. Readily available energy generation will make manufacturing easier – flame blasts being used to heat kilns, laser eyes cutting away stone and welding steel, and so on.

Matter creation or manipulation powers are another radical shift. If one or more superhumans can transmute elements, the colony will have few scarcity issues (except perhaps food; few comic-book superhumans can transmute organics, and the ability is equally unbalancing in a game). Superhumans limited to creating or molding things like steel or earth are just as helpful as those with physical powers for construction, if not more so. Even the ability to create temporary things made from ice or solid energy allows for instant scaffoldings, support structures, and tool generation, without the fuss and bother of what to do with the detritus.

Telepathy and similar powers are of variable utility. If the colony suffers from crimes or resource losses, a telepath would be an invaluable detective (perhaps with fewer ethical constraints than on Earth, given survival concerns). Psychologists able to probe the mind directly can help with feelings of isolation or homesickness (such as discussed in *When the Dark Eats You*, pp. 12-15 of this issue). Thought transmission lets the colony maintain communication without wasting infrastructure resources. As with relying on superhumans for a power supply, a colony without a communications backup is in for a rude shock if their telepath falters. Unfortunately, unless the telepath can hyper-coordinate his co-workers, such powers are not likely to help during the construction.

Combat-enhancing powers are the least useful (unless the colony is under regular attack, from inside or out). Player favorites of martial artists with razor sharp claws and hyper-agility don't contribute much to an already secure colony. Unless the character has other powers, they will likely be limited to being perimeter outriders, or becoming the Amazing Bandsaw Boy during construction.

Defensive powers such as adaptation, life support, and invulnerability are most useful when the colony world is hostile or faces space-based threats. Invulnerable people make great scouts or first-contact specialists (or can work in harsh conditions), but as with combat types the abilities aren't as useful for day-to-day operations.

Colonies that utterly lack contact with the homeworld can closely resemble post-apocalyptic setting, albeit one that's hopefully on its way up rather than down. For more information on post-apocalyptic settings, check out Pyramid #3/3: Venturing Into the Badlands: Post-Apocalypse!

Intelligence-enhancing powers are most potent abilities in a supers-style science-fiction game. After all, the presence of super-technology is likely what made the colony possible, and using your mind to think or invent your way out of a problem is a core of space exploration in sci fi. Unlike other powers, super-invention is both transferrable and mass producible (assuming the facilities exist). Using super-strength in dome construction is a big help; using superhuman intelligence to build terraforming nanites is literally a world-changing event. Characters who are super-inventors in a regular supers campaign might just be merely scientists in a space setting: Sci-fi engineers already restructure the deflector dish to emit chronotons as a defense against space monsters, so having super-inventors do that is right in genre.



SAMPLE COLONY: NEW PHILADELPHIA ON ALDEBARAN II

In 1931, the U.S. Navy pulled together Tesla and other top scientists into Project Rainbow at the University of Chicago to study the bizarre effects of Tesla's Unified Field Theory research. Project Rainbow moved to Princeton in 1933, adding Einstein, John von Neumann, and Townsend Brown to the staff. Things were promising enough that the Department of the Navy moved ahead with a field test on the *USS Eldridge* in 1943.

A burst of energy momentarily moved the *Eldridge* into what was dubbed "UFT Space" or the Green Zone, leaving 15 sailors on the *Eldridge* superhuman. It was later determined that the energy burst unleashed superhuman potential across the eastern seaboard. Unfortunately this came too late for either supers or UFT technology to change the war's outcome. The era of superhumanity was a post-war phenomenon, and superhumanity had little impact on history – especially because the "Majestic 12" (what the *Eldridge* superhumans were eventually dubbed after early deaths) were matched with a second Western European Green Zone experiment that created a superhuman balance of power.

Fifty years after his empowerment, one of the *Eldridge* supers, Gaslight (who possessed hyper-intelligence and teleportation, among other powers) decided that it was time for humans to stop dabbling with satellites and moon-based military installations and head into space. His personal fortune backed the construction of a colony ship that made its way to Aldebaran II and formed the basis of New Philadelphia. It landed 15 years ago, and six more ships have made the 18-month trip – including a pair of Chinese ones that set up a colony on the far side of the world. Aldebaran II is nearly Earth-like, but its axial tilt produces larger weather extremes, so the initial colonies all used pressurized atmosphere domes to contain their primary living spaces.

Inside these domes, New Philadelphia has been forming at a rate that would surprise people unfamiliar with the architectural advances of the superhuman era. Manufacturing plants have turned Aldebaran's soil and abundant metal reserves into buildings that replaced the initial utilitarian structures with unique skylines; art-deco inspired towers nearly scrape the domes. The city is filled with a can-do spirit, and the socialist requirements of colony life are being replaced with a fierce entrepreneurialism as the challenges of the new world prove surmountable. While three-quarters of the population still live in the domes, vast stretches of the surrounding area are being claimed. New Philadelphia has high-energy-physics labs just outside the domes, a small anti-gravity-vehicle plant past that, and ranches that seem to stretch to the unexplored horizon.

Backed by Gaslight's teleportation powers, New Philadelphia had regular contact with Earth – the aging hero would check in once a week, shuttle people needing emergency surgery through the Green Zone to specialists, and carry vital supplies back. When Aldebaran II was threatened by an automated alien warship, he ferried over his surviving teammates and several new heroes to ward off the threat. While he couldn't protect the colonists from every scrape and bruise, he was clearly their guardian angel. Because of this, his disappearance in 2003 hit the colony hard and left it isolated from Earth.

The colony shifted to austerity measures on rare materials and medicines. Gaslight had insisted that the colony be self-sufficient; they more or less were, but now they had no choice. Some growth was put on hold, resources were shifted into expanding their medical facilities (especially pharmaceuticals manufacturing), and surveying for rare-but-necessary elements has taken precedence over mining more iron, tin, and copper.

This new austerity has not dimmed New Philadelphia's artistic, retro soul (other than ending plans to "chrome up" their hovercars), and the city walls are slowly being covered with murals and sculptures even as their public spaces overflow with the music performed by home-grown crooners. While the colony's inability to compensate Earth-based corporations for creative works meant freeing up copyrighted materials for public use, the people of New Philadelphia don't hesitate to create their own artwork.

Do the colonists record dates and times using homeworld standards, even if they don't make sense on the new planet?

After four years of no contact, the colony declared Gaslight lost in 2007. Last year, the New Philadelphian scientist Zachary Zevon tried to create a wormhole to Earth via the Green Zone. The device exploded, giving powers to Zevon and those near the experiment: Zevon's uncle Pavel Konstantin and his two teenage assistants (both born during the first flight from Earth) Deirdre Norris and John Dunn. The quartet all gained kinetic energy powers: Zach can generate force screens and had his already considerable intelligence boosted. Deirdre can grow luminescent kinetic "armor" and is superhumanly strong. John can convert his body into nearly indestructible "solid force," which he can use to fly and fire force blasts. Pavel gained molecular and atomic-scale psycho-kinesis that lets him manipulate probability; generate illusions out of dust, smoke, and light; and conjure various other subtle effects.

