

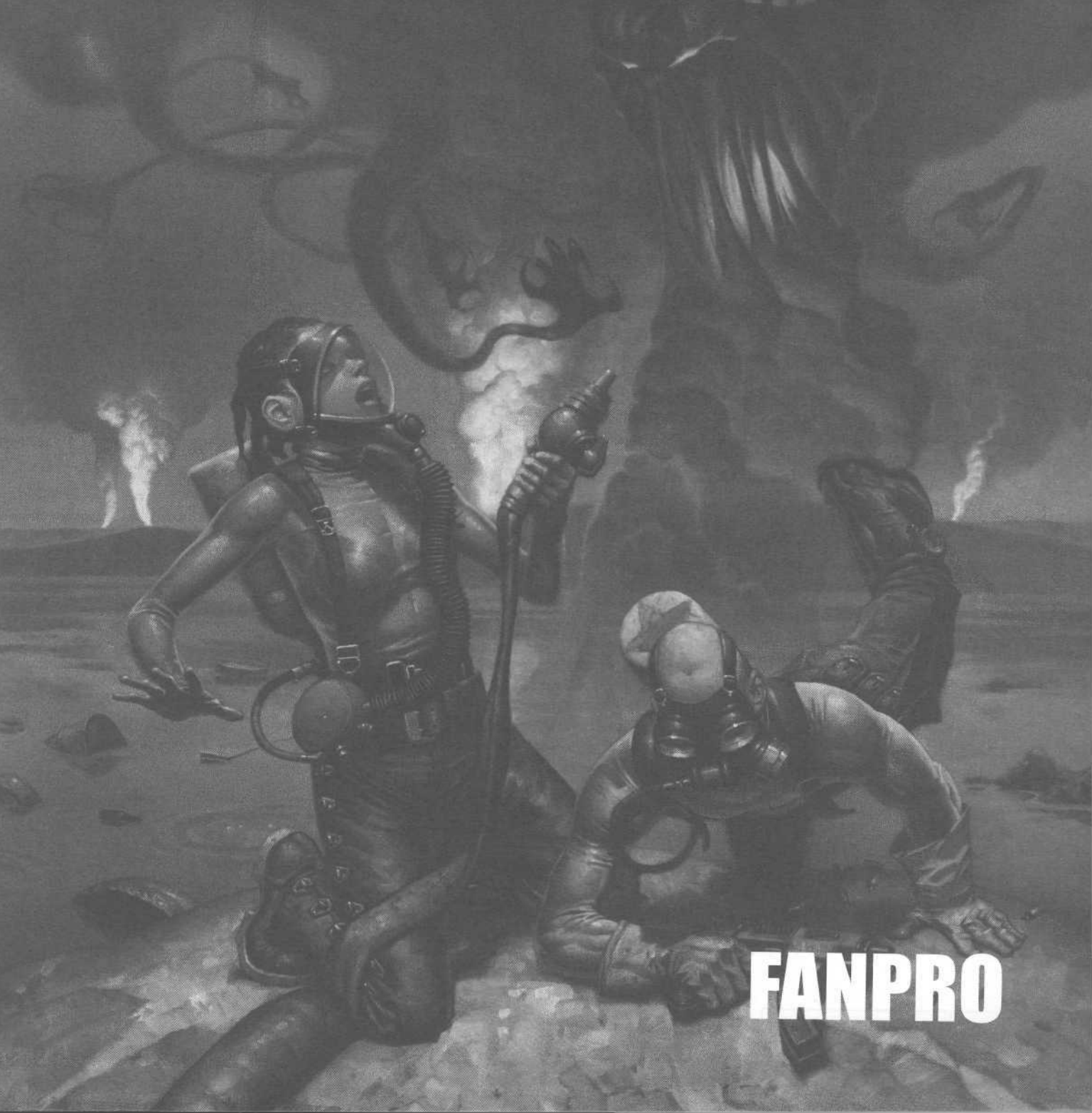
TARGET: WASTELANDS™



WKGAMES™

FANPRO

TARGET: WASTELANDS



FANPRO

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Published by:
FanPro LLC • 1608 N. Milwaukee • Suite 1005 • Chicago, IL 60647
Printed in the USA.

Exclusive booktrade distribution by Osseum Entertainment (www.osseum.com) and regional distributors.

Find us online:
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INTRODUCTION

Target: Wastelands delves into areas that are hazardous and treacherous to navigate. These hostile environments provide privacy and security for various agencies that wish to hide what they're doing from prying eyes. Naturally, these are exactly the sorts of places that shadowrunners will be sent into, at no small risk to themselves. Five different environments are covered here: toxic zones, deserts, the Polar Regions, space and deep sea habitats. Each chapter explains what these areas are like, what hazards they present, how to survive those hazards and what the corps and other powers-that-be are doing in these areas that's interesting.

Target: Wastelands is presented as a series of electronic documents posted by Captain Chaos, sysop of the vast Shadowland archive and data haven—the number one source for shadowrunners on what's going on in the world of *Shadowrun*. The documents come from the viewpoint of shadowrunners, for the consumption of other shadowrunners. These sources are each unique in outlook and perspective, influenced by their own particular prejudices and interests. Each article is marked up with a running commentary by other shadow denizens who add to, revise and contradict the original post. These inserted comments add innuendo, allegations, opinions, rumors, misconceptions, misinformation, lies and sometimes even the truth to the information presented. It is left up to the gamemaster to decide what information is correct and which is just filling, as appropriate to his or her game.

The first document, *The Poisoned Earth*, details how modern civilization has polluted the Earth with toxins, radiation,

genetic manipulation and human misery. It covers the side effects of this pollution and then presents a few select toxic areas: the North Sea, Tripoli, Tsimshian, Los Angeles, the Yucatán and the SOX.

Shifting Sands provides shadowrunners with everything they need to know about desert survival and provides overviews of what's happening in some of the world's largest deserts: the Sahara, the Namib, the Arabian Desert, the Gobi and others. It also explains what the Desert Wars are all about and how they're run.

The next chapter, *The Ends of the Earth*, talks about the Polar Regions and the dangers of these extremely cold environments.

It provides an overview of the Trans-Polar Aleut nation that claims the North Pole and surrounding lands, then describes the vast continent of Antarctica, with its remote research stations, dangerous weather and angry spirits.

Up the Gravity Well provides a history of metahumanity's expansion into space and provides some background on the independents that operate in the cracks. It also covers the various orbital stations, habitats and lunar bases that runners may visit or hear about.

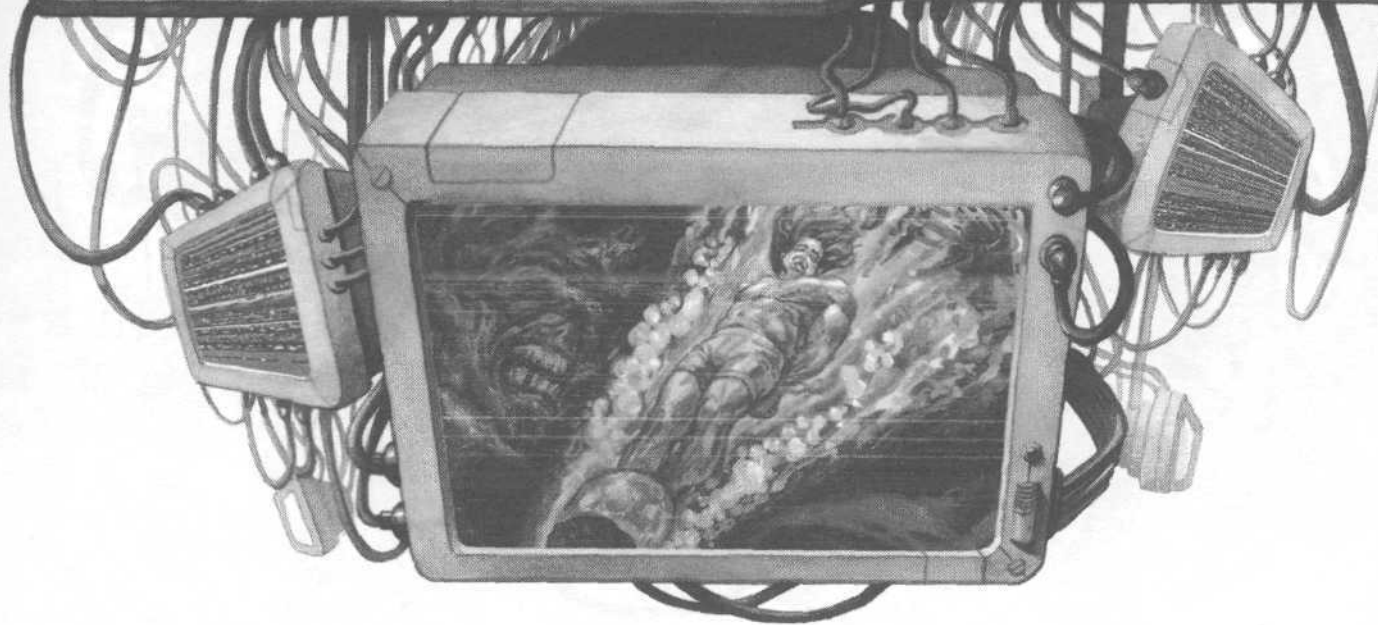
The *Riptides* chapter introduces a wealth of new material on deep-sea aquacologies and corporate plans.

Several specific stations are covered as well as new developments in undersea defenses and magic.

The final chapter, *Game Information*, provides all of the rules necessary to use the other chapters. It includes rules for survival and navigation, various hazards and dangers and includes new spells, critters, vehicles and gear.



INTO THE ABYSS



Welcome back, my friends. After enlightening everyone with the recent upload on places that, for most of us at least, are close to home (see the *Shadows of North America* file collection), I've decided to hit you with the data on some places that are very, very far from home.

Let's face it. Shadowrunners (and mercs) get sent to all sorts of inhospitable places. This includes places where no one else dares to go ... or at least where the corps only want to send expendable assets. I'm sure every single one of you has taken one of these jobs, whether it was a jungle outing, a sewer crawl or a mosquito-infested swamp run. Heck, a lot of us come from areas that the straights and norms fear to go—the Barrrens, ghettos and Third-World slums that they helped to create. Trips to these sorts of places can be dangerous, especially if you stick out or simply don't know what you're doing.

Then there are the runs to places that aren't simply dangerous—they're downright hostile. I'm talking about the sort of places that will kill you dead if you don't bring the proper gear and have a contingency plan or three. Places like the Sahara Desert, or Antarctica, or the moon.

Who goes there, you ask? Smirk now, but when Mr. Johnson offers you triple your normal pay to take a run like this, you'll do it. It's simple. The corps go to places like this because the inherent environmental danger provides built-in security and protection from prying eyes. They'll happily soak up the extra cost of building a research facility in the middle of nowhere if it means that their security is practically guaranteed.

Where the corps go, runners follow. But if you plan to walk out alive, you need to know what you're up against. How are you going to get in without being noticed? What sort of gear will you need to survive? What impact will the environment have on your weapons, your implants, your spirits and spells?

So that explains why I've pulled together this collection of files. Not only does it provide survival tips, it gives the lowdown on what sort of interesting stuff is going on in the shadows of these hostile environments. I know some runners who are specialists in these areas—the risks are high, but they get paid well for their expertise. I've tapped some of them to share what they've learned. I focused on five areas of work in particular: toxic zones, deserts, Polar Regions, space and deep-sea habitats.

If you ever have to put this information to use, I wish you the best of luck. You'll need it. And don't forget to send a postcard.

• Captain Chaos

Transmitted: 16 September 2062 at 03:02:08 (PST)

THE POISONED EARTH



In many ways, the following post best fits the title of this little collection. The other "wastelands" we talk about, like space and the deep ocean, are environments hostile to human life, but still part of the natural world. The subject of this document is wastelands of our own creation, the destruction of environments here on Earth. It's written by Jesse Windwalker, eagle shaman and radical ecologist. As you well know, Shadowland does not espouse or support any particular political viewpoint or agenda. It's our job to provide you with information and leave the decision-making up to you. But I've got to tell you I'm not what most people would consider a nature-lover. In fact, there are times when I'm so busy I forget there's a world outside the Matrix. I've never been involved in any kind of ecological cause and still the information in this file scares the ever-loving drek out of me. Take a look at it when you're planning a shadowrun into one of these literal hells on Earth, but take a moment to consider the wider picture sometime, too.

• Captain Chaos

Transmitted: 16 September 2062 at 03:41:30 (PST)

by Jesse Windwalker

The Earth, our Mother, is dying, and we're the ones who are killing her. Not quickly and cleanly, either. We're torturing her with poisons, slashing and burning her, choking her to death in our waste. Don't like that image? Is it too harsh a reality for you to deal with? Too bad, because it's the truth. Humanity (and I include all *Homo sapiens* in this) has been mounting a systematic assault on the ecology of this planet for more than two hundred years now that will result in the eventual extinction of life if it's not stopped. That's a fact. It's also a fact that we've already made many places on Earth unlivable, harbingers of what is to come for the rest of the world if something isn't done.

I'm not talking about recycling or buying "green" consumer products, either. I'm talking about a complete change in the way we live our lives and view our relationship with the Earth and all her creatures. I know it's a tired old song you've heard so many times before, and most of you are probably already tuning out what I have to say, skipping down to see if there's actually some *useful* information in this document. Well, this is the most useful tip you're ever going to get.



One way or another, life on Earth is going to change radically within only a few generations, and it's up to us, every one of us, to decide how it's going to change. We will either grow up, put aside our arrogant belief that this world is here for us to use, and learn to live in harmony with nature, or our existence as we know it will end. We will either be dead or changed into something we wouldn't even recognize as human. The changes have already started. If you think that's alarmism, keep on reading and tell me what you think at the end of the document.