The quartet took up roles as defenders of and superhuman assets for New Philadelphia. Over the last year, they have accomplished a tremendous amount. They assisted in the construction of a fourth atmosphere dome to increase New Philadelphia's city space. They redesigned some of the colony's wind power collectors to make use of John's kinetic energy emissions. They dug out additional basements under the existing domes for storage. They led an investigation of the preterran cave complexes discovered in the mountains. They made contact with the descendants of lost explorers from that investigation (who had fallen into accelerated time and formed a new isolated underground culture over their subjective centuries). They investigated the apparent embezzlement of colony resources by one of the prominent business leaders. They fended off a foray of Chinese superhumans from the antipodal colony. It's been a busy year.

Behind the Scenes

New Philadelphia started as a colony with a single superhuman founder, and it can be played that way (perhaps with some other PC hero taking the place of Gaslight) – scrappy settlers with a safety net facing resource issues and the occasional major threat. Contemporary New Philadelphia, on the other hand, is a

colony housing a handful of post-founding superhumans. Dr. Zevon and crew, while they are superhuman, are of the Fantastic Four/*Johnny Quest*-style, so the setting has more emphasis on exploration, science, and resource management than flashy battles vs. costumed menaces. There are still several supers tropes: The domes are filled with towers to give it the right urban skyline, the team faces a set of opposite numbers from the Chinese colony, and the lack of jail space coupled with the colony's standards against corporal punishment means that local adversaries will be in and out of confinement. But the main issues are those that could just as easily be faced by Federation away teams or freelance traders in the *Traveller* Imperium.

FORGING THE FUTURE

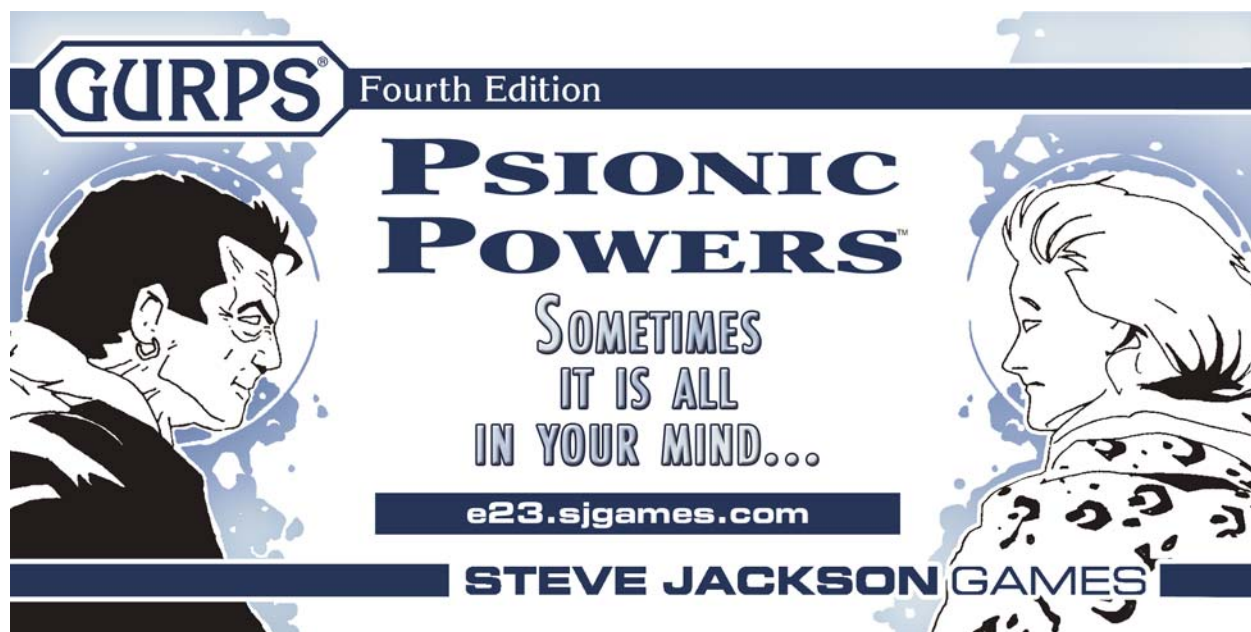
Other colonies could be similar or radically different. Both space and supers trade in mad, wonderful ideas, and a first colony of superhumans gives those ideas fertile, albeit alien, soil in which to root. The PCs have the opportunity to make their ways as heroes, strange visitors to another world.

Many thanks to Daniel Harvey, the inspirational founder of New Philadelphia; to Rebecca Stevenson, Patric Rogers and Jeff Mccoskey for Deirdre Norris, John Dunn and Pavel Konstantin; and to Christian Irish for the original Gaslight.

ABOUT THE AUTHOR

Brian Rogers has been thinking deep thoughts about supers since he read about the Fantastic Four being trapped in the Sargasso of Space. He has been translating those deep thoughts to RPGs since he got his first copy of *Villains and Vigilantes* in 1983. Yet somehow 25 years later, he still does not have superpowers, despite having written nearly 50 *Pyramid* articles.

Brian lives in Connecticut with his wife and daughter, where his presence is making them geekier by the day. If radiating geekness is his only power, he's going to be pretty depressed.



REACHING THE STARS

BY CHRIS WONG SICK HONG

Before humans can colonize other planets, they have to get there. While which engine will ultimately let people reach the stars is up for debate, many candidates have stepped forward. Each provides its own unique campaign opportunities, due to its inherent limitations and dangers. Here are a few such engines, along with associated adventure hooks and survival tips. As players will soon find out, getting there can indeed be half the battle, especially for something as dangerous as space travel.

LIQUID ROCKETS

Typically, liquid rockets have two tanks. One contains the actual fuel, such as liquid hydrogen. The other contains the oxidizer, which provides the oxygen necessary for the fuel to burn. During engine operation, both the fuel and oxidizer are injected into a combustion chamber, where they are burned. The exhaust is propelled out of the rear of the engine and, due to Newton's third law of motion, the rocket moves in the opposite direction.

Liquid rockets, which have been around since 1926, are still the most advanced system in use for space flight. (It's the main system used to launch the Space Shuttle into orbit.) The main advantage of liquid rockets is that they're lighter than solid-fuel rockets, but they're still not efficient enough to reach the stars within a single human lifetime. Thus, liquid rockets are most likely to be relegated to a backup/maneuvering role in colony ships.

Survival Tips

- When pure hydrogen (a common fuel) burns, it produces ultraviolet light – it's effectively invisible to human eyes. If a burning hydrogen leak is suspected, be sure to probe the area first with a low-melting-point plastic rod. If there is a flame, the rod will melt and impurities in the rod might color the flame, allowing the technician to more easily determine its location and extent.

- In the event of life-support failure, the oxidizer in liquid rockets can be converted into breathable oxygen. Liquid oxygen is a popular oxidizer and can be bled directly into space-suit air tanks.

Adventure Hook

As everyone knows, rocket fuel is flammable and explosive. Unfortunately for the colonists, there is a saboteur onboard. Not only does the crew need to find him, they also need to make sure any explosives he may have planted are properly disposed of.

NUCLEAR PULSE PROPULSION

Nuclear pulse propulsion (NPP) uses a series of nuclear explosions to provide thrust. Small nuclear bombs are detonated outside the spaceship and the ship rides the shockwave. Each shockwave accelerates the ship, and it eventually reaches cruising speed. In addition to the nuclear bombs, the major components of this engine are a heavily shielded "pusher plate" that absorbs the brunt of the shockwave, and shock absorbers that make the impact of the shockwave survivable.

This was the design proposed by Project Orion, which was abandoned in 1963 due to the Partial Test Ban Treaty. The bombs would explode at the rear of the ship, where the shockwave would hit the pusher plate. The pusher plate was connected to the main body of the spaceship – the cargo and living quarters – by massive shock absorbers.