There are ecological hazards aplenty to deal with right here and now, all over the world. If you live outside the laws of society, you're likely to see a lot of them one way or another. So you need to know what to expect and how to survive in some of the most hostile places on Earth, hells of our own making.

- Just for the record, I've moved the ecological debate to the appropriate SIG. Anyone who wants to discuss the pros or cons of particular ecological views can go there. Please don't clutter up this file with such posts unless they're on-topic. Thank you for not littering. <display_grin>

- Captain Chaos
"I am everywhere!"

A SEA OF POISON

We've run out of places to dump our waste. In fact, we ran out of places before we even began, simply because we're producing waste faster than the natural systems of the Earth can deal with it. We're also producing wastes that the cycles of nature can't deal with in anything less than geological time, if ever. Vast areas of land and water are contaminated with industrial chemicals, heavy metals, and a range of other poisons deadly to nearly all forms of life. But they're vital to the life of the corporate entities producing them and to the people who buy the corporate propaganda that they can't live without their products. So the pollution continues, despite any and all efforts to stop it. All the recycling, emissions control initiatives, and anti-pollution policies are like trying to bail out a sinking luxury liner with a sieve.

These pollutants come from four major sources: as byproducts of manufacturing processes; from waste disposal sites and landfills; from accidental spills and containment failures; and from actual use of some products.

INDUSTRIAL TOXINS

All kinds of manufacturing processes use or create chemical contaminants that are released into the environment. This includes the emissions from power plants burning fossil fuels, along with chemical byproducts from the manufacture of plastics, petrochemicals and a wide range of other goods. Despite emissions laws, many of these byproducts are still released directly into the environment, usually the air or water. Smoke stacks pump out enough sulfur dioxide to make going out in the rain in many parts of the world without a chemically treated slicker enough to get you a nasty rash (if not worse). Large areas of coastline, to say nothing of lakes and rivers, are so

heavily contaminated that nothing can live there. If you're lucky, the government will post warning signs telling you to stay away. If you're not, or a company is trying to cover up ground-water contamination, there may be no way to tell apart from doing tests on water samples.

- This is one area where magic sometimes proves helpful. A magician can determine with a spell if a water sample is contaminated and some magicians (particularly shamans) can tell if an area is contaminated simply by looking at it in astral space. Of course, the services of a magician aren't always easy to come by, but magical evidence presented in court has held up in some pollution and civil action cases.

- Dr. M

In addition, numerous manufacturing plants pour off undiluted corrosives, poisons, and other noxious byproducts. The construction industry discharges slurries of gypsum, cement, abrasives, metals, and poisonous solvents. Another pervasive group of contaminants entering food chains is the polychlorinated biphenyl (PCB) compounds, components of lubricants, plastic wrappers, and adhesives. Hot, often boiling, water discharged by factories and power plants causes thermal pollution by increasing water temperatures. Such increases change the level of oxygen dissolved in a body of water, disrupting the water's ecological balance, killing off some plant and animal species while encouraging the overgrowth of others.

- That's what causes "blooms" of algae and other aquatic life near discharge pipes in rivers and oceans. The algae grows like mad in the warm, often nutrient-rich, water. If it clogs up the discharge system, the company has to do something about it, namely killing off the algae. How do they do that? Not by reducing the temperature of the water they put out, but by using chlorine and other chemicals to ensure that nothing grows in the area around the plant. Then you get chemical contamination, and the cycle goes on.

- Moxie

WASTE DISPOSAL

If the byproducts of manufacturing aren't released directly into the environment, they end up in a storage facility or a landfill sooner or later. Even in the best of circumstances, these toxic materials are sealed in containers and stored indefinitely, usually in warehouses or underground facilities, or buried in landfills. No container lasts forever. Sooner or later most of them leak, releasing toxic materials into the environment. The facilities aren't especially well guarded either. After all, who bothers with heavy security on their garbage?

- The stockpiles of waste materials in North America alone are truly staggering. Whole corporate facilities are given over to permanently storing millions of tons of deadly chemicals and compounds; most of it produced as waste material. It doesn't

take much to release that material into the environment, making those stockpiles popular targets for anti-corporate terrorists.

- Ferret

- I've also known some corps to stage runs under the guise of "anti-corporate terrorism" to sabotage another company's operations or just create a nasty media spectacle. "Oh look, Megacorp A was storing all sorts of nasty chemicals! They should have been more careful about safeguards! Do you really want to do business with them?" And drek like that.

- Silver

- There's also some cred to be made in getting samples of a company's waste products (seriously). It's like the chemical equivalent of going through someone's garbage. If the corporate eggheads can get hold of some samples from the company's manufacturing process, they can reverse-engineer some of how the corp does it. And like Windwalker says, security on waste-disposal facilities usually isn't as tight as at a top-secret corporate manufacturing plant.

- Prime Runner

In the worst cases, disposal of toxic materials consists of dumping them in a landfill (basically a hole in the ground) or illegally dumping them in some out of the way locale where they can't be traced back to the company. Corporations sometimes illegally dump waste materials right in their own backyards simply because they can. If a corporation owns the land, they can do whatever they want with it. If an extraterritorial corporation wants to foul its own nest, there's not a damn thing the local authorities can do about it unless they can prove that the corporation's waste materials are affecting the environment outside of their territory.

- With the increased demand for usable land in the urban sprawl areas, a lot of old landfills and similar sites just got paved over or buried, then built on. Now toxic materials from some of them are leaking into pipes, or leaking up from the ground into basements or through ventilation ducts. There are a lot of low-income housing units in places like New York, Newark, DeeCee, Boston, LA, and the other big sprawls that are sitting on top of stockpiles of poison. The scary thing is most of the people living in them can't afford to move anywhere else, so they just do their best to ignore the problem.

- Bluebird

DAILY POLLUTION

Burning petrochemicals in cars, trucks and jet airplanes produces several pollutants: nitrogen oxides, gaseous hydrocarbons and carbon monoxide, as well as large quantities of particulates, mainly lead. In the presence of sunlight, nitrogen oxides combine with hydrocarbons to form photochemical oxidants, among them ozone and eye-stinging peroxyacetyl nitrate (PAN). Nitrogen oxides also react with oxygen in the air to form nitrogen dioxide, a foul-smelling brown gas that's a

main component of the smog wreathing the major metroplexes. Though catalytic converters have reduced smog-producing compounds in vehicle exhaust emissions, studies have shown that the converters produce nitrous oxide, a "greenhouse gas" that contributes substantially to global warming.

In cities, air may be severely polluted not only by transportation but also by burning fossil fuels (oil and coal) in generating stations, factories, office buildings, and homes and by the incineration of garbage. The massive combustion produces tons of ash, soot, and other particulates responsible for the gray smog of cities like New York, along with enormous quantities of sulfur oxides. These oxides rust iron, damage building materials, decompose nylon, tarnish silver and kill plants. Air pollution from cities also affects rural areas for many miles downwind.

Every industry also has its own pattern of air pollution. Petroleum refineries are responsible for extensive hydrocarbon and particulate pollution. Iron and steel mills, metal smelters, pulp and paper mills, chemical plants, cement and asphalt plants—all discharge vast amounts of various particulates. Uninsulated high-voltage power lines ionize the adjacent air, forming ozone and other hazardous pollutants. Airborne pollutants from other sources include insecticides, herbicides, radioactive fallout, and dust from fertilizers, mining operations and livestock feedlots.

And these are all from things that people are certain they can't live without. Sure, they may agree that pollution is a bad thing and something should be done about it, just so long as that something doesn't involve taking away their cars or their electricity.

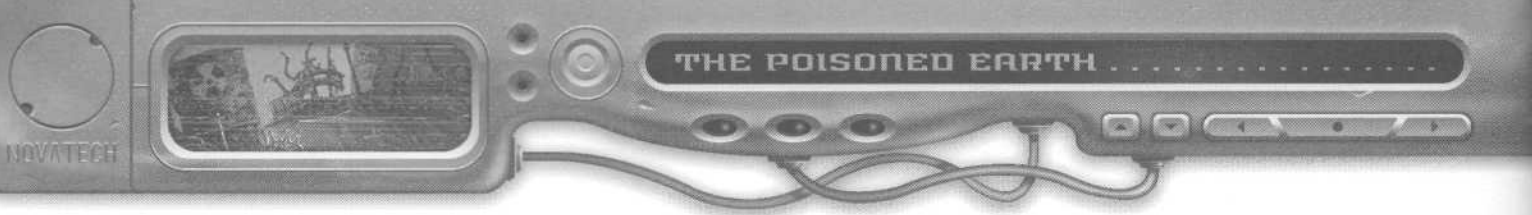
- Air pollution can get really bad in some parts of the world. Breathing masks are considered part of your everyday wardrobe in cities like LA, where a "bad air" day can force nearly everyone to stay inside and you hear regular reports of people dropping dead just from breathing the air for too long.

- Blg Sir

- There are also all the chemicals people use on a daily basis, from cleansers and detergents to things like bleach and other household chemicals. Lots of them get dumped down sinks or into toilets, ending up in the sewage that's backing up treatment plants all over the world. Treatment at some plants is slipshod to say the least, and tons of raw sewage is released into waterways on a weekly basis.

- Mist

- The big agricorps (and plenty of the small-time farmers, too) use a variety of pesticides and other chemicals to help protect their crops, along with powerful fertilizers to replenish the soil, which can be toxic in large enough concentrations. Those chemicals get into the soil and get washed into the ground water and waterways by rainfall. Every year a new pesticide or agricultural chemical gets banned. The corporation that makes it just discounts it and sells it to people in a country or state



where it is legal. Some of the pesticides being used in parts of South America, Africa, and Asia were outlawed in North America and Europe decades ago.

- Rainbow Warrior

TOXIC ACCIDENTS

If toxic materials aren't dumped into the environment on purpose, they're spilled there by accident. The producers of all these poisons usually want to dump them far away, so waste products have to be transported elsewhere, either by truck, by ship or (sometimes) by air. Anywhere along the way it's possible for these chemicals to leak out into the environment and contaminate an area. Not just waste products, either. There are plenty of "useful" chemicals and materials that are toxic to the environment if they're allowed to leak. In order to "safeguard their employees" (and cut costs) a lot of the transports carrying these materials, from trucks to tankers, are drones controlled by autopilot systems and sometimes a remote rigger. That makes it all the easier for one of these vehicles to suffer a mishap along the way.

- That's true. There's been an increase in the number of chemical spills and accidents involving drone-transport over the past ten to fifteen years, but it's only a slight increase, and drones have cut down on the number of accidents due to negligent crewmembers or pilots.

- Rigger X

- Maybe so, but drones are also more vulnerable to hacking or override from an outside source looking to either steal the drone or cause an accident. I'd be willing to bet a substantial percentage of "accidents" involving drone transports aren't accidents at all, but deliberately caused for any number of reasons.

- Don Coyote

Oil spilled accidentally or flushed from tankers and offshore rigs (over a *million* metric tons annually) pollutes beaches and smothers birds, fish and plant life. In 2058, the 34 different oil spills reported worldwide involved a total of 29 million gallons of oil (and those are just the reported ones). In addition to its direct damage to wildlife, oil takes up fat-soluble poisons like DDT, allowing them to be concentrated in organisms that ingest the oil-contaminated water and passed up along the food chain. Both DDT and PCBs are still manufactured in many parts of the world and are now widespread in the Atlantic and Pacific Oceans. In addition, tarry oil residues are encountered throughout the Atlantic, along with styrofoam and other plastic rubbish. Plastic bits litter sections of the Pacific as far north as Amchitka Island near Athabaska. Garbage, solid industrial wastes, and sludge formed in sewage treatment are commonly dumped into oceans.

- It doesn't take much to do a lot of ecological damage, either. A spill from a damaged tanker in the North Sea created the Scottish Fringe Toxic Zone, hundreds of square miles of lifeless, contaminated shoreline. Other coastal areas have suffered sim-

ilar damage, like Big Sur in California or coastal areas of Florida.

- Tarlen

- The Scottish Fringe Zone is actually something of a special case, term, and a weird one at that. The damage to the tanker that caused it to hemorrhage petrochem into the North Sea was definitely not an accident, but clearly the result of some kind of explosive. There was a fierce storm in the area at the time, which should have driven a lot of the petrochem away from the shore, but it didn't. Finally, the crude that leaked from the tanker made its way twenty fragging miles inland, uphill! There's no way that happened by accident. Nobody knows how it happened, but all the signs point to the work of a pol-soner shaman of some kind.

- MesoStim

TOXIC DAMAGE

A survey done in 2058 by the UCAS Environmental Protection Agency found that 60 percent of that nation's lakes, rivers, and estuaries were too polluted for such basic uses as drinking, fishing and swimming. The pollutants found include grit, asbestos, phosphates and nitrates, mercury, lead, caustic soda and other sodium compounds, sulfur and sulfuric acid, oils and petrochemicals. Surveys conducted in the Confederation of American States revealed similarly alarming amounts of pollution.

Virtually all water-borne pollutants are hazardous to humans as well as other species; sodium is implicated in cardiovascular disease, nitrates in blood disorders. Mercury and lead can cause nervous disorders and brain damage. Some contaminants are carcinogens. DDT is toxic and can alter chromosomes. PCBs cause liver and nerve damage, skin eruptions, vomiting, fever, diarrhea and birth defects. Along many shores, contamination by DDT, sewage, or industrial wastes has ended fishing and aquaculture because the sea-life there is too poisonous for consumption.