In order to safely manage the shockwaves, spaceships must be large – at least several stories. The largest proposed was the size of small city, which luckily gives ample room for colonists and supplies. NPP is also stunningly efficient. An unmanned probe using this technology could conceivably travel to Pluto and back within a year.

Instead of a pusher plate, an alternate design uses a "sail" that's attached to the main spaceship by a retractable tether. A nuclear explosion close to the sail launches it forward. So as not to jolt the passengers, the spaceship lets the tether unreel freely at first. Then, it gradually puts the brakes on the tether. Instead of slowing the sail down, this speeds up the spaceship, and the passengers experience a safe, gradual acceleration. Finally, the spaceship reels the tether back to its original position and the cycle repeats itself. It's almost like using a grappling hook on empty space. The explosion launches the sail forward, and the spaceship pulls itself along behind.

If FTL proves impossible, it might be easier to colonize an alternate Earth than another planet. Check out GURPS Infinite Worlds for ideas.

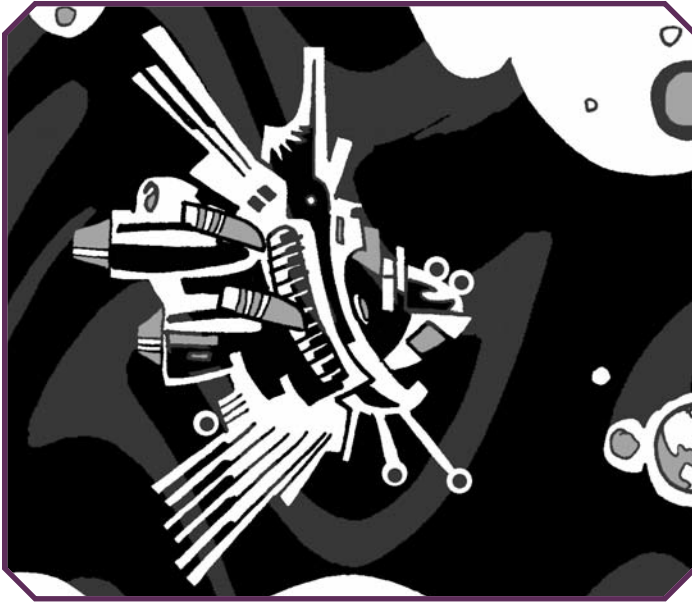
Survival Tip

These engines run on uncontained (open to space) explosions. In the event of hostile aliens or other threats, they could be converted into rudimentary weapons systems.

Adventure Hooks

- The shock absorbers in a rear-explosion NPP city-ship have been damaged by enemy forces. Colony security will need to find the organization responsible and shut them down so that the absorbers can be repaired. If they aren't, the city-ship has no way to slow down when it reaches the destination planet and will be doomed to wander the stars forever.

- The sail of a front-explosion NPP colony-ship was damaged when it passed through a cloud of dense dust particles. Not only that, but the tether has been warped so that it's now impossible to reel the sail completely in for repairs. The crew will need to spacewalk out there and fix it. Because of radiation from a nearby nebula, if they don't return to the ship in time, they'll probably die.



ION THRUSTERS

Ion thrusters work by accelerating charged particles, called ions, to tremendous speeds. By itself, each ion has very little mass, so the spaceship accelerates slowly, but in space, friction isn't an issue. Unless it hits something, the spaceship won't slow down and by operating for long periods of time, ion thrusters can efficiently reach extremely high speeds. Their fuel source, typically a gas, is also easily compressed, which makes these engines more compact compared to other options.

One important effect that ion thruster designs must take into account is the buildup of charges. As ion thrusters emit positively charged ions, the spaceship gains an equal, negative

charge. If nothing were done, the ions would be attracted back to the ship, negating the thrust and possibly causing damage on impact. Thus, ion thruster designs contain a "neutralizer," which balances the charge. Some neutralizers simply beam the extra electrons out into space alongside the ions, further increasing the thrust.

Unlike liquid rockets and NPP engines, ion thrusters don't require explosive fuel, making them much safer. Fuels used in current, real-world ion thruster designs include xenon gas, bismuth gas, ammonia gas, and lithium vapor.

Survival Tips

- Never operate ion thrusters when their neutralizers are offline. Not only will they not work, but the backlash of ions could damage the ship in the process.

- The stream of charged particles that form an ion thruster's exhaust are dangerous. Stepping into the beam would be like stepping inside an angry light socket. The speed the ions are traveling at makes them dangerous, not to mention the electrical current involved.

Adventure Hook

Scanners have detected an asteroid on a collision course with the colony ship. Because the ship's ion thrusters can't move it out of the way fast enough, the ship's lead scientist has suggested another option. If you can't move the ship, move the asteroid. Using the ship's escape pods to ferry themselves and the necessary parts, the crew must build an engine on the asteroid itself.

MASS DRIVERS

Mass drivers work on the same principle as ion thrusters, but instead of ions, they use chunks of matter – anything from small pellets upward. As a result, these engines require more energy to operate and their fuel sources are much bulkier. While this makes them a poor choice for most applications, their disadvantages can be circumvented by using asteroid ships.

Greg Bear applies the idea in his novel *Eon*. Colonists start by excavating a small city in a large asteroid. The rock cleared from this excavation is used for fuel by the mass drivers, getting the ship underway. During the journey, the colonists continue their excavations, simultaneously growing the city and supplying the engines with fuel. Once the destination planet is reached, the city is abandoned and the colonists begin settling their new home. The journey may take a while, but at least the colonists won't be cramped for space.

Survival Tips

- The asteroid-ship's exterior protects those inside from the bulk of interstellar hazards. Its surface, however, is extremely dangerous. Avoid it if at all possible.

- Like NPP engines, mass drivers can be turned into rudimentary weapons.

The GURPS Spaceship series details how to create ships and offers an assortment of premade vessels. It also has space-battle rules, with new supplements providing additional options, such as using engines as weapons.

Adventure Hook

During their journey, the humans on the asteroid-ship have split into two factions. One wants to colonize the destination planet as originally intended. The other wants to change course for a world discovered mid-flight. If the initial reports pan out, the second planet is a much better choice. However, the initial reports could be wrong. Arguments are growing heated and there are whispers of violence. Where do the heroes stand?

SOLAR SAILS

Solar sails allow spaceships to sail the cosmos using light in much the same way that sailboats use wind. Light itself creates a slight pressure, and this can be used to propel spaceships. The thrust generated by a completely reflective surface is twice that of a completely absorptive surface, thus most sails are as reflective as possible.

One main drawback to solar sails is that the “wind” is always stronger closer to a star. In the vast void between stars, there isn’t much at all. Fortunately, solar sails can also sail on lasers. As long as these guidance lasers are powerful enough and aimed correctly, they can be stationed anywhere, even Earth. Like ion thrusters, solar sails accelerate slowly, but their greatest advantage is that they require no fuel, saving much space.

Survival Tip

In an emergency, solar panels attached to a spaceship can be repurposed as impromptu solar sails. However, because they absorb sunlight rather than reflect it completely, they’ll be less efficient.

Adventure Hook

Back on Earth, an eco-terrorist organization named Earth Only believes that humans shouldn’t spread their destructive ways to other planets. To make their point, they plan on attacking the ground-based guidance lasers. If they succeed in

destroying them, the colony ships will effectively be unable to maneuver. Even a small misalignment could fry the ships, due to the power of the lasers involved. Working with police and intelligence services, mission security must thwart the upcoming attack.

IMAGINATION

Unfortunately for the real world, feasible space travel is still decades away. Most of these engines are still in the theoretical or proof-of-concept stages. Scientists still working on sending human beings to Mars, let alone Epsilon Eridani. Luckily for gamers, wherever current technology fails, imagination can step in. (If nothing else, it’s often far more interesting.) This information can be used to add a splash of realism to colonization campaigns, as well as expand adventure opportunities. If getting there isn’t fun, why bother with the trip?

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“Interstellar Travel,” *Wikipedia*,

en.wikipedia.org/wiki/Interstellar_travel. Wikipedia’s page on interstellar travel. Contains links to much more information on the engine systems described here.

Scientific American, www.sciam.com. *Scientific American* often carries articles on spaceflight, as well as many other subjects of interest to sci-fi campaigns. The articles are written for non-science professionals, making them well-suited for GMs. Some are available, free of charge, on their website.

ABOUT THE AUTHOR

Chris Wong Sick Hong has a wife, two cats, and half an MFA. He’s been gaming since high school and loves the potential for open-ended storylines inherent in pen-and-paper RPGs. In addition to exploring game mechanics and balance, he’s currently improving his mission-design skills and dreams of eventually being able to run a persistent, truly interconnected world. In the meantime, he writes, reads webcomics, and feeds his cats.

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RANDOM THOUGHT TABLE

HOW FAR DO YOU NEED TO GO?!

BY STEVEN MARSH, *PYRAMID* EDITOR

How far away the colony is from the homeworld greatly impacts the flavor of the campaign. From the point of view of conceptualizing the campaign, “far” is a measure of *time*, not distance. After all, a colony that’s 100,000,000 light years away could still be trivially close if spaceships are capable of traveling 100,000,000 light years in an hour (or if you can step through a wormhole chamber), while a new world that’s one light year away seems like an impossibly far distance for us on modern-day Earth. This time frame greatly influences the flavor of the campaign, as it helps to determine how closely tied the homeworld and colony are tied.

THE WORLD NEXT DOOR

If the trip to the colony only takes a week or less, then extra supplies, settlers, and protection are at most 168 hours away. Perhaps most importantly, return trips for colonists to the homeworld (vacation or permanent) are much more likely. It would be a very unusual – and potentially interesting – “colony alpha” campaign if there is a constant tether between the colony and Earth (we could keep typing “homeworld,” but let’s be honest). There could be tensions between the “perms” – those who have permanently resettled onto the colony – and the “temps,” who only commit to tours of duty on the mudball. Maybe the PCs are police (either perm or temp) who are assigned to keep the peace; regardless of their allegiances, they could feel political or personal pressure either to bring in extra resources from home – if faced with a difficult situation – or avoid escalating the matter with the homeworld – so that the colony can prove its self-sufficiency. And, of course, they could feel *both* pressures on the same case . . .

I HOPE THIS LETTER FINDS YOU WELL . . .

If the colony and Earth are still within a reasonable distance – say, within one to three months – then some of the

same situations as “The World Next Door” arise. Many crises can be coordinated so that they can be resolved before becoming dangerous; when you check the logbook and see that you’re down to a three-month supply of Cureitall, fix the problem fast on your own or place an order from Earth. The relative closeness allows for a certain amount of communication between the two places, as well. It’s much more possible to maintain contact with family back home in the form of letters, recordings, holovids, and the like, and – depending on the cost of the journey – any news is likely to be at most out of date by about twice the length of the journey. Thus, if the journey is three months, then any news they get has a good shot at only being six months old or less.

But, in most cases, “casual” travel between colony and homeworld is greatly discouraged. This is especially true if it is difficult to prepare for the return journey. If it takes three months to amass the resources necessary to relaunch the *ISS Pogo*, and it looks like it’s going to be a harsh winter, then there will be a lot of pressure on colonists not to be “defeatist.” Those three months will probably be spent working harder to try to survive the season.

This time frame is most akin to what colonists from Europe encountered when they came to the “New World.” For example, the journey of the *Mayflower* took 65 days to get from Plymouth, England, to Cape Cod, Massachusetts. This type of campaign is best suited if the gaming group wants the colony to have periodic contact with the world they left behind, but they don’t want constant interactions between the two.

Of course, even if the journey doesn’t take much time, it’s still possible for there to be relatively limited physical contact. It only takes a few days to get to the moon from Earth, but we’ve let decades pass between moon landings because of the expense and logistics. Presumably if there are human lives involved that window shrinks considerably – we make it up to the International Space Station fairly regularly – but it’s still not as common as getting from New York to Los Angeles.



Colony campaigns are a good excuse for “troupe style” play. (Tip continued on p. 39.)

From a gaming standpoint, it's quite possible to use this option to make the colony as close or as far removed as the demands of the adventure call. If it suits the campaign for years to pass since the last homeworld contact, that's fine . . . but salvation or complications can be as soon as a month or three away, if need be.

IT WAS 20 YEARS AGO TODAY

From a game standpoint, most larger time frames simply meld together. Anything longer than a year or so falls outside the scope of most adventures, and enters into the realm of "more or less out of contact with the homeworld." While to the *colonists*, there's a huge difference psychologically between "it'll be two years before you can get a letter from your parents" and "you'll never, ever be able to contact your parents again," it's not that big a difference for adventure logistics, which usually happen over a shorter period. If it takes two years to get additional aid, supplies, or colonists, then – as far as solving any short-term obstacles – the homeworld might as well be a billion years away . . . the colony can get eaten by a lot of space bears in two years.

Still, it's possible to incorporate a larger time frame into a campaign. For example, let's say the homeworld launches an additional contact ship every five years, and the colony is expected to re-launch that vessel back home (presumably filled with tribute, information, loot, etc.) anytime within a week to 2.5 years after its arrival. In this case, the five-year expected arrival of the ship is probably awaited as a great festival or holiday. At the very least, it's an event of great interest, akin to national election days in many democratic countries. Conversely, depending on how well or poorly the colony is doing, the return vessel might be a time of great pride ("Let's show 'em what we've accomplished!") or dread ("Let's hold out another month and hope we can cobble together something!"). The latter could be especially stressful if the return of the craft is a requirement to receive future shipments – and this condition need not be sinister, as the homeworld may only have a couple of the ships capable of making the trip.

Nevertheless, in this setting, the colonists are probably on their own at least 95% of the time . . . and that figure can jump to 100% if the colony consisted of a one-way sleeper ship, if the homeworld was eaten by space bears, or if politics render contact between the old and the new impossible. ("Grandpa, why was the colony ship called *Convict One*?") Such a setting can be as optimistic or bleak as the environment and situation surrounding the colony.

THE HYBRID

One of the most interesting approaches is to mix and match the length of time it takes various forms of transport between the homeworld and the colony. An obvious example is to make FTL communications much faster and convenient than cargo or crew; maybe Colony Alpha can receive weekly updates,

Very Varied Variables

It should be noted that determining the time (and thus the "distance") between colony and homeworld can pin down the campaign into specifics that could prove problematic. For example, developing jump drive to allow the colony that's seven light-years away the ability to contact the homeworld within a week may open up the can of worms that the colonists might try to explore other worlds. A star that's one light-year away is a weekend trip in that case.