Dysentery, salmonellosis and hepatitis are just a few of the maladies transmitted by sewage in drinking and bathing water. In the UCAS and elsewhere, industrial wastes, municipal sewage and medical waste have contaminated and ruined beaches, riverbanks and lakeshores. Throughout the world, millions of people obtain water for drinking and bathing from streams and ponds contaminated with human waste. This type of contamination causes over a million deaths annually, mostly among children.

- Ok, that's it. I'm joining Terra First! D'oh—wait a minnit, they're eco-terrorists. They kill people too. Hmm. Makes you wonder how much of this is green hype and alarmism. "Down with the corps!" and all that drek. If you ask me, the corps are the only ones with the ability and the resources to clean up this mess.

- Clausen

- That's the way to spin it, corp stooge. Most eco-crews I've seen have ethical stances against killing, so they target property and profits instead. These are regular people who took one

too many acid rain baths or got sick of coughing up black phlegm and blood after a trip downtown on a smog-alert day and decided to do something about it. Sure, the radical eco-movement has toxics and hard-core militants who think whacking polluters is a type of aggressive self-defense on behalf of animals and a planet that can't fight back, but they're the minority. The real terrorists are the ones creating this mess, the ones who only care about profits and the bottom line. They're slowly but surely killing all of us.

• Judi

The damage done by toxic contamination is devastating. It can render entire areas unable to support life of any kind. More importantly, toxic contamination of soil and ground water can last almost indefinitely, rendering those areas unable to support life *permanently* (or as close to it as you can come in practical terms). The elimination of such toxins through natural means can take millions of years. Cleaning them up through technological means is expensive and difficult, therefore not a particularly profitable venture for corporations to undertake when they could be making more money on the industries that create the poisons in the first place (or medication and equipment to mitigate the effects of toxic areas).

Toxic contamination also has a way of spreading. Toxins leech into the soil and ground water, spreading out from the initial area of contamination to affect a much wider area. If food plants and animals are affected, the toxins can spread even wider, such as in the case of mercury contamination of fish leading to illness and death among people who eat those fish, or contaminated fruits and vegetables poisoning consumers.

• It's sad that one of the big selling points of vat-grown food is the fact that the growth vats are sealed and sterile, not like food grown outside, where it can potentially come in contact with any number of toxins. Natural Vat Foods even uses it in one of their catch phrases: "Natural Vat, safer than natural."

• DV8

• Yep, leave it to the corps to cause a problem, then find a way to profit from it. The megacorps dumped huge amounts of toxins into the air and water. Now they market home testing kits, water purification units, designer breathing masks for those "bad air days" and all kinds of medications to deal with the effects of long term exposure to pollutants and industrial chemicals. And you can bet that manufacturing those products generates yet more pollutants, and the cycle goes on ...

• High-Brow

• That may be true of the megacorps, but I know of some smaller companies that use magic and cutting edge tech for environmental clean-ups—and they're actually making a profit doing it. What about them?

• Ziggy

• Okay, yes, there are some companies (like Aqua Arcana out of CalFree or Earth Medicine in the Sloux Nation) that do environmental cleanups. But the thing is they're small businesses with enough work to keep them busy for the next millennium or so. Even with magic, environmental cleanup is slow, difficult, dirty work. They've got enormous overhead and they're not very profitable. They do what they do because the owner and employees are dedicated to their work, not because it's going to make them rich. Unfortunately, that's not what motivates most businesses.

• Bay Watcher

TOXIC SAFETY

So how do you survive a visit to a toxic zone? My best advice is to stay away from them, but since there may be one right outside your front door, that's becoming harder and harder to do these days. So take some of these hints I've gleaned from the people who have no choice but to live there.

Wear protection. Wear protective clothing designed to resist dangerous contaminants, particularly gloves and properly treated boots. Wear a breathing mask if you're outside and exposed to atmospheric pollutants or other toxins that can evaporate or generate dust that's drawn into the lungs. Cybernetic breathing filters are an option for some if you're planning on dealing with a lot of this drek. There's magic that can protect you from toxins, too, if you've got access to it.

Don't drink the water. Or eat the food, or consume anything else while you're there. Carry a portable water testing kit to see if water is drinkable and carry your own bottled water that you know is safe. As an aside, clean, drinkable water is worth its weight in gold in a toxic zone. If you bring enough, you may be able to sell or trade it.

Keep it clean. Washing regularly (with water you know is reasonably safe) can keep chemicals from building up on your skin and in your hair.

• Spellcraft comes in handy here. A makeover spell will clean minor contaminants out of your clothes, hair and skin. A clean water spell can provide you with good drinking or bathing water, and a clean air spell can give you some breathing room. Sterilize will eliminate hostile micro-organisms. Prophylaxis will help someone make it through a toxic area, while antidote and detox will help someone who's already been dosed with toxicity. I'm sure there are other spells and abilities around with beneficial or protective qualities, so do your research.

• Shetani

THE INVISIBLE FIRE: RADIATION

In the past seventy years, some eighteen nuclear power plants worldwide have suffered critical meltdowns, releasing radioactive material into the environment and creating radioactive zones around them that will remain "hot" (dangerously radioactive) for thousands of years. Despite this fact, the continuing demand for energy and the increasing costs of fossil fuels keeps dangerous nuclear fission reactors running and producing tons of highly radioactive toxic waste, while risking further meltdowns.



- There's an interesting thing about all those reactor meltdowns. Of the 18 Windwalker mentions, eight of them, or nearly half, took place in 2011, the "Year of Chaos" that ended with the Awakening. Now, a good portion of this can be attributed to other things that were going on that year, including a number of anti-nuclear riots sparked off by people who blamed radiation for the birth of so many "mutant" children that year (which were later recognized as dwarves and elves). But I've always wondered if there was more to it than that. Magic is one of the fundamental forces of the universe and so in a way is the power to split the atom. Evidence shows that magic and radiation don't seem to get along. Could the Awakening have in some way caused those meltdowns?

- Kether

Though nuclear fusion has come into wider use and fusion plants are considerably safer, they still produce radioactive materials (albeit on a much smaller scale), and poorer nations that can't afford fusion technology have been buying "second-hand" fission technology to supplement their energy resources. They follow the age-old argument that since the first world nations were allowed a hundred or more years to develop their industrial base and pollute the environment, they should have the same "privilege."

We know for a fact that radiation is extremely harmful to the environment and to all forms of life, but the "practical" argument favors whatever will satisfy the world's growing energy needs, regardless of the risk. Once again the needs of the moment win out over the needs of future generations. Shiawase's idea of placating arguments against nuclear fission power was to build a new power plant near the site of one that had *already* melted down. Since the area was already radioactive, what would a little more contamination hurt? They call it "putting devastated land to good use." I call it outright stupidity.

- Well, they're right. I mean, the Glow City area in Seattle (which is what Windwalker is talking about) is going to be radioactive for centuries. At least now it serves some kind of useful purpose. What the frag else are they going to do with the land?

- Wax-On/Wax-Off

- Putting aside the question of whether or not land must serve a "useful purpose" other than simply being land, perhaps Shiawase (and other corporations) could be looking into ways of cleaning up the damage to the land rather than twisting the knife deeper into our Mother's breast.

- She Who Knows the Night

Unfortunately, Shiawase's "clever" idea has started to catch on in the corporate community and some other companies have built reactors inside irradiated zones as part of an effort to "reclaim" them. Saeder-Krupp has done this in the German Alliance and Yamatetsu hopes to do the same in Russia. The extreme hazards of the physical pollution and risks to workers aside, I'm sure these corporations haven't considered how

much damage their facilities may do to the magical environment of those already poisoned places.

- Oh, I'm sure they have, Jesse. They just don't care.
- The Chromed Accountant
"It's all about dollars and sense."

In addition to the "hot zones" created by the partial and total meltdowns, there are the irradiated zones intentionally created by the testing and use of nuclear weapons. Though things haven't gotten as bad as some of the doomsday scenarios of the mid- to late-20th century (yet), there are more than a few places on Earth permanently scarred by the use of these weapons. Testing sites in North America, India, Pakistan, China, Australia, Russia and numerous islands and parts of the sea are contaminated, to say nothing about places like Hiroshima, Nagasaki and Libya, where nuclear weapons were actually used in warfare. The force of those blasts still reverberates on the astral plane, drowning out all else, and I don't know if the damage they've done will ever completely heal.

• Well, the physical damage done by the Hiroshima and Nagasaki blasts is all but gone, but I know what Jesse is talking about when it comes to the less tangible damage. Have you ever checked out the astral plane around those cities? The sense of doom and desolation is heart wrenching and there's a feeling like the air is being almost seared from your lungs. I know there isn't any air, and my astral body doesn't have any lungs, but that's how it feels. It's no wonder those cities—and so much of Japan—are so mundane. The Awakened just can't stand to live there for very long.

• Ryu

• Kind of ironic that the Native American Nations inherited most of the old U.S. nuclear testing sites in the southwestern desert. The sites are still off-limits to visitors, only it's NAN troops and shamans guarding them these days. Thing is, I've heard that part of the reason for the troops and especially the shamans is not to keep people from going into the old testing zones, but to keep things inside them from getting out. I've heard that shamans don't spend too long guarding radioactive zones because they're especially sensitive to getting sick from it. But there's also the concern, I think, that they might end up liking it too much ...

• Coyote

• That reminds me of something. I read that when Oppenheimer saw the first nuclear bomb test, he quoted from the Indian holy book, the Bhagavad Gita: "I am become Death, the Destroyer of Worlds." Fitting words, certainly, for the kind of awesome power he saw unleashed that day. But I've always wondered if there was more to it than that. I mean, it was nothing but a literary quote back in the 1940s, but now that we know magic is real, it sounds a lot more like part of some kind of spell.

• Shambanara

• Right, Oppenheimer, high priest of the god of Nuclear Chaos, sealing a sacrifice on a desert altar, seventy years before the Awakening.

• Silicon Mage

• I've heard stranger things in my day.

• BlackStone

• Hasn't anyone noticed how many nuclear explosions this century have either failed outright or been reduced in effect? Something has been interfering with the detonation of nukes! I'm not sure what it is—a side effect of magic, spirit intervention, dragon influence, who knows? The missiles launched at Japan during the second Korean War were duds. The Lone Eagle Incidents missiles were launched, but didn't explode in Russia. The Cermak blast in Chicago was somehow constrained from melting the entire city. What's the real story here? Has some Awakened power interfered with our ability to nuke each other?

• Tom Two

But again the megacorporations come to the rescue. With the Libyan cities destroyed by Israeli tac-nukes and the surrounding area hostile to life, they've managed to put the area "to good use" by turning it into a staging ground for the fabled "Desert Wars" exhibitions between them. They're bread and circuses for the masses and a "clean" way for them to settle their disputes in the time-honored fashion of dueling. And like the radiation, the blood and the violence sink into the sand and further poison the land, ensuring it will never recover from the damage done to it.

• I've been in more than one Desert War and I can tell you that Jesse is right about one thing: the background count in the Libyan Desert is positively obscene in places. It's a combination of the lingering background radiation and all the violence that's gone on there (and I'm not just talking about Desert Wars, either). Makes it damn difficult to sling spells there, but I actually think the corps like it that way. They've cut back on magical support and prefer to keep the Desert Wars "old fashioned." Funny thing is I know soldiers who like it that way, too; they feel magic has "spoiled" things for the mundane combat grunts. Go figure.

• Medea

Last, but certainly not least, are the radioactive areas created by the tons of nuclear waste materials produced by all those fission reactors. Nuclear waste remains radioactive for literally millions of years, so what's the best way of disposing of them? Usually sealing them up in drums and burying them in ferrocrete bunkers, or sometimes just in ordinary soil or landfills surrounded by chain-link and razorwire fences, as if radiation is going to respect a "KEEP OUT" sign and stay confined.

There was a time in the old United States when the Environmental Protection Agency and the Nuclear Regulatory Commission monitored the storage of nuclear waste to ensure it was (relatively) safe and basically a problem for the next gen-

eration to worry about. But things like the Shiawase Supreme Court case weakened the NRC's authority over the major corporations, making it harder to enforce regulations. The Ghost Dance War and the breakup of the United States put the final nail in nuclear regulation's coffin. These days the megacorps do pretty much as they please with their nuclear facilities and the waste products they turn out.

In fact, during the Crash of '29, many records on nuclear and toxic waste facilities were "lost", allowing corporations to sell or pave over land poisoned with deadly toxins. If residents or workers developed cancer or related ailments down the road, the corporation would just shrug and claim it didn't know the place was a nuclear waste dump when it sold it. The sad thing is, many corporate employees and even managers really *don't* know about some of these deals cut by their predecessors twenty and thirty years ago.

- Of course, now it's a lot easier to tell if an area is irradiated or toxic: just call a magician to look it over. It's easier and faster than most other tests.

- G-Force

- And more expensive, too. Magical consultants don't come cheap and their "expert diagnosis" isn't as Ironclad in a court of law as certified scientific tests that mundanes can confirm. Still, it is a useful way of testing places to find out if they're safe. Problem is, it doesn't pin any blame on the corporation responsible.

- Vivianne

TWISTED LIFE: GENETIC MUTATION

What are the effects of all the chemicals, contaminants, and radiation in the environment? Well the list of possible illnesses is almost too long to go into. The highlights include nearly every form of cancer, leukemia, heart and lung disease, skin disease, damage to the liver and kidneys, bone and bone marrow diseases and ... well, need I go on? The life expectancy of someone living in a toxic zone is probably half that of someone living in a "clean" area, and I'm only talking about the toxic zones considered "livable" by some authorities. The worst toxic areas slash life-expectancy down to months rather than years.