Then again, maybe it doesn't make a difference. For example, if there's a "stargate" that allows instantaneous contact between Earth and Colony Alpha, then it doesn't matter how far way it is; you're stuck with the two ends of the gate you start with. Likewise, maybe FTL technology takes a set amount of time (such as in the *Traveller* universe), or maybe FTL drives can only go a set amount of time or distance; if the only discovered FTL drive is capable of going *exactly* 11.8 light-years before requiring planetary refuelling, then the number planets in the Earth's fledgling space-empire are very limited regardless of how fast it can make that trip.

messages, and recordings from home, but additional supplies or colonists take a decade to get there.

But there are many other possibilities. For example, what if it's possible to send individual people very quickly, but non-organic matter takes decades or more. (A variant of this idea can be seen in the *Terminator* movie series.) This would allow limited communication between the two – how good are you at memorizing things? – as well as furloughs home and replenishment of staff and crew. But, if the heavy and personal gear were sent decades before, it would allow for an interesting take on a Colony Alpha campaign: The heroes show up on their habitable planet, naked, looking for the stuff they hope made its journey correctly . . . especially if the only means of making the teleporter home are contained in that gear! (As a limitation on this, perhaps organic matter can be sent very quickly, but attempting the journey more than once a year carries with it a risk of subtle psychosis; do the heroes chance using the cross-space teleporter once more, knowing that their minds might succumb to darkness?) Inversely, perhaps it's fairly quick to get unmanned cargo ships between the two, but real-time communication is impossible and organic matter takes exponentially longer. This could be because FTL travel for organics needs to be slower or requires more resources than secured cargo that doesn't care if it's jostled to the colony.

Ultimately, it's often easier to begin with the ending and walk backwards. If you start building a Colony Alpha campaign with the answer to "how far away do you *want* them to be?" then the questions that get you to that point fall into place.

ABOUT THE EDITOR

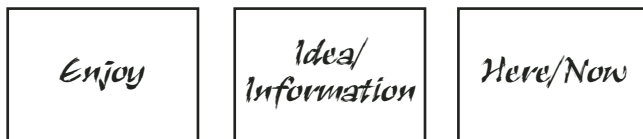
Steven Marsh is a freelance writer and editor. He has contributed to roleplaying game releases from Green Ronin, West End Games, White Wolf, Hogshead Publishing, and others. He has been editing *Pyramid* for almost nine years; during that time, he has won four Origins awards. He lives in Indiana with his wife, Nikola Vrtis, and their son Sam!, who is a two-year-old force of nature entirely worthy of his exclamation mark.

ODDS AND ENDS

ALIEN COMMUNICATION CARDS

Many sci-fi stories revolve around attempting to converse with alien sapient species. One interesting technique to represent this arduous struggle is to create communication cards. After each successful interaction with an alien intelligence, the GM can provide one or more “communication cards” as a reward. These cards each contain a concept or word, which the player can string together to form sentences or concepts.

The number of cards given can be based on an appropriate game mechanic. For example, if a player succeeds in a linguistics roll by 3, then the GM might provide three cards that can be used in future interactions, in addition to permitting the original communication to be successful.



Players can create and use multiple copies of a word their characters “know” when forming sentences. The player can explain to the GM what concept he was trying to convey, and the GM will determine if he was successful in using his words to do so. If so, then no communication roll is required. In addition, these words can be given to other players, enabling them to attempt to talk with the alien race, even if their PCs don’t have any appropriate skills.

Campaign Ideas

- The “heroes” are saboteurs placed in low-level position of the colony. Can they elevate their standing, cause the settlement to fail, and escape without being detected or their wrongdoing revealed?
- Two groups of sleeper ships from two worlds (one Earth, one alien) complete the one-way trip to an alien world at roughly the same time. Now what?
- The heroes find a habitable world they have a shot at reaching from Earth with primitive FTL tech. They get there and discover that Earth was this world’s “Colony Alpha,” in the distant past. It’s a mystery spanning two worlds.
- “Colony Alpha” is a long-ago “myth” the heroes are trying to find. What ancient secrets are buried there? Why did it disappear?
- The entire series is set before a Colony Alpha campaign, with the heroes using their politics, knowhow, and influence on Earth to get the ship built. The “epilogue” is learning how successful (or not) the colony mission is.

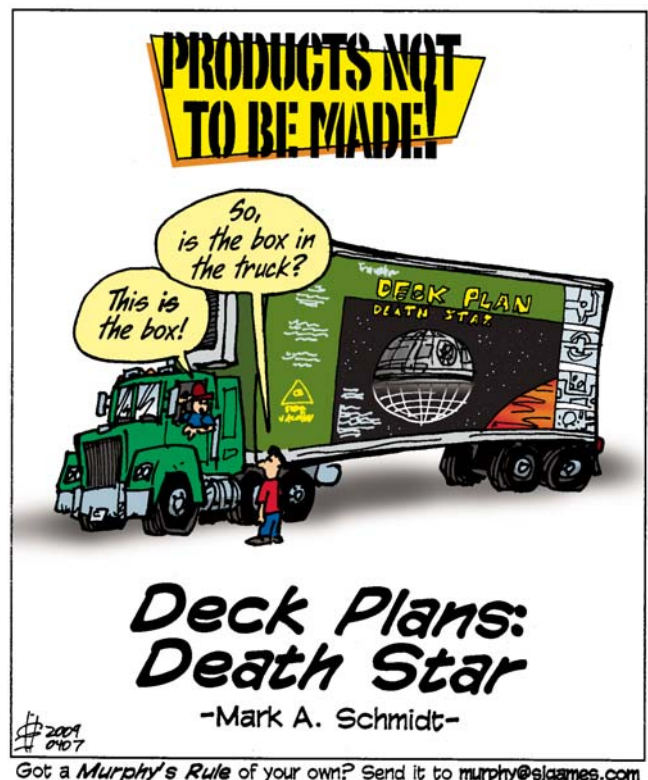
Example: After many discussions with the mysterious Whadidsae, the player has these cards: “Me (Speaker),” “You (Listener),” “Here (this exact spot),” “Trade/Barter,” “This (item/person the speaker is touching),” “That (item/person the listener is touching),” “Today/Now,” “Tomorrow/Later,” “Food,” “Weapon (generic term),” and “Fuel.” The player strings the cards together to form the sentence, “Me (Speaker) Trade/Barter You (Listener) Food Today/Now Me (Speaker) Fuel Tomorrow/Later.” (In other words, “I want you to give me food today, in exchange for fuel later.”) The GM decides this sentence succeeds in conveying its meaning.

The GM also might generate cards for the alien species, to represent its ability to understand these weird humans.

Building sentences this way is obviously a slow process, and should only be used when the GM wants the difficulty of communication to form a long-term campaign complication.

MURPHY'S RULES

BY GREG HYLAND



RECOMMENDED READING

COLONIZING THE STARS

BY ANDY VETROMILE

Humanity will not establish its first colony until someone actually tries to get somewhere, so let's start with the trip. The journey over might produce adventures all by itself, and if the Game Master is willing to let the players take part in determining the direction the action takes (well, nudging it a little, anyway), an exploration game is just the ticket. A game like *The Great Space Race* (\$29.99, Kenzer & Co., www.kenzerco.com, a drop from the initial \$50 price tag) is a quick and entertaining way to run a course among the stars. The ships against which one competes could be a pursuing alien species that seeks to keep humans out of their systems; an enemy government from Earth trying to outmaneuver their political foes for the coveted role of "first to colonize"; or just other members or branches of the participating fleet engaged in a bit of friendly rivalry. ("Last one in orbit has to set up the septic system.")

Another highly recommended choice for this brand of exploration, the theme of *Starfarers of Catan* (\$60, Mayfair Games, www.mayfairgames.com) is one of competition for worlds, influence, and resources. The GM has his work cut out for him fudging the metaphor if he wants his heroes to suffer a bit of isolationism. The card version, *Starship Catan* (\$30), is a little more flexible, and the GM could play it against the rest of his group to make it more representative of the "us versus them" mentality this kind of campaign would demand.

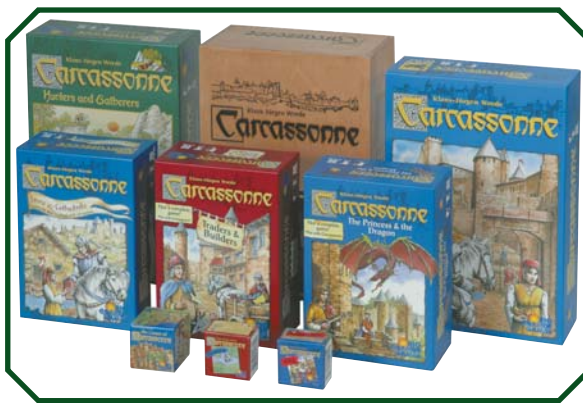
The Amazing Space Venture (first a "great" race and then an "amazing" venture – things must be going pretty well out in the inky blackness) is a good space-exploration abstraction from SherCo Games (\$49.99, www.shercogames.com). It skirts the line between the trip in and the settlement efforts that follow. This way the GM not only has an idea what happens on the planet (there are a number of cards that detail what the planets are like), but what kinds of events surround this area

of space. The included pirates and space stations could figure into it – maybe some of these belong to other races living out this way, or they could just represent internal threats that arise as the colony prospers. Perhaps the pirates represent the disenfranchised members of the expedition, or they might be a group of automated servants who took over a few key craft and now seek to establish an opposing city with stolen supplies.

Unless the GM has a good idea what there is for the explorers to encounter once they make planetfall, *Carcassonne* (which now has two "big box" collections available from Rio Grande Games, running \$69.95 and \$75, www.riograndegames.com) allows a sort of organic flow to determining the size, shape, and arrangement of various elements in the newly formed capital city. The GM may choose to use it to randomly work out such formations, just like a real city can get away from its planners, as much as they may work to the contrary.

If there was once an alien race that laid claim to the lands, however, a better choice might be one of the entries from the Mask Trilogy (also from Rio Grande Games). *Tikal*, *Java*, and *Mexica* are games of exploration and construction amid the jungles of Central and South America. *Tikal* leans more toward the uncovering of old ruins

and thus makes a better fit for humans who find their brave new world sits atop what's left of a brave old one; development of the area creeps in with *Java*; and *Mexica* is about creating not just a new city but the infrastructure that serves it.



In a "troupe style" colony game, each player runs a low-power PC (ordinary colonist), mid-power PC (specialist), and high-power PC (colony supervisor, founder, etc.).

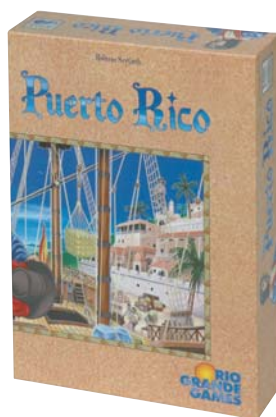
The thrill of creating a whole new way of life might benefit from revamping a few older favorites, or at least redefining the rules while no one's looking.

All three games vary in price and availability. *Tikal* and *Mexica* only run \$20-\$50, while *Java* commands \$70 or more.

Equally interesting from Rio Grande Games, *Puerto Rico* (\$44.95) mirrors the rise of that town, but the component that should make it more potent for a roleplaying experience is the actual use of roles. Each turn, a player takes on a position – the prospector, the builder, and so on – and uses it to increase his own standing on the island. This works in a roleplaying context in many ways. To start, the “first player” position switches each turn as a new “governor” is elected. This might represent how the players take turns, each deciding how he (and any associated allies and political supporters he has in the storyline) influence the course of events on the planet. Each round would therefore represent a year in the history of the colony. Fellow players might support him, and might even throw their weight (and the cachet of whatever role they took on) behind him. If the Game Master doesn't mind running a somewhat more competitive plot, a bit of amicable sword-crossing might charge the game's batteries some. If the players all want to be on the same side regardless, the GM could create a rotating series of NPCs who step into the governor's shoes and use the current persona as a guide to the prevailing attitude in the settlement. (“This governor may be working the people into the ground, but at least he's having us put up housing for everyone. The last guy tried to start a war between those rival crime lords downtown.”) The heroes then use whatever role they've taken to counter any activities they may disagree with. (“I'm the builder this turn, so I'm going to unionize the workers just in case the next governor decides to legalize picket lines.”)

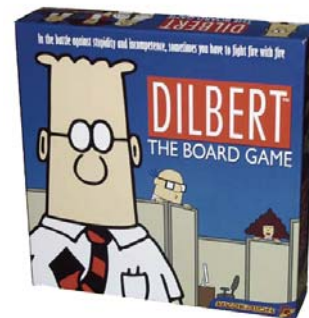
Putting together a colony sounds a whole lot like building up a new world following a holocaust. *The Morrow Project* (\$15.90 in PDF from TimeLine Ltd., www.timelineltd.com) was among the first to offer a setting like this. In it, a group of forward-thinking individuals foresaw the path humanity was taking and hedged their bets, creating caches of goods and raw materials to be used after the fall of civilization. Staffed by members who volunteered to be placed in suspended animation, the action begins when the team awakens to a brave new world in need of reconstruction.

The game plays things fairly low-key. There are science-fiction elements like laser rifles and powered armor (mostly depending on which branch or kind of team one is a part of), but little of it is over the top. The work is accomplished with



rigid science if not hard: Guns are more commonly slugthrowers; and the villains are usually garden-variety warlords, survivalists, and ideologues, with only a few mutants thrown in. An alpha colony isn't that well-stocked with characters, but if the job is to build a community from the ground up, there's no roleplaying game more directly dedicated to just that than *TMP*. The game has its adherents a few decades later, so it certainly has staying power, and the digital age has lent it even more longevity.

Bickering may not even get to the planet before contrasting personalities have to work out their differences. What about financing or arranging the details of the colonization efforts? Suppose, before anyone ever set foot on the launch pad, that there was dissonance among even those staunch supporters of the strategy? Bringing roles back into it, *Dilbert: The Board Game* (Hyperion, \$29.95, www.hyperion-games.com) is a deliciously wry take that effectively confers the humor from the daily comic strip to a board game format. The players are meant to take on one of the Dilbert characters and kill projects before they can lose happiness to the meaningless success of these enterprises. The campaign takes a dark and perhaps satirical turn if the GM uses the action as attempts to destroy all the red tape that keeps the colony from getting off the ground. (“If you want to get to Bogus II in six months instead of six years, someone's going to have to convince them to go with the fusion drive and not the old fission model. Of course, Senator Stubing owns the company that makes those old burners . . .”) Those with the highest rating of happiness are hailed by fellow settlers as the best negotiators with the various financial and political figures who stand for (or in the way of) the success of the space venture. In fact, once the colony has been established, those same people will probably ask the team to once again run the gamut of bureaucracy on their behalf. (“You showed 'em on Earth, buddy . . . now tell those fatcats how much New Vegas needs that alcohol still built.”)