Most of the people living in toxic zones are SINless squatters, already non-entities to the corporate-government complex. If they become ill, they have no legal recourse, no access to medical facilities, no insurance, no nothing. The people with SINS aren't much better off. They may have insurance to help pay their medical bills, but you can bet that it's not enough. When the bills for long-term care really start mounting, they're enough to bury most low- to middle-income families, particularly when more than one member of the family gets sick. And they can forget about legal recourse. Most can't afford to hire attorneys. Those lawyers willing to work for a shot at a big financial judgment or settlement are quickly bought off by the corporations, buried under datawork and red tape or simply taken out of the picture altogether.

- Yep, I know more than one crusading lawyer who ended up on the wrong end of a corporate hit squad. Push them too far and the megacorps push back, hard. Oh, they'll try the velvet glove first, offering penny-ante settlements in exchange for iron clad no-fault documents or outright bribing their opponents to shut them up. But if that doesn't work, the velvet glove comes off and the iron fist comes down hard. After all, what makes more financial sense? Risking a lawsuit that could cost the company hundreds of millions of nuyen or paying less than a million to ensure that the problem never comes to light?

- Brother P-touch

- That's why some people hire shadowrunners for protection when they're going up against the big boys.

- Lady Ace

- It's also why some corps hire shadowrunners to ice people who are yapping too much—and the shadowrunners protecting them, if necessary.

- Deep Green

MUTANT NATIONS

Those are just the short-term effects of toxic zones. The long-term effects are even more serious. Exposure to radiation and many different kinds of chemicals causes damage at the genetic level. That damage sometimes leads to things like cancer, but it also leads to birth defects and mutations in offspring. The birth defect and infant mortality rates in and around contaminated areas are staggering, to say the least. Children are born deformed or crippled in ways that would limit them for life if born into an affluent family capable of taking care of them. Born into a poor environment to SINless parents, these children never even have a chance. Their lives are over before they even begin, becoming just another statistic. A large portion of the infant mortality rates in the Barrens and similar sprawl ghetto areas is due to toxic contamination. There are even cases of parents abandoning deformed or defective children to die.

- Making them tempting targets for ghouls or organleggers, or both. Of course, the ghouls tend to be the less picky ones.

- Cimmaron

- That's not funny, Cimmaron.

- Niko

- Didn't say it was, Niko. It just is. That's life in the 'plex for you.

- Cimmaron

- Consider this: orks breed faster than any other metahumans. We reach sexual maturity around age 10. Ork pregnancies last an average of just over six months, and women give birth to anywhere between four and eight children at a time (as a friend of mine once said, "any ork that doesn't have brothers and sisters wasn't born an ork"). The reason there aren't a lot



more orks around is because ork infant mortality is huge compared to that of humans, elves, and dwarves. Why? Simple: a lot of orks are either SINless or belong to low-income families. In addition to not being able to get proper medical care (even some mainstream hospitals still haven't adapted to the idea that there are five different subraces of humanity now), they have to deal with poor living conditions. Those include exposure to toxic contaminants. Birth defects and miscarriages are up among ork populations every fragging year, and since an ork "generation" can be as short as 10-15 years (instead of 20-30 for humans) the genetic problems snowball that much faster. Just another reason why people (read: humans) aren't so worried about pollution. After all, it's "only orks" who are suffering, right?

• Tuskadero

Miscarriages and even sterility are also common "side-effects" of living in toxic areas, leading to fewer healthy births with each generation. The children that do survive pass on a legacy of damaged genes and further toxic contamination to the next generation, compounding the problem. If things like birth defects and infant mortality in the worst areas of the urban sprawls seem bad now, just give it another generation or two, assuming there's much of a population left in those areas by that time.

NATURE GONE MAD

Mutation isn't limited to *Homo sapiens* by any means, either. Contamination of the environment affects the eco-system on all levels, from the simplest plant life to the most complex animals. In most cases, other forms of life are affected the same way we are, leading to harmful mutations and birth defects and eventually wiping out the entire species in the affected area. But in some cases there are other developments. People have been seeing an increasing number of mutant life forms in toxic zones, mutants that have adapted to their environment or developed "beneficial" mutations.

• What science fiction nonsense! Mutations don't develop like that, it takes long periods of time for mutations to establish themselves in a species' genetics and beneficial mutations simply don't appear at the rates Windwalker or any other eco-freak talks about.

• Skeptic
"Prove it!"

• You know sometimes, Skeptic, I swear you never leave your deck to even look out the fragging window. Mutants exist. I've

seen them. Hell, I've had them try and kill me before. I don't know why it's happening—I'm no scientist—but I can tell you there are things breeding in some of the toxic zones that make angry plasma look like poodles. Geez, you can accept the fact that dragons and unicorns exist but you've got a problem with critters that defy what little we know about genetics? Sheesh.

• Bung

• In his own unique fashion, Bung has struck the nail soundly. What we know about genetics is minute compared to what we don't know. If the Awakening has shown us anything, it's that there's more to the universe than we ever imagined before. Skeptic has a point: under normal conditions, mutation is rare and slow. But we're hardly talking about normal conditions here. There are chemicals contaminating these toxic zones designed as bio-agents, combining in ways no one has tested; there's radiation, the long-term effects of which are still being studied; and let's not discount the involvement of magic in this. Magic has caused new species and sub-species to spring into being virtually overnight. Who knows what that, combined with a mutagenic environment, might lead to? I am a scientist and I have to say that I'm not much closer than Bung to knowing exactly what's happening. But I do know he's right about one thing: mutations are real, they exist, and they are going to reproduce, sooner or later. When that happens, I have a sinking feeling that evolution is not necessarily going to be on our side.

• Doc

What kind of mutant life are we talking about? Well, there are reported cases of mutant devil rats in a variety of places (notably parts of the Seattle Barrens). The rats in question are bone-white albinos with dermal bone deposits giving them a degree of built-in "armor." The bites of these rats are also extremely toxic; either due to some sort of naturally produced poison or a virulent pathogen the rats carry. California authorities have been dealing with things like mutant salt-water leeches for years, creatures large enough to drain all the blood from a metahuman in a matter of seconds. Mutant kudzu vines in the Confederation of American States are an ongoing problem, since they're extraordinarily resistant to all kinds of herbicides and defoliants. And the list goes on and on.

• I've got a question. How do we know that these things are mutants and not just more examples of the Awakening? I mean, everybody thought dwarf and elf kids were mutants when they first showed up, and I read that scientists first thought a lot of paranimals were mutants, too. Maybe this is just more of the same?

• Wheeler

• Could be. The Awakening has certainly muddied the waters with regards to genetics and mutation. But in all the cases Windwalker cites, genetic testing and research has shown that the life forms have been genetically altered by exposure to mutagens. Although the Awakening might be a part of their develop-

ment in some way, their current condition can be traced back to some kind of mutation. Of course, the other thing that complicates matters is the issue of deliberate genetic engineering vs. random mutation. There are clear signs that some new life forms were designed, engineered by someone and then released, accidentally or intentionally, into the environment.

• Sagan

• Why would someone do that?

• Brother P-touch

• Any number of reasons, really. There's the use of engineered life forms in eco-management; things like predator-prey relationships, eliminating pests from crops, cleaning up certain ecological contaminants (like petroleum-eating bacteria), and so forth. Then there's paranormal security or the elimination of dangerous species from an area, field research of new strains of existing species, growth and development studies ... and those are just the intentional reasons. There are also simple accidents of a new life form getting loose and breeding. Once those new genes are introduced (especially if they're beneficial), it's difficult to get rid of them.

• Sagan

• Biotech corps are interested in gathering information on novel new mutants that crop up in and around some toxic zones. Apparently they provide all sorts of interesting biological information once they've been thoroughly dissected and studied. Odds are good that some of the new bioware that's come out in the past few years can be traced back to corporate research conducted on mutants ... and I'm not just referring to animals and plants, either. After all, who's going to miss a few freaks from a toxic zone, especially if the zone is corporate territory?

• DV8

GAIA'S GRAVEYARD: EXTINCTION

Where does it all lead us? Toward the inevitable threat of extinction, a danger that's much more real than most people know. The devastation of our environment is wiping out entire species *every day*, species that will never be seen again. We like to think we're immune to the problem, that extinction only happens to other species, but our ability to control our environment has limits, and we're coming to the end of them. The environment's ability to deal with the damage we've done has limits, too, and we're coming to the end of them as well.

Even without our own extinction looming ahead, we're fools if we think the destruction of hundreds of other species has no effect on us. Everything in an ecosystem is connected, and that includes us. The species of plants destroyed in the clear-cutting of the Amazon and other forests may have contained the cures for cancer and VITAS. The species of animals killed by pollution may be vital in maintaining a predator-prey relationship that keeps dangerous paranormals from turning to us as food. The species of microorganisms destroyed by the poisoning of the oceans may affect the balance of oxygen in

our atmosphere. All the efforts of the Amazonians aren't going to be enough to stem the tide of worldwide extinction.

- Thought not from lack of trying, I hear that Amazonia has some serious cred invested in scientific and technological reclamation programs in addition to using magic. Seems that the Amazonians were smart enough to offer some of the big biotech megacorps a deal. They provide Amazonia with the technology and the resources to restore the rainforest and the ecosystem using stuff like cloning, vat-growth and such. In return, the corps get limited rights to research and develop new biotechnology based on the local flora and fauna. Rumor has it that some corporate research projects down in the Amazon have gone a bit (okay, more than a bit) beyond the parameters specified by the Amazonian government. But as the saying goes, it's only a crime if you get caught.

- Zoomer

- Biotech corps are also interested in getting genetic information on endangered species for cloning and genetic engineering purposes. They figure to re-engineer the critters to improve their chances of survival as a species, clone them to increase the population, or to at least have the genetic information to re-create the species if efforts to sustain them fail and they do become extinct. That means expeditions into all kinds of places to gather genetic samples. Interesting work if you can get it.

- Rifleman

- A fool's errand is more like it. Corporations and scientists playing God is exactly what got us into this mess to begin with. What makes you think that even more tinkering with the environment and genetics is going to solve the problem?

- Deep Green

- Actually, I don't think about it. As long as they pay well, it doesn't really matter to me.

- Rifleman

SURVIVAL OF THE FITTEST

Natural selection is the process by which certain traits become more common in a species. For example, a herbivore is born with a longer neck than usual, allowing it to better reach the trees to eat the best food. Odds are it lives longer than its shorter-necked cousins do because it eats better. It has a better chance of mating and passing on its long neck to offspring. They thrive in turn and, over many generations, the species as a whole has longer necks. This is one of the key processes to the development of life, a process that changes in the environment are affecting in dramatic ways.

I've already talked about the increase in mutation among many different species, making it more and more likely for certain mutant traits to be passed on to their offspring, to better allow them to survive in the future. But also consider the effects of natural selection on the development of life. As more and more species die off from exposure to pollution and con-

tamination, the creatures that survive and continue to prosper are those most resistant to pollution, best able to survive in those sorts of conditions.

"Well, isn't that a good thing?" you ask. "Doesn't that mean that future generations of life will be able to survive?" Possibly, if the selection process works quickly enough. But will life that has adapted to survive in a toxic wasteland be something we can co-exist with? Creatures that thrive in environments poisonous to us are likely to be better suited for living in the world of the future than we are, and there may not be room enough for both of us in the scheme of things.

- Ok, now he's just getting alarmist and paranoid. What, toxic monsters are going to come crawling out of the landfills? Radioactive dinosaurs are going to surge out of the sea to devour us? I understand that pollution is a concern, but this stuff borders on fantasy.

- Rakker

- You think so? What happens when more and more shamans turn toxic? What happens when they decide to spread their poison to others? What happens if (gods forbid) they get organized and really start working together? We could find ourselves faced with an enemy that'll make the Ghost Dancers look like a group of boy scouts, drawing power from our own pollution, gaining in strength with every chemical weapon or nuke that's used. Chummer, we'd all better hope it's just a paranoid fantasy.

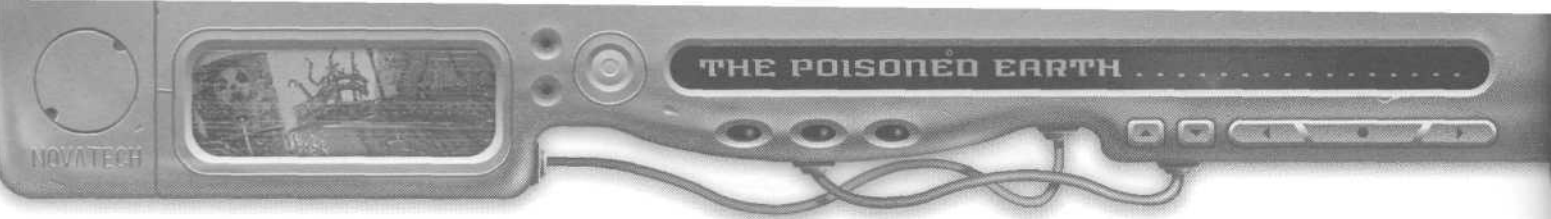
- Zander

THE COMING PLAGUE

Consider a kind of natural selection most people don't think about too often, namely killing off microorganisms—bacteria and viruses that cause disease. Now you're not going to hear too many people wanting to protect the "rights" of a virus, or that think a vaccine is "murder." But think about how far modern medicine has come in terms of dealing with microorganisms, especially with the addition of magic to a physician's arsenal of weapons against disease. Pathogens die by the millions from antibiotics, vaccines, nanotech and magic.

But not all of them die. It's incredibly difficult to completely eradicate something as small and difficult to detect as a microorganism from the environment without killing everything else along with it. Even radiation, which kills most everything, may still leave some of the little critters alive, possibly mutating them to boot. No matter what the treatment, some of the microorganisms will survive, even with magic. And those microorganisms are likely to be the strongest of their kind; the one's most resistant to the treatment used to kill the rest of them. And they'll inevitably reproduce. See where I'm going with this?