ABOUT THE AUTHOR

Andy Vetromile is a freelance writer and editor with an insatiable taste for games. He's been reviewing them for over 10 years and still can't wait for the next release. He has also edited several *GURPS* books.

RECOMMENDED READING

A NEW LIFE AWAITS YOU!

BY MATTHEW POOK

When humanity moves from our current stage of exploring the mere edges of space beyond our atmosphere to that of finding a home on a far new world, it will be presented with a beguiling opportunity. An opportunity spoiled by three factors. The opportunity being of course, the chance to start anew in an Eden-like idyll far from the influence of our home planet and the hell that it has become (or that we have made it). It also marks the prospect of being able to leave all of our baggage behind and start over unencumbered.

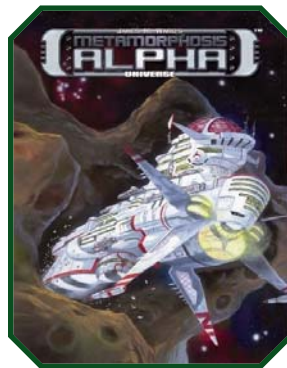
Unfortunately, the first of the spoiling factors is that baggage. Intellectual rather personal in nature (though doubtless that will play a spoiling factor also), it is comprised of culture, politics, and religion. No matter how long it gets stuck in retrieval, it will catch up with its owner – eventually.* When it does, the effects will doubtless undermine the future of the colony and colonists alike.

The second spoiling factor is the darker side of our nature – avarice, xenophobia, and the like – while the third is whatever people find there, be it a valuable resource, a rival colony, or an indigent species. These are not only likely triggers of our darker natures, but our arrival on planet will just as likely influence that rival colony or the natives.

As gloomy a beginning as this, its outlook is heavily influenced by our own imperial and colonial histories, so the prognosis on our future colonizing efforts is far from good. Yet while we would like our first planetary settlement to be a land of milk and honey, the roleplaying possibilities of establishing and running “Colony Alpha” are limited without the presence of the spoiling factors described above. All of these are present in some fashion in the settings described herein, but first we have to get there . . .

Idiom has it that getting there is half the fun, but space travel is itself a dangerous pastime, as evidenced by *Metamorphosis Alpha*, 4th Edition (\$29.99, Mudpuppy Games, www.mudpuppygames.com). In this updating of the original and first science-fiction RPG (published by TSR in 1976), the Starship Warden is still the setting, a 50-mile-long colony vessel set adrift following a calamitous collision with an

asteroid under alien control. The aliens first flooded the ship with a radioactive gas that instantly turned to dust crew and scientists alike, while warping and degrading the ship’s electronics and numerous artificial intelligences, and mutating the fauna and flora that it was carrying. Then they invaded. Fortunately some humans survived in suspended animation, but with much of the Warden unsafe, the ship’s main computer activated its robotic systems to assess the damage and begin decontamination procedures. This is Phase One of the campaign set aboard the Starship Warden, which has been expanded from the three phases seen in the game’s third edition to a total of six.



campaign set aboard the Starship Warden, which has been expanded from the three phases seen in the game’s third edition to a total of six.

In the initial phase, the players create and control robots attempting to save the ship. In the second phase, androids are activated and are available for play, and in the third, humans are added, the latter all combat personnel suffering from amnesia due to the radiation and accelerated awakening process. Phases Four through Six take the battle to the aliens aboard their asteroid, the humans leading a combined force of pure strain

humans, mutant humans, robots, androids, and mutant plants and animals, which are, of course, all available to play.

This campaign is very much the focus of *Metamorphosis Alpha*, its setting only described in broad detail, leaving a lot of work for the GM. It does not help that the Starship Warden is only described, whereas the asteroid is described and mapped out. Players will be frustrated by elements such as short lifespan non-reusable weaponry, guns disintegrating once their ammunition has been expended, and the cumbersome character generation and mechanics, which, while an improvement on the 1976 originals, are definitely not the state of the art for *Metamorphosis Alpha*’s publishing date of 2006.

* Footnote: This, of course, does not necessarily apply to actual baggage, or rather luggage.

Its original wackiness is still to be found though, in the various physical and mental mutations, and in the “Working Things Out” chart, included because everyone has forgotten how to use the technology aboard. Despite being old fashioned in all regards, *Metamorphosis Alpha*’s redeeming feature is that campaign structure, which with effort and another set of rules, will provide plenty of good gaming.

Having reached a new Eden, what will be found? Most commonly, it can be summed up as “Cowboys & Indians,” or a variation thereof. In *Dinosaur Planet: Broncosaurus Rex* (\$20.00, Goodman Games, www.goodman-games.com), a *d20 System* setting, the planet Cretasus is home to cowboys, explorers, farmers, hunters, miners, ranchers, rustlers, and settlers as well as the soldiers of the starfaring Confederate States of America and the Federal Union of Planets. All are drawn to the planet’s amazing fauna – dinosaurs! These are like those of prehistoric Earth, except for a slightly greater intelligence. These fearsome beasts are herded by ranchers, shot by really big game hunters, and even lived with by those who have gone native and become part of dinosaur tribes, some able to read the creatures’ body language and communicate with them. Some, like the Velociraptors, are renowned for their intelligence, and while written to be savvy NPCs, the rules could be adjusted to allow them as player characters. It all sounds crazy, but the setting is rife with potential conflict and thus gaming possibilities, and perfect if you wanted to recreate Ray Harryhausen’s *Valley of Gwangi* or the back-in-time dinosaur farming story “Flesh” from British comic *2000AD*.



Also for the *d20 System* and also including an American Civil War unfinished, *Deadlands: Lost Colony* (\$25.00, Pinnacle Entertainment Group, www.penguin.com) is actually the last in the *Deadlands* trilogy of RPGs/settings that begin in its most updated version with *Deadlands: Reloaded* (\$39.99), which use the publisher’s generic *Savage Worlds* system. *Deadlands: Lost Colony* requires the use of the original *Deadlands: Weird West* or its sequel, the post-apocalypse set *Hell on Earth*, to get the fullest out of its rules.

In *Lost Colony*, Banshee has been cut off from Earth, the connecting Interspace Tunnel closed, and the last word from home being one of impending doom. The remaining inhabitants either live in orbital habitats or mine the asteroids for Ghost

Rock, the mysterious mineral that has fuelled both the whole *Deadlands* line and various technologies from steam-tech to the more recent nanotechnology (used by Mutes, rare individuals capable of controlling nanites to transmute materials), or on planetside where they face numerous difficulties. Banshee’s colonists are survivors – of a war against the native Anouks, a race with a strong warrior tradition and sense of the planet; of the Anouk-created World Storm that scoured Banshee; and of a technology base that cannot be easily replaced. *Lost Colony*’s tone is definitely Wild West, with Rangers keeping the peace between colonists and natives (plus various other factions), but drawn in broad, almost cartoonish strokes.