The past hundred years or so has seen a dramatic increase in the number of new strains of microorganisms, stronger and harder than the ones that came before them. There's an increase in the number of drug- and even magic-resistant bacteria and viruses, from Chinese Influenza to the latest strain of



VITAS, which seems to mutate more rapidly than scientists can keep track. All our medical science and magic are doing is helping to kill off the weaker microorganisms and helping to evolve newer and stronger ones. Odds are good it won't be long before a new plague like VITAS breaks out, mostly likely starting in the places where the medical community will never detect it before it's too late to stop it from spreading.

- That's assuming the "new plague" isn't something we've deliberately cooked up on our own. The technology to do gene-splicing and develop bio-weapons is becoming more and more accessible—to the point where someone could set up a home lab to brew up a new strain of anthrax or VITAS on their own. Then you've got the bio-weapon stockpiles of the various governments (and don't let them kid you into believing that they don't have any). There are the bio-weapons developed by the megacorporations, strictly top-secret stuff. All it would take is for one team of shadowrunners to try and pull a grab on a new bio-weapon prototype. If they frag it up, you could see a virulent, highly contagious virus let loose in a place like downtown Seattle or Los Angeles. Something to consider before you take any jobs involving biotech corps.

- Hangfire

- Windwalker also didn't mention a fairly recent development, which may be tied to all the "comet" nonsense (not that I think for a moment that a comet has anything to do with events here on Earth). Scientists believe they've identified additional strains of magical diseases related to things like the Human-Metahuman Vampiric Virus. There are clear indications that more microorganisms are "Awakening" as we progress further into the Sixth World. These diseases are highly magic-resistant and often resistant to conventional treatment as well. For example, we've been studying HMMHV since it was first isolated some thirty years ago and we're no closer to developing a treatment for it than when we started. These newly discovered diseases are likely to be around for some time to come.

- Sagan

- What kind of diseases?

- Tango

- Well, in addition to the fact that they seem to come up with a new strain of HMMHV every day, there's Aura Deficiency Syndrome, which weakens the aura over time. It makes the victim highly susceptible to magic and, if it's allowed to persist long enough, can eventually weaken the aura to the point where the victim becomes permanently vulnerable to magic, basically stripping away the natural "immune response" of the aura to outside influences. A related ailment is Mana-Active Aura Deficiency Syndrome, which some are linking to the Strain-III bacteria used in Chicago to kill off insect spirits. MADS results from a virus that only affects the

Awakened and weakens their magical abilities. It can cause permanent damage and even completely destroy a victim's magical talents. Both infections are difficult to cure magically, although it seems like broad-spectrum anti-viral medication is effective against them.

- Sagan

THE FACE OF THE FUTURE

If you've gotten this far you're probably wondering if our situation can possibly be as bad as I've described. I can tell you, odds are it's probably worse. There's still so much we don't know about the delicate balance of the ecology and the environment—but based on what we do know, we're in a lot of trouble. The rate of pollution and the poisoning of our environment will lead to devastation on a global scale, possibly in as few as two or three more generations. I can see two possible ends of the path we're on now. One: we wise up and seriously change the way we live and interact with our environment, and I mean *seriously*. We have the tools at hand to start reversing a lot of the damage we've done and to prevent further pollution and environmental harm from happening, we just have to have the will to use them.

The other alternative is that we keep going on as we have been until the environment becomes too toxic to support us. Then at best we'll all be forced to live in arcologies that will be like stations on the surface of the Moon, Mars, or any other lifeless planet, because that's what Earth will be. We'll have killed our only natural environment and our descendants will never know what it's like to walk unprotected under the open sky, will never see an area of natural wilderness, will never breathe unprocessed air or drink unprocessed water. At worst we won't even have that kind of life; we'll more likely all be dead from poison, plague and starvation.

- There's one other possibility, of course. Advances in technology and/or magic might allow us to eliminate and even repair environmental damage without seriously changing the way in which we live. Advanced nanotech and other manufacturing methods wouldn't pollute the environment at all, and some magicians believe there may be ways to restore poisoned and polluted areas of the planet using magic. The advances we've made in just the past ten to fifteen years are remarkable and may offer a measure of hope.

- Tekno

- A slim hope at best, chummer. That's not much different from saying "and a miracle could happen that will save us all" and probably about as likely.

- Deep Green

A TOXIC AWAKENING

"What about magic?" you may ask. "Can't magic do something about the environmental problems?" Unfortunately, not only is there not much that magic can do, but magic is often the first casualty of the poisoning of our environment. It may be more of a threat than a help in cleaning up the problem.

Magic is closely tied to the energies and currents of life and emotion. The astral plane reflects the life found on the physical plane and the emotions of the people there. In a verdant jungle or grassland, the astral plane is bright with the auras of living things, almost heady with the energies of life. In a bustling, vibrant community, you can feel a buzz in the astral from the forces of life and the feelings of home, happiness and contentment. But in places where life is twisted and dying, where people are filled with anger or despair, the astral plane isn't a pleasant place at all. Death and desolation turn the astral dark and gloomy, the light of life snuffed out. Negative emotions hang like smog in the astral, polluting the spirit world as much as chemicals pollute the soil, water and air.

• So let me get this straight; life is the source of magic?

• Slater

• No, not really. It would be more accurate to say that the astral plane and the mana field are "sensitive" to the presence (or absence) of life. The astral is a reflection of the physical world, particularly its living and emotional content, so environmental pollution and "emotional pollution" (to use a term I've seen in the thaumaturgical journals) are reflected by changes on the astral plane.

• Neddy

• Mental pollution is more common than many researchers think, or at least are willing to admit. The way our society molds us into uniform, conforming, materialistic automatons, alienated from our work and neighbors, drowning in manipulative advertisements and plastic products, taints our mental well-being and separates us from both the natural world and our own humanity. Our social fabric is in tatters and our high-tech "civilized" lifestyle is eroding our sanity. Depression, apathy and stress are pandemic diseases, solved by popping pills or slotting BTLs. Even our own bodies are no longer sacrosanct, as we increasingly replace limbs with circuitry and machinery. The loneliness, alienation and despair twists people's hearts, echoing on the astral and drawing the attention of things that feed on negativity. Every slum, every prison, every cubicle maze and boardroom is in danger of corruption.

• Debord

This means that polluted areas have a way of weakening the use of magic, making it more difficult to use magic to solve the problem. If you want to magically clean up a contaminated area, you have to first overcome the contamination of the spirit world, making it an exhausting task. The really contaminated toxic zones are almost impossible to affect magically, at least for most magicians.

There are magicians able to do magic in toxic zones. Instead of fighting against the pollution of magical energy there, they go with the flow and become as polluted as the places they draw their power from. The same is true of Awakened creatures; they either weaken (and likely die)

because of the pollution of astral space, or they learn to draw on that pollution, becoming toxic themselves. The way these areas turn the forces of magic that should be a source of cleaning and purification into tools of pollution is one of the greatest dangers of toxic zones.

• Okay, I understand why shamans are affected by this sort of thing—I mean they draw their power from nature all that that—but why does pollution affect mages the same way, and why can't mages become toxic if they're affected the same way shamans are?

• Dodd

• You've got two separate questions, chummer. In the first case, all magicians are affected by the tainting of astral space regardless of their tradition. It's the way pollution creates background count in the local mana that limits the use of magic, no matter what kind of mojo you use. The difference between shamans and mages comes in with their relationship to nature. Shamans draw their power from the spirits of nature, and those spirits are twisted by pollution, too. That makes shamans vulnerable. If they open up to the power of these toxic spirits and allow that energy into their aura, then they can become corrupted, too. Mages aren't in touch with nature spirits to begin with, so toxic zones can't corrupt them, but they're still affected by the nasty astral space and mana there. Got it?

• Mr. Mystic

• The spirits capable of corrupting mages are of a different sort altogether.

• Talon

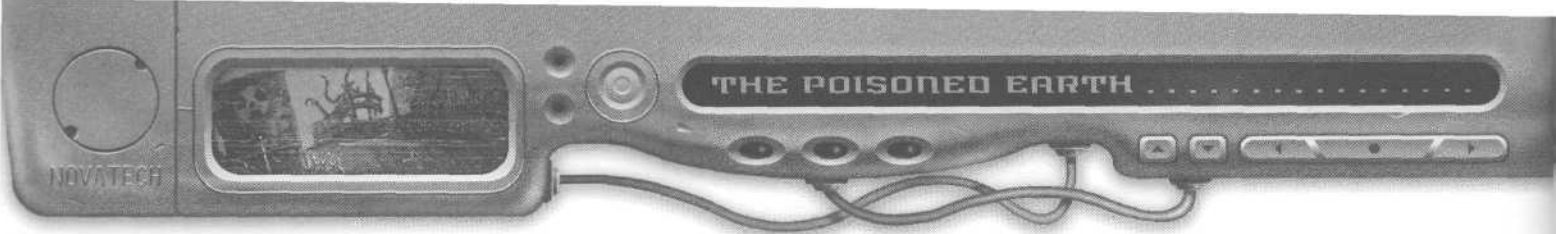
• I've heard that Manadyne, MIT&T and a few other magical think-tanks are working on some way of "filtering" the "good" magical energy from the "bad" in places with a high background count. Sounds like a kind of magical condensing respirator that'll allow magicians to overcome or even ignore the effects of background count in those places. If it works, magicians will be able to use magic to clean up toxic sites more quickly than ever before.

• Silicon Mage

• Assuming the toxics let them.

• Rikki Ratboy

The pollution of this world taints and twists the spirit world. A question some people are afraid to ask is, how much of what has happened in the years since the Awakening is part of the natural process of magic returning to the world and how much of it is caused by the ways in which we've "polluted" magic? We know for sure that toxic spirits exist because of us, but what else? If pollution can spawn mutant and toxic creatures then why not mutant and toxic magic as well? The threat of pollution is dangerous enough, but the power of magic can give toxic zones eyes to see what is happening, hands to reach



out and spread their poisons and, worst of all, minds to plan and think of new ways to speed the process we have begun. Toxic shamans and spirits are nothing more than pollution and corruption personified, monsters that we have created.

ECO-ALERT: THE NORTH SEA

The region of the Atlantic Ocean between Britain, the United Netherlands, the Allied German States and Denmark, the North Sea is one of the most toxic stretches of water on Earth. Toxic waste and runoff from the aforementioned nations and corporations operating in them has poured into the North Sea for decades. Radioactive waste from British, Scottish and German nuclear meltdowns has made its way into the North Sea. The shoreline areas, particularly the North German League, are so contaminated that nothing can live in them, or at least nothing that's not mutated and twisted beyond all recognition.

THE CORPORATIONS

What's being done about the poisoning of the North Sea? The same as everywhere else, the governments have written the area off and turned it over to the "care" of the megacorporations to do with as they please. The corps snapped up the real estate for mega-cheap, allegedly for "renewal and development." The number one culprit in the German region of the North Sea is Proteus AG, which owns and operates several offshore arkoblocks—huge, partially submerged structures housing thousands of corporate employees. Other corporations (including Saeder-Krupp, AG Chemie Europa and Zeta-ImpChem) have interests in the North Sea, particularly offshore oil drilling and aquatechnology.

The corporate presence in the North Sea means continual amounts of poison pouring into the water with little or nothing any government can do about it (even those that might be inclined to bother) because the arkoblocks and corporate facilities are either extraterritorial or located in international waters, or both. The waves wash toxic chemicals and crude petroleum onto the shores of northern Germany, turning places like the mouth of the Elbe River into toxic deserts. Poisonous sludge covers the ground several centimeters deep in places, killing off all animal and plant life. The government's idea of a solution was to fence off the area and post warning signs telling people to stay away. So the pollution continues and the poisoned area expands.

- I've got to agree that the North Sea shore is an awful place. The stench is unimaginable and wandering around without a breather for too long is enough to make you dizzy and light-headed. On a hot summer day it's enough to make you want to puke your guts out.
- Edelweiss
- Of course, the good side of it—if there is a good side to such a hellish place—is that most people avoid it like the plague that it is. That means smugglers and pirates find the North Sea a relatively easy place to operate, particularly near the shore. That is, until they run afoul of a corporate ship belonging to Proteus

AG or Saeder-Krupp.

- Mal-de-Mer

THE ACTIVISTS

The North Sea is the focus of many eco-activist cells in Europe, particularly Germany, the Netherlands and parts of Britain. Their primary targets are the corporations that continue to poison the area regardless of the consequences, since lobbying the governments bordering the North Sea has virtually no impact. Green organizations have struck directly at Proteus AG and other North Sea corporations by sabotaging their offshore facilities, disrupting shipping and using digital Matrix warfare against them. Despite their valiant efforts, their strikes have only been annoyances to the megacorporations, which have continued their assault on the environment virtually unabated.

- Not completely, but pretty close to it. The Green Cells in the North Sea have done some damage to corps like Proteus, but not enough. They've helped delay the construction of Proteus' latest arkoblock by a few months, but Proteus will complete it soon. Toxic output into the region is as high as ever, and increasing. The cells are fighting a losing battle, and most of them know it, which is likely to make them more and more desperate as time goes on. Be careful about getting involved in runs in the North Sea, because I suspect things are going to get a lot worse before they get any better.
- Unnatural
- The thing that really hampers the Green Cells and eco-activists in the North Sea is the very nature of the environment they're trying to save. The North Sea is so badly polluted that most of it is anathema to the shamans who often work with eco-groups. They can't call up much power there and no spirits in the North Sea respond to their summons. Even the few mages working with the Green Cells have a tough time cutting through the astral pollution that accompanies the physical pollution, meaning the activists can't use magic—often their best weapon—effectively against the corps. That's why you see them focusing more on physical and Matrix strikes; they're all they've got.
- Hierophant
- Thing is, there are magicians who aren't bothered by the poisoning of the North Sea. That's where the problems arise. If you're really devoted to the cause and you want the magic to make a difference, all you have to do is open yourself up to the toxic power that's there, turning it against the polluters who created it. And such is the first step down the slippery slope to becoming a toxic shaman.
- Ecotope

TOXIC THREATS

The poisonous stew the North Sea has become is giving rise to things that thrive in the toxic environment. First is a sharp increase in the number of mutant lifeforms found in the waters of the North Sea. Most of the native sea-life has died or

is dying off, but some of it is adapting to live in the new "environment." The fishing industry in the area is all but finished, with few fish and fewer still safe to consume, given the concentrations of mercury and other poisons in them.

- Proteus has had some trouble recently with mutant sea-life and their arkoblocks. They recently covered up an attack on the Helgoland arkoblock by some kind of mutated saltwater serpent that spit acid. Took a corporate heavy-weapon team to kill the thing, then corporate ships dragged the corpse out to sea. Some video footage of the attack leaked to the Matrix, but Proteus managed to discredit it. Nobody at the arkoblock is talking about it, at least not where company security can hear.

- Yukon Cornelius

- I heard that attack wasn't just a random incident, but that the serpent was directed to attack the arkoblock by some outside force. Not hard to guess who it could have been, it's more of a question of figuring out which eco-group has figured out how to locate and control critters like that.

- KonWatcht

Even more disturbing than the extinction and mutation of sea creatures throughout the North Sea are the effects the pollution is having on the spirits and magic of the region. The poisoning of the waters and the land surrounding them has driven the spirits of the North Sea mad with rage or twisted them into mockeries of their true selves. All magic in the area is tainted, making it difficult for magicians to use their abilities. Though the spirits sometimes strike out against their tormentors, they just as often strike against innocent people, or in their madness seek to spread the pollution and corruption even further.

- One example of an "avenging spirit" is the Schimmeleiter, a modern-day version of a legendary German spirit. It supposedly looks like an armored figure wielding a sword, riding a pale horse that strikes sparks and thunder from its hooves as it gallops over the sea or land, never quite touching the surface, accompanied by storm clouds and lightning. The Schimmeleiter is a harbinger of doom, and slays anyone it encounters. So like Jesse says, though it causes trouble for the polluters, it's just as much a danger to the innocent who stray into its domain.

- Roland von Bremen

- Actually the Schimmeleiter do exist, but not as a single spirit. They're storm spirits corrupted by the poisoning of the North Sea and venting their rage against any mortal that comes within their reach. They're not as mad as some toxic spirits. It's possible for someone who is able to survive long enough to reason with one, but I certainly wouldn't want to be the one to try it.

- Geistmann

ECO-ALERT: TRIPOLI HOT ZONE

In 2004, a so-called war broke out between Libya and Israel. Diplomatic tensions building for decades boiled over

and Libya launched an attack on Israel using chemical weapons, causing thousands of deaths. Israel immediately retaliated with its stockpile of nuclear weapons, ending any speculation about the nation's nuclear capabilities. The "war" lasted about ten minutes, but it was enough time for Israel to wipe out half of Libya's major population centers and millions of its citizens. Central Tripoli, the Libyan capitol, turned into a crater. The shock- and heat waves from the blast leveled buildings for miles, leaving only the outskirts of the city standing as mute testimony to the folly of war.

What the initial blasts didn't do, the radioactive fallout soon took care of. Hundreds of thousands more people died from radiation poisoning after the initial strike. Libya all but ceased to exist as a political entity as the United Nations moved "peacekeeping" forces into the area to offer humanitarian relief and to restore some semblance of order. The remaining Libyans were moved out of the country to new homes in Egypt, parts of central Africa and the Middle East, where many still live in ghetto communities apart from their neighbors. Others form the core of anti-Israeli terrorist organizations.

Scientists working with the United Nations studied the effects of the nuclear blasts on the Libyan environment, but otherwise the area was abandoned save for small military outposts keeping people away, particularly would-be looters who still managed to smuggle material out of Libya. (Ironically leading to a time when the Middle Eastern black market was flooded with items carrying traces of radiation sufficient to cause sickness and even death, which further crippled the shadow economy there.)

After a decade or so, the United Nations lost interest in standing guard over Libya's radioactive corpse. The UN had far greater concerns as megacorporate growth and isolationism severely weakened its power and the conflict that would erupt into the Euro-Wars was growing. So Libya was left to fend for itself, ostensibly claimed by Egypt, but home for no one except outlaws and desert nomads willing to brave the lingering radiation. Now, the deserts of Libya are ground zero for the Desert Wars.

- For the complete scan on the Desert Wars, see the Shifting Sands file.

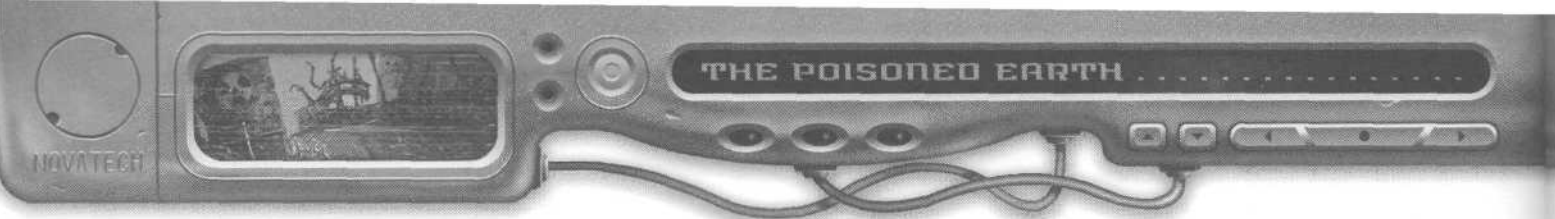
- Captain Chaos

"I am everywhere!"

TOXIC THREATS

Though the radioactivity of most of the Libyan Desert has diminished over the fifty years since the bombings, there are no signs of life returning to the region, largely because of the damage done by decades of ongoing warfare. Parts of the desert remain radioactive and inhospitable to the Awakened, and traces of the violent forces that destroyed the cities still linger on the astral plane.

- The background count in and around the Libyan ruins is massive, making it difficult to use magic and unpleasant to do any sort of astral work. The megacorporations actually see this as an asset, since the harsh conditions serve as a kind of "obstacle



course" for their Awakened personnel. Field training in the Desert Wars is hard work, and you can be sure any magician who's done it—and survived—knows what he's doing.

- Merle

Of even graver concern than the lingering radiation and other environmental pollution resulting from the Desert Wars is the astral pollution caused by the ongoing, sustained conflicts. All that we know about the astral plane shows us that places of sustained, violent conflict pollute the astral, saturating it with violent emotional impressions. Over long periods of time, this may cause long-lasting or even permanent damage to the astral plane. This pollution can also result in harm to spirits and other astral beings.

- I heard from a chummer of mine who fought in the Desert Wars that wraiths have been known to show up there from time to time.

- Heavy Metal

- What are wraiths?

- Digital Dancer

- They're a kind of spirit that apparently feeds on violence (or violence emotions, more precisely). They look like ghostly figures in tattered robes. From what I've heard they can even cause or intensify violence to allow them to "feed" more easily, and they're drawn to places of violent conflict with a high background count. Desert Wars are probably like a buffet for them.

- Mask

- And that's not all (as the people in marketing say). There are stories making the rounds about ghosts haunting the Libyan ruins, ghosts that are none too fond of foreigners in their homeland, intent on driving away anyone who intrudes on their haunts. The corps have covered up several incidents of Desert Wars personnel turning up dead in or around the Libyan ruins, some of them with severe radiation burns that could have only come from an intense "hot" source, too hot to be around now after fifty years. Stories of specters that glow with a weird greenish light.

- Hammer

- I bet those grunts tell even weirder stories after a few more drinks sitting around a campfire or back at base. And they'll swear to you that every single one is true.

- Ranger X

ECO-ALERT: TSIMSHIAN

You wouldn't expect to find an ecological disaster in the midst of the Native American Nations, some of the most Earth-conscious nations in the world, but the evidence speaks for itself. The nation of Tsimshian, which seceded from the NAN in 2035 over immigration and conservation issues (among other things), is destroying land at an alarming rate.

Free of Sovereign Tribal Council restraints, Tsimshian quickly turned its back on the environment in order to support industries that took advantage of the rich natural resources of their land—something they viewed as their only asset in comparison to other industrialized and post-industrial nations. Those resources include vast tracts of old-growth timber and rich deposits of minerals, including copper, nickel, manganese and aluminum. Of course, Tsimshian didn't have the technology to "fully utilize" these resources. So they were forced to buy it second- and even third-hand from other nations, meaning Tsimshian technology is easily forty or fifty years behind the times in terms of safety to the environment, to say nothing of the safety of the workers using the equipment.

Then, to ensure profitability for the "resource management" industries, the Tsimshian government offered substantial subsidies to those industries, so long as they were productive to a certain degree. Unfortunately, Tsimshian's measure of "productivity" isn't a matter of how much the industries sell or how well they manage their resources but in simple quotas of how much they can take from the land within a given time. Logging companies are paid based on how many trees they *cut*, not how many they sell. So a logging company can clear-cut an entire hectare of land and leave the logs to rot, if they want, and still get their government subsidy. Mining companies can strip-mine a region, doing untold ecological damage, and receive government payments for doing so. Any money they make for the sale of the resources they tear from the land is pure-profit, over and above what they're being paid by the government.

• That's insane. That can't be true.

• Mako

• It's all too true, chummer. Idiotic policies like this nearly bankrupted Tsimshian before Mitsuhama came in and bailed out their debt. And still the government pays out millions of nuyen to support inefficient and ecologically ruinous industries in the name of "progress" and "national pride." Gotta make sure all those Haida and Kwakiutl workers get paid their sub-minimum wage, after all.

• Keynesian Kid

But the worst ecological offender in Tsimshian is by far Mitsuhama Computer Technologies Tsimshian, a subsidiary of MCT. MCT's influence in Tsimshian stems from a deal they cut with the government in 2053. Tsimshian has tremendous mineral resources but couldn't reach most of them with their primitive mining technology and techniques. MCT offered the nation a "partnership" that would allow them to fully utilize their natural resources (while scoring MCT massive profits). Tsimshian was nearly bankrupt, so it had little choice but to agree. Once MCT got its foot in the door, the corp was exploiting resources all over the country. Other corps soon followed, but MCT maintains the upper hand.

Now the lion's share of the nation's gross national product is made up of mining operations which, while more efficient,

are no less damaging to the environment, leading to the poisoning of Tsimshian's waterways and land. Deforestation only exaggerates the problem, leading to soil erosion and the clogging to local waterways.

• The truth of the matter is that the current mining operations are more efficient and safe (for the most part) but there are so many more of them that the net effect is more damage to the environment. Particularly when you consider that the Tsimshian government kowtows to whatever Mitsuhama wants, since they could wreck the nation's economy almost single-handedly if they decided to pull out.

• Nuyen Nick

• I've actually heard that the Tsimshian political opposition (the Moderation and Potence Parties) would like to loosen MCT's stranglehold on Tsimshian's economy. It's more of a contingency plan at the moment, ensuring Tsimshian could survive something like an MCT pullout, but it's enough to create some behind-the-scenes tension between the government and the corp (as well as some potentially lucrative shadow-work).

• Pan-Handler

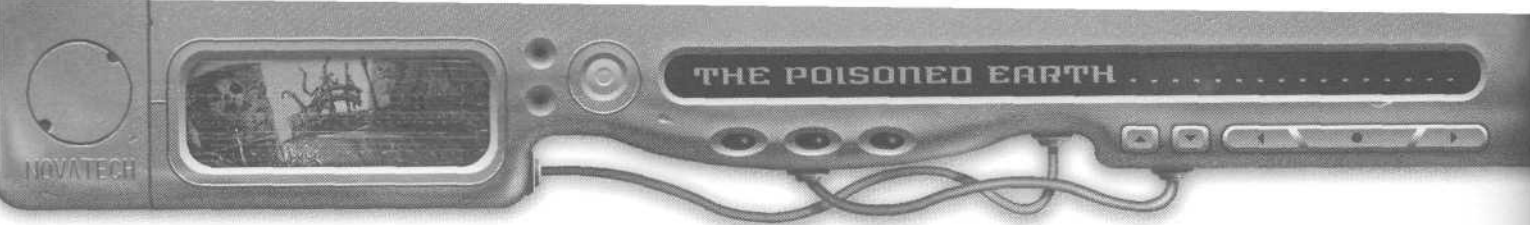
TOXIC THREATS

The effects of environmental pollution on the magical forces inherent in Tsimshian land are grave. They've been building for years and are finally coming to the fore. Shamans and allied magicians either moved away from Tsimshian or became involved in efforts to protect the land from being raped and exploited. The rest continued working with the Tsimshian government, some trying to effect change from within, others drawn to the opportunities and rewards of being in power.

• It's worth noting that many, if not most, of the spell-slingers working for the Tsimshian government are mages, not shamans. The number of mages has only increased since Mitsuhama moved into Tsimshian nearly ten years ago. In fact, the corp recruits heavily among the Tsimshian Awakened, offering them company scholarships and the like and sending them off to school in Tokyo, San Francisco and Seattle—in exchange for an exclusive work contract with MCT, of course.

• Teddy

Many places in Tsimshian are so blighted, the land so twisted and poisoned, that shamans can no longer call the spirits there, and most magicians find the well of magical power tainted and difficult to draw from. But mysteriously, the Tsimshian government still has shamans able to use magic in these places, sometimes in the company of corporate mages. The magical pall is beginning to spread across the rest of the nation, making magic more difficult almost everywhere in Tsimshian, except for those mysterious few "favored" by the government and Mitsuhama. How are they accomplishing this? I can think of only one possibility, and it is a dreadful one: these shamans have taken the view that the only way of overcoming the corruption is to join with it.



- Jesse wouldn't be the first person to accuse Tsimshian's remaining shamans of being toxic. It certainly would explain their ability to operate in the most poisoned and ecologically devastated areas of the nation without any of the problems plaguing other magicians. Unfortunately, there's no hard evidence of it.

- Nay-Sayer

- What they're doing to the land is evidence enough.
- Eagle Warrior

- I've also heard that MCT's infamous Thaumaturgical R&D Department has taken an interest in Tsimshian, studying the changes to astral space and the mana field that have occurred. MCT mages poke around like a coroner performing an autopsy on nature's corpse, twisting and prodding to see what caused the most damage and what techniques work best for counteracting the effects. It might be that the magicians working for the company and the government have some kind of new technique allowing them to overcome the difficulties of using magic there. But it's just as possible that Jesse is right, and there are toxics working for the government (and maybe the corps).

- Rabbit

ECO-ALERT: ARCOLOGY MILE (LOS ANGELES)

Most people would have written LA off as a total ecological loss long before now, and I would tend to agree with them. But after recent events, the ecological situation in the City of Fallen Angels has, if possible, gotten far worse, and it may have an impact on the rest of the world, particularly Los Angeles' "saviors," the Pueblo Corporate Council.

Los Angeles has been a toxic nightmare for nearly a century. The valley it's situated in is the perfect container for trapping the toxic emissions from cars, power plants and other "necessities" of city life. Los Angeles is famous for its near-continual haze of smog, and a breathing mask is considered a standard article of clothing by most Angelenos (those who can afford one, anyway).

Add on top of that mile upon unbroken mile of urban blight, extensive desalination facilities along the shore (which play havoc with local marine ecology), and a relaxed attitude toward any sort of ecological laws and you've got a festering sore on the surface of Mother Earth. And that was LA *before* the events of the past year happened.

As you all know by now, LA was swept with SURGE, a devastating earthquake, riots and civil unrest, and finally "rescued" by Pueblo military forces and made a protectorate of the Pueblo Corporate Council. Los Angeles has been through hell and back, and the status quo has collapsed. Things have become pretty desperate now that all of the city's sins have come home to roost.

- You'd think after San Francisco that Californians would have learned not to call in outside help to solve their problems. They

only end up being subjects of that foreign power in the end.

- Motormouth

What people in LA want more than anything else is order, and they're willing to do pretty much anything to secure it. The Pueblos and their megacorporate allies are more than happy to provide that order with curfews, martial law, street patrols and executions of anyone who steps too far out of line. The wealthy in Los Angeles have retreated behind their locked and guarded doors, huddling together and hoping that enough indulgence will make the horrors of the outside world go away. The less privileged salvage what they can from the ruins and do their best to avoid being lined up against a wall and shot.

It's the ultimate expression of the rift that's been developing in LA for decades, the separation of the haves and have-nots. On the one side, an entitled few live in safe, sterile luxury cut off from the outside world, unable or unwilling to see beyond the barricades they've erected to keep the ugliness of reality out. On the other side, people are robbed of all hope or opportunity, railing at fate for their sorry existence and kept down by the forces of order and law.

- A bit overstated, but not by much. The social divisions in LA are deeper than ever, although SURGE shook some things up. Some of the "beautiful people" aren't so beautiful anymore and a few have managed to parlay their transformation into stardom or one sort or another. But for the most part it's just like Jesse describes.

- WEHO Boy

TOXIC THREATS

The two extremes found in Los Angeles have begun to destroy the only ecology the city had left, the human ecology. While Los Angeles has never been a healthy or functional community, it was always a vibrant one, on both sides of the wall. The glitterati had their parties and their social scene and (in their own way) the creation of art, while the people in the poor parts of the city held on to the hope of something better. Now those things are disappearing beneath a tide of suspicion, fear, and anger. If you don't believe me, ask a shaman about the spirits of the City of Angels and they'll tell you that they're behaving strangely, on both sides of the equation.

I have a friend, a shaman who serves with the Pueblo Security Forces. She told me that the city and hearth spirits in LA are as different as night and day depending on where you are. In the rich sections of the city they're cold and disdainful, unwilling to talk to anyone they consider "beneath" them (which seems to be almost everyone except for the most persuasive and skilled shamans). They're also paranoid about intrusions into their domains and very protective of them.

- I heard about a situation where someone tore up a bunch of gangers who broke into a AAA security neighborhood. Forensic research showed their assailant was a spirit of some kind, who apparently materialized spontaneously to protect the neighborhood, but hasn't bothered anyone else. Apparently they're just interested in keeping the "lowlifes" out.

- LAX

On the other hand, the spirits in places like El Infierno are angry, filled with rage toward all people, the wealthy and privileged in particular. They've been known to attack the shamans that try to summon them, and there have been reports of spontaneous spirit manifestations, of spirits attacking Pueblo troops and local citizens.

- The Pueblos have all sorts of "ghost stories" about spirits in the Mojave and in the city causing trouble for them. Some think it's a bad omen, saying that their occupation of Los Angeles isn't meant to be, others chalk it up to interference from other NAN shamans, trying to cause trouble for the Pueblo or just stories and exaggeration.
- Myst

The path that Los Angeles is on is twisting the Spirits of Man there into something antithetical to humanity. These spirits cannot help but reflect the nature of humanity in their domain, and it's only a matter of time before parts of LA have become places where no true human spirit can be found any more. When that happens, there may be no hope for the city or its people.

- There isn't very much now, Jesse. It would have been better for everyone if that 'quake had simply dropped LA into the ocean so we could start over again.
- Tool
- The scary thing is that the situation in LA isn't exactly unusual these days. A lot of places have been hit hard (look at Japan, for Ghost's sake). How long before other cities and metroplexes around the world become "tainted" like Jesse says and the spirits there turn against us (or we turn them against us, actually)? Are we even capable of sustaining the kind of community where the Spirits of Man can thrive anymore?
- Belle
- I dunno, I think we're doing a pretty decent job on Shadowland <display_grin>. Too bad spirits can't live in the Matrix.
- Tanner
- Don't be so sure of that, chummer.
- Isis-9.1

ECO-ALERT: YUCATÁN

Everyone's heard about what a bad year Aztlan's been having, but in my opinion it's clear that they brought the bad karma down on themselves. In their rush to eliminate the insurgents that have been rabbleroising in their backyard for decades, the Aztlan military adopted a burn-'em-out strategy. Chemical weapons, saturation bombings and cleansing fire were used to drive the rebels out and eradicate the jungles and towns they used as cover. But the Azzies were a little overzealous in their campaign, a little too successful. The Zapatistas were nearly routed and their support network crippled, but col-

lateral damage was high and the ecological devastation was obscene. On the brink of victory, the tide suddenly turned and nature struck back.

Some sources claim that the rebels called upon some sort of massive ritual, similar to the Ghost Dance. Others believe that a group of free spirits organized their own resistance. And a few voices, mostly ignored, think that an Awakened Earth may have used its natural defenses. Whatever the origin, the Yucatán was wracked with storms, earthquakes and even tidal waves. Spirit and paranormal attacks became commonplace. Shamans on both sides cracked under the stress, turning against friends and allies. In a matter of weeks, the Azzies had been routed, but the rebels and people of the Yucatán weren't much better off.

Half a year later, things have calmed down, but the extreme weather is still wild and unpredictable. Azzie troops have pulled back from almost all of their field operations, hunkering down in a few key bases and allowing large swathes of territory to escape from their control (as if they had a choice). Their strategy has switched from assault to containment—they are on the defensive, hoping to keep the situation from spreading even further.

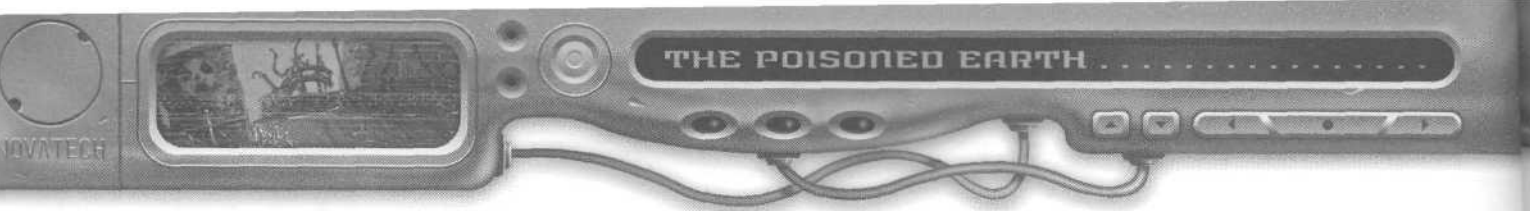
- They've also pulled almost all of their shamans out of the area—no sense in losing more. I've heard several accounts of the Azzies bringing in high-level hermetics of some kind to assess the situation and develop some options, particularly where they have active temples. You can practically hear the heads rolling at Azzie HQ.
- Pyramid Watcher
- The Azzies are also hiring mercs, especially ones with spirit hunting experience. Not worth the trouble, if you ask me. But you know some slag out there will take the deal.
- Jungle Rot

The rebels have recovered from their setbacks and are on the rebound, establishing new bases and reclaiming some old areas. The entire peninsula is a patchwork of territories controlled by one faction or the other. But even the rebels are wary of the new players on the field—the spirits.

SPIRIT WAR

The Azzies and rebels aren't just contending with one new force—they're facing two. Toxic spirits and shamans on one hand, and hostile nature spirits and paracritters on the other.

From all indications, entire regions of Yucatán land have become toxic domains, particularly the areas slashed and burned by the Azzies. Within these areas, very little moves other than creatures that have adapted, often in unnatural ways, to the despoiled environment. Reports of mutated critters and metahumans are on the rise. Rogue groupings of toxic poisoner shamans (including AWOL Azzies, former rebels and corrupted natives) are active in the area, sometimes aided by others whom they have pulled under their sway. Toxic spirits run amok, attacking interlopers.



- Even worse, there are signs that some toxic forces are actively seeking to spread the desolation to unaffected areas. Unexplained chemical attacks, pollution-spreading sabotage and other horrors have been reported all around the Yucatán. The entire city of Valladolid had to be evacuated after large amounts of the pesticide ethyl parathion were released in an industrial "accident." Hundreds of residents were killed, while thousands more were blinded or suffered permanent nervous system damage. Parathion is supposed to decompose rapidly in the environment, but tests show that high concentrations of the substance remain in the area's soil and groundwater.

- Green Piece

- There's also been an outbreak of an Awakened species of *Catolaccus grandis* infection in metahumans. *C. grandis* is an ectoparasitoid of the boll weevil that was heavily used for biological control purposes (the parasites deposited their eggs in paralyzed boll weevil larva, so the host could be consumed as the young hatched—thus controlling the crop-destroying boll weevil population). New reports indicate that a larger variant of the *C. grandis* is paralyzing animals and metahumans to use as hosts for their young. Coincidence? I think not.

- Goat

The toxics, however, aren't running unopposed. New reports indicate that some areas of the ravaged Yucatán are recovering at an unparalleled rate. In fact, they're exploding with growth and life. You've heard the tales of the Amazonian regeneration? Notch up the dial a few clicks and you'll hit the speed we're talking about.

- Spirit activity is at an all-time noticeable high in these regrowth areas, from hard-working spontaneously-manifesting nature spirits to powerful free spirits. As a general rule, they're hostile to metahumanity, unless you're a known (and pro-ecology) local or supporter. Even the rebels are wary here. I'd bet that some toxic shamans of the avenger variety are putting in their dues as well.

- Soma

- Frag the spirits, it's the shapeshifters you have to watch out for! The spirits will just spin you in circles and drive you out, unless they're really grumpy that day. The beasties will treat you as take-out food.

- Bag Man

From all accounts, the renewing forces and the toxic forces are in direct conflict. A burned out section of jungle coastline will be drowned in fog and regenerate to a thick, steamy rain-forest alive with complex ecosystems, only to die out once again when the local water supplies are tainted by infectious runoff from nearby cattle ranches. The rebels and Azzies only snipe at each other occasionally, saving their attention for the new forces that battle around them.

- Some of the forces are damn sentient, and they're hiring meat bodies to take on work that their, uh, less tangible friends have a hard time with. Be careful about your pay, and get it up front. The toxics won't mind it if the mission objective takes you out as well.

- Knots

- There's been a lot of clashes, disappearances and hushed activity in and around various Mayan ruins—Tikal, Uxmal, Izamal and Calakmul, among others. No one seems clear on who's behind it, but someone—or something—is planning a surprise.

- Rope Maker

ECO-ALERT: THE SOX

The SOX (Saar-Lorraine-Luxembourg) Special Administrative Zone is a product of the fateful day in March 2008, when both cooling towers of the Cattenom-GAU French nuclear reactor fractured and released radioactive gas into the atmosphere. Mass panic ensued, and thousands died both from the radiation and the riots and looting that ransacked the region's cities. France and Germany designated the affected area as a neutral emergency zone. Squabbling between the countries stalled decontamination and security measures until complete control of the SOX was handed to over to a joint-corporate *Kontrollrat* (Administrative Council) in 2053.

The Zone is valuable to megacorp interests because it has developed an extremely high background count (it has been officially classified as a "mana warp" area). It's not really clear why the level of mana pollution is so high, but the side effect is that the area offers natural magical protection. Astral space is so warped that astral intrusion is nearly impossible if not deadly, and magicians are wise to avoid using magic in the area.

Though the *Kontrollrat* corps are allegedly pursuing decontamination and reclamation measures, in reality the SOX has become one big laboratory for them to conduct illegal or questionable research. If anything, some of their research and activities may be making the area worse. Each of the *Kontrollrat* corps (including AG Chemie, Ares, Eastern Star Pharmaceuticals, IFMU, Proteus, Renraku and Saeder-Krupp among others) has at least one decontaminated, fully-sealed and often self-sustaining facility, many of them underground. Common projects include pharmaceuticals, chemicals, biotech, alchemy and even radiological research.

- Getting Into the Zone Isn't easy. The entire region is walled off by a 5-meter high, 3-meter thick barrier with automated defenses and watchtowers positioned approximately every 7 kilometers. MET 2000 hired guns man the walls and patrol the area with drones. The *Kontrollrat* also rents out the SOX for military training operations, usually consisting of bombing runs and other remote/automated warfare systems.

- Atom X

TOXIC THREATS

The biggest danger in the SOX is the prevalent radiation level, which can cause damage in both the short and long term. Several spots are still quite "hot"—particularly near the old reactors or around certain corp "testing zones." Despite this, the SOX has numerous unauthorized residents, including squatters and smugglers.

The squatters are mostly neo-tribal gangs of survivors and outcasts that call themselves "radpunks." These tend to be a sickly lot, but they'll descend on outsiders like a pack of jackals. Even worse are the "glowpunks," who are the craziest of the crazies. The glowpunks actually revel in the Zone's irradiation. They think everyone who sets foot in the Zone should bask in the "Glow," and they'll strip outsiders of any protective measures they might have. They've also been known to launch attacks on Kontrollrat facilities, hoping to breach their security and containment seals.

- I've heard that slow glowpunks show evidence of mutation, but others claim that they've just gotten implants to add to their mystique. Many suspect that they are led by toxic shamans.
- Voodoo Skull
- A lot of the glowpunks are ghouls. Europe has a high HMHVV-infection rate, and many ghouls have fled to the SOX, like lepers to a leper colony.
- Zantosa

A few hardy entrepreneurs also ply their trade out of the Zone, taking advantage of the lawless wasteland to cover their activities. The most successful is a smuggler band called the *Geisterratten* (Ghost Rats), who employ t-bird tactics to run the SOX walls.

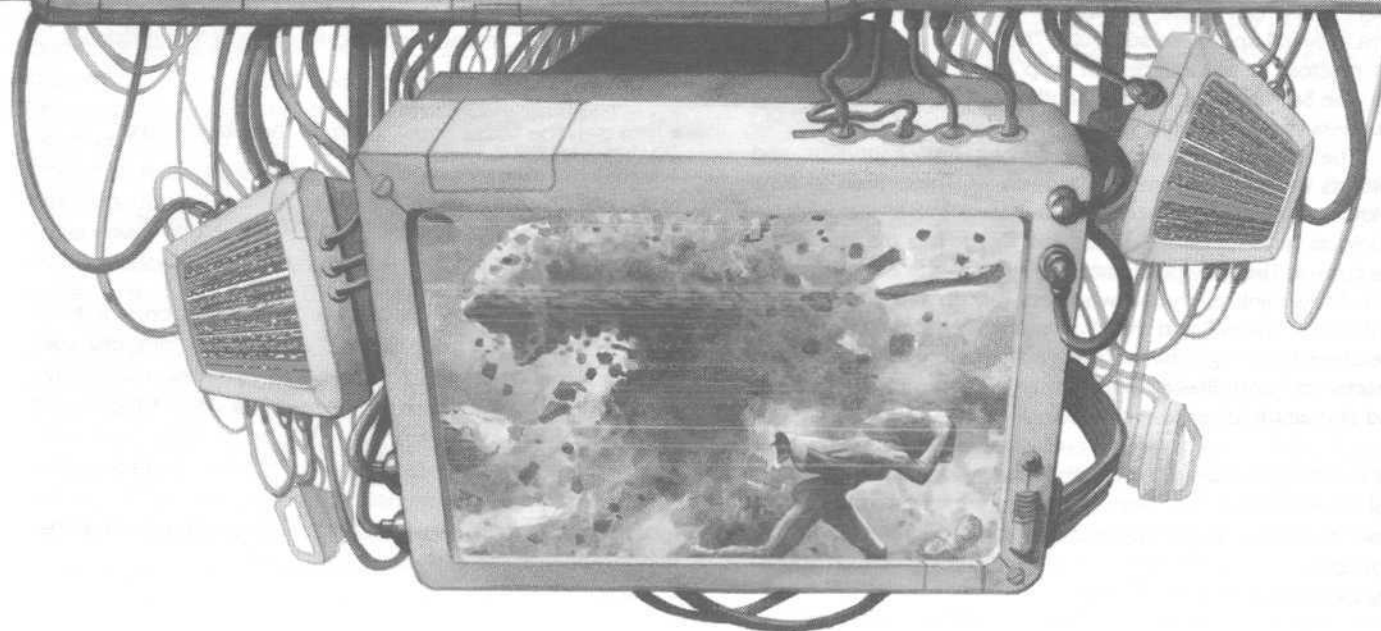
Last but not least, a number of wild, mutated paracritters make their home in the SOX wastelands, including stoneworms, SOX-chimeras, Jauchekäfer, and giant rats. Many of them have been mutated into toxic variants by the inherent radiation.

- What about Feuerschwinge?
- Mortis
- <Groan> I knew someone would bring that up.
- Drifter
- I'll take the bait. There are many rumors linking an obscure great dragon called Feuerschwinge (Fire Wings) to the SOX.

Though Feuerschwinge was officially first sighted in the Harz Mountains (in Thüringia) after the Awakening, some undocumented and generally discredited sources have claimed that he was seen in Cattenom around the time of the meltdown.

- Jon Who
- That gets the Major Bogus Claim of the Week Award.
- Reality Czech
- Some people will say or do anything to steal credit.
- Orange Queen
- No one seems willing to believe that a dragon was flying around before the Awakening. But we know the dragons were around somewhere, right? Sleeping away? Well, what if they could astrally project during their nap? Or what if they could influence people from afar, with dreams or visions? I'm more inclined to believe an explanation like that than to believe that Feuerschwinge was hibernating underneath the Cattenom reactor and that his early awakening actually may have something to do with the Cattenom meltdown.
- X-Ray
- There's more to the story (Isn't there always?). In 2012, a Bundeswehr (German military) combat helicopter claims to have downed a dragon fitting Feuerschwinge's description. The dragon appeared to be in a weakened state and was shot down with two rockets. Critically wounded, it plummeted into the ruined village of Völklingen—but search parties entering the village were unable to find any trace of the dragon afterwards. Officially declared dead by the German government, Feuerschwinge still persists as a cult figure amongst the SOX's outcast residents. Some glowpunks actually worship Feuerschwinge as some sort of god and say that he will come back again to reinstate a new world order.
- What's the truth? Who knows? Except for one alleged sighting in Iceland circa 2015, no one's seen hide nor scale of Feuerschwinge since. Maybe it is dead. On the other hand, that doesn't do anything to stem reports from shadowrunners who feel that someone, or something, is watching them in the SOX.
- Jon Who
- If you were a corp that just had a dragon (half-dead or corpse) literally fall into your lap, wouldn't you cover it up?
- Rad Warrior

SHIFTING SANDS



If you are planning a desert run and you're looking for an edge, then scan the data in this file. Desert activity is hotter than ever and there are many opportunities for runners willing to get their feet dirty and make a good score. There are even more opportunities for runners to end up as vulture food. Watching a season of the Desert Wars doesn't make anyone an expert on what to expect or how to prepare. Neither will this file—but it's a start.

I've contacted some "experts" with solid reps and vouches to give us an idea of what to expect out among the sand dunes. First up is Asad, a "consultant" with twenty years experience running ops in remote parts of the Middle East and Africa. He sold me this crash course on desert survival for some juicy morsels on Saeder-Krupp I happened to scavenge. You decide who got the better deal.

• Captain Chaos

Transmitted: 16 September 2062 at 04:30:18 (PST)

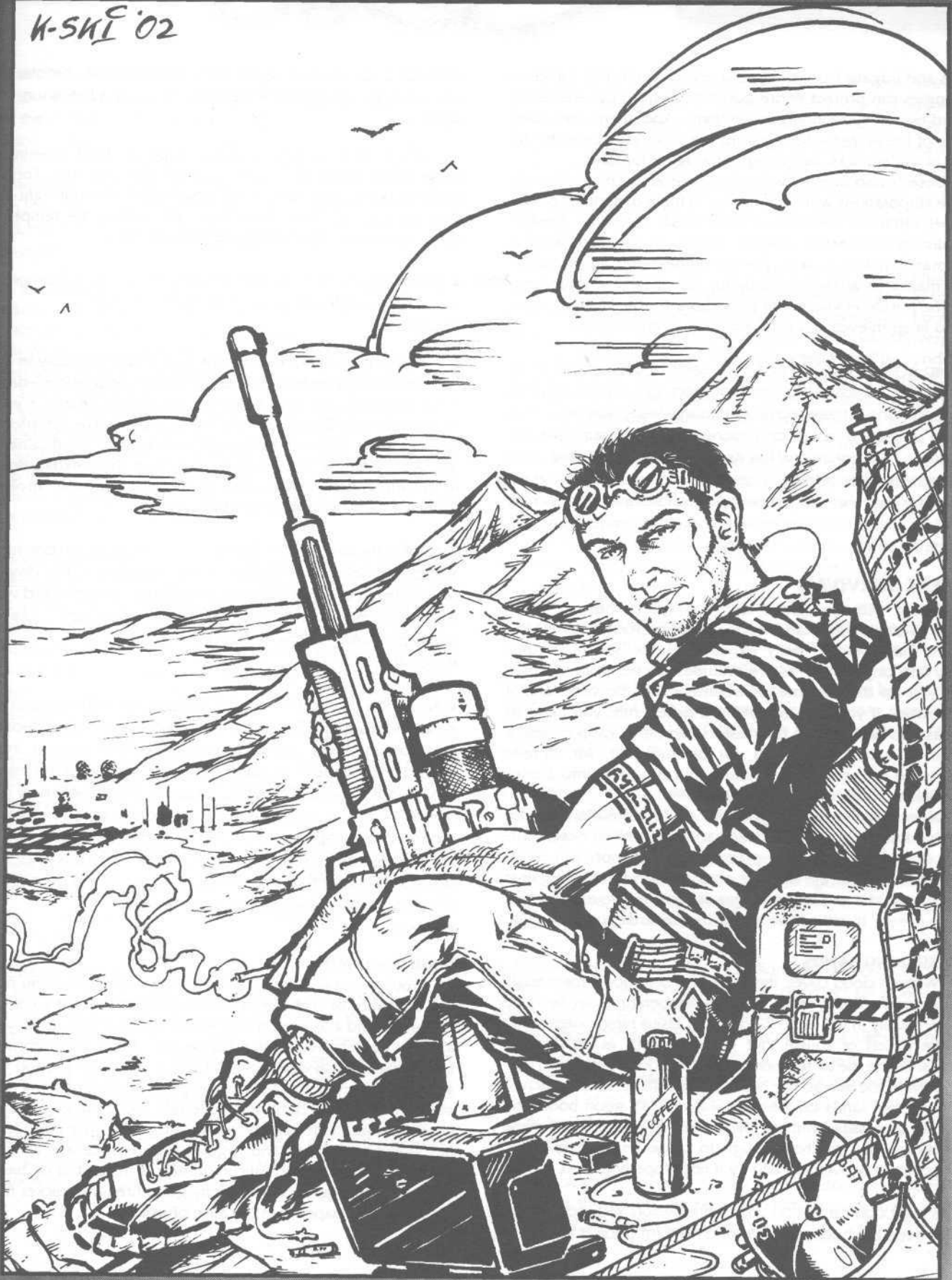
by Asad

Forget everything you think you know about deserts. You Western infidels are all alike. Your vision of deserts is the sprawling sand dunes you saw on your trid's Nature channel. May Allah preserve you. You think of deserts as inhospitable places, nothing but sand and rocks and sun, desolate and empty of life. Why should anyone ever go there?

First of all, my friend, there are many types of deserts besides the trackless sand-hills extending as far as the eye can see. Some may be flat and dusty, some may be rippled with monstrous dunes, while others are rocky or reside on mountain plateaus. Some border the ocean, where cold currents prevent precipitation and blanket the area with sun-blocking fog. Others lie in the "rain shadow" of steep mountains that act as a barrier and soak up rain clouds. Some deserts are covered with snow and ice that locks precipitation into a never-ending freeze-thaw-freeze pattern. Three features define all deserts: extreme temperatures, a lack of rainfall and a lack of plant coverage. Each has its own challenges for those who dwell or travel within them.

Contrary to the beliefs of sprawl-dwellers, deserts are not, in fact, necessarily deserted. Many cultures have claimed deserts as their homes, some for thousands of years. Nomadic societies migrated for water, food or trade, while settlements developed around oases,

K-SKI '02





farms and irrigated areas. In the modern world, self-sufficient arcologies can protect entire populations from the elements, regardless of surrounding conditions. And there are other forms of life as well—hiding from the sun's rays beneath the sand or under rocks, venturing out at night for food.

Deserts also offer us valuable resources such as minerals, as the corporations well know, often in huge quantities. Borax, copper, nitrates, limestone, and of course, sacred oil. Deserts are already considered desolate, so few people care when a corporation makes a mess. The remoteness and lack of neighbors