Our last “Colony Alpha” draws not from the American West, but from the Australasian or Oceanian experience. *Blue Planet* (\$20.00, Redbrick Limited, www.redbrick-limited.com) describes Poseidon, an idyllic ocean world that can only be reached by a wormhole beyond Pluto. Initially settled by colonists bioengineered for an aquatic environment, along with genetically uplifted dolphins and orca, contact with Poseidon was lost following an ecological blight on Earth. When contact was made again, it was discovered that the colonists had adjusted to a more primitive lifestyle and the cetaceans wanted to live apart in Poseidan’s unspoiled ecology. The discovery of “xenosilicate” ore changed everything. Nicknamed “Long John” due to its ability to arrest genetic decay and thus the aging process, the discovery led to a rush for the rich ore fields, and armed conflict over their ownership. The mining, combined with a growing newcomer population and corporate presence, caused armed protest by ecoterrorists and native insurgents, forcing Earth to send in peacekeepers.

The world of *Blue Planet* is presented in rich detail, combining a strong ecological theme with a credible attempt at creating a believable alien environment. This demands a grittier set of rules and more immersive play, and there’s room to explore its depths from both sides, with the players as newcomers, as the original colonists, or even as cetaceans.

If all of this has sounded too strong a pessimistic note, then let us leave it up to Arthur C. Clarke to strike a more positive and hopeful outlook when he wrote in 1951 in *The Exploration of Space*: “The crossing of space . . . may do much to turn men’s minds outwards and away from their present tribal squabbles. In this sense, the rocket, far from being one of the destroyers of civilisation, may provide the safety-value that is needed to preserve it.”

ABOUT THE AUTHOR

Matthew Pook resides in Birmingham, England with the requisite pair of black cats and a perky Goth (not obligatory, but fun nonetheless), plus more games than he can eat. A pedant and proofreader by day, a reviewer by night, he has been gaming for nearly 30 years. He has been saying mostly good things about those games for almost 10 of those years now.

A new life awaits you in the off-world colonies! A chance to begin again in a golden land of opportunity and adventure!

– *Blade Runner*

LAST WORD

WITH KEN BURNSIDE

For the *Last Word* in each issue of *Pyramid*, we chat with someone in the game industry known for his work in the topic field. This month we talked with Ken Burnside, the creative force behind Ad Astra Games.

PYRAMID: So, what's the *Last Word* on the first colony?

KEN BURNSIDE: *Frontier*. Human history, even dating back to prehistory, has been dominated by the urge to go over the horizon, see what's there, and come back to tell your neighbors about it. The "first colony" is really a story, a trope, about what it's like to be "out there," and that appeals deep down to our inner Australopithecus.

Is this a practical desire, or a poetic "because it is there" drive?

One of the big changes on Earth in the 20th century is that we've either run out of real estate that we can grab, or we've grown a conscience about displacing the peoples who live on it. However, doing this has cost us our frontier myth. That same mythic quality of a frontier calls us, and we look to that first colony in ways that try to touch on that frontier myth.

The reality of the frontier, though, is tricky; arguably, living on Mars is a lot like living on Antarctica . . . except that it's colder, there's less water, and you can't breathe the air. Getting from Earth's orbit to Mars takes from 3 to 10 months in transit time. This is nothing compared to the last great age of exploration in the 16th and 17th centuries, but the cost is much higher in terms of "average wealth."

What do you think will get us to form that first space colony?

There will be more than an economic trigger to make that happen, and that's probably what's missing now. With merely an economic trigger, you don't get colonies. You get offshore oil rigs. The non-economic triggers for a frontier are the interesting ones to look at, historically.

The people who leave their comfortable lives to go live on the frontier tend to be, in polite terms, "nut cases." The societies rich enough to colonize space are also rich enough that the nutjobs would rather be cranky there than strap themselves into a tin can and have a huge pile of explosives set off underneath them to get away from it. Colonists are going to be selected for useful skills and that certain kind of crazy that says, "I absolutely don't want to live here any more." Coming up with that motivation is the key to making it an interesting RPG setting. It used to be "Getting my own farm land" was enough. Now, we're having trouble recruiting enough 20-year-olds to live on the farms we have.

Or "getting to express my religious beliefs."

Right. Now you can express nearly any religious belief you want, and there's a lot more interesting ways to make a living than

getting up at 5 A.M. to milk the cows. And yet, that desire for a frontier still persists.

So, who's going to form the foundation for that first colony?

The people who want to go there will, in all likelihood, be people who self-select for "I don't need much human interaction that doesn't come through a chat window." It'll also be people who self-select for at least small amounts of OCD – the sort of person who will triple check to make sure that every zipper is closed before going outside.

What gets interesting from there is a different question entirely: What sort of society grows out of that mix of introverted OCD candidates and the pressures of their libertarian paradises, but I strongly suspect that a space colony will turn into a hydraulic empire, at least on the local level. There will be a huge pressure to conform. If there's technology that lets you edit someone's belief systems, that will probably be used as a matter of public safety. It probably gets weirder from there. The question then becomes: What sort of person emigrates to this kind of colony once it's established?

I think that the one thing we know about a frontier is that it won't be a repeat of the Old West or the Age of Exploration. It will, in many ways, be stranger still. Just remember: The people who moved to a frontier thought that the cost of resettling was less expensive than making the local changes they needed to ensure their happiness – and they were usually less than 5% of their original population.

Frontier.

– Ken Burnside

So, speaking of the future, what's new in the world of Ad Astra Games that would-be colonist gamers should take with them?

Well, last year we came out with *Squadron Strike*, which is a 3D space combat game - and sort of the equivalent of *GURPS* for spaceship minis. Whether you want hard science or vector movement, or you prefer your spaceships to bank on the ether, the way George Lucas meant them to, it'll handle it. And you can even mix and match different reality levels on the map.

We're currently working on *D6 Dramatics*, which is, well, almost orthogonal to my prior work. Where my space combat games are highly simulative, *D6 Dramatics* is all about touching that inner myth that drives your character into action. It's based off of West End Games' *D6 Classic* system, and will be our "house engine" for future RPG licenses.

Including a few that deal with the final frontier.

Information about Ad Astra Games can be found at adastragames.com.



About *GURPS*

Steve Jackson Games is committed to full support of *GURPS* players. Our address is SJ Games, P.O. Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! We can also be reached by e-mail: info@sjgames.com. Resources include:

New supplements and adventures. *GURPS* continues to grow – see what’s new at gurps.sjgames.com, or visit www.warehouse23.com.

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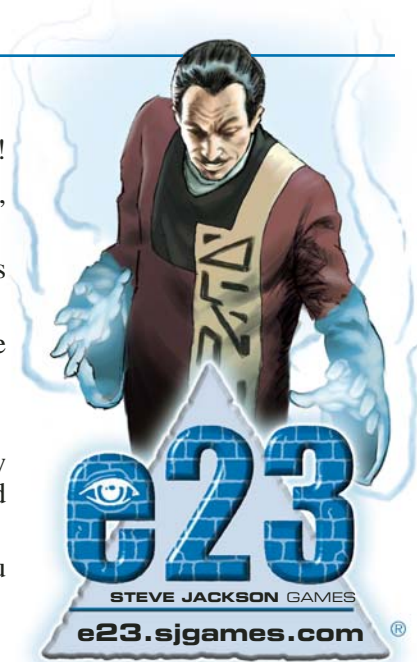
Errata. Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata pages for all *GURPS* releases are available on our website – see above.

GURPS rules and statistics in this magazine are specifically for the *GURPS Basic Set, Fourth Edition*. Page references that begin with B refer to that book.

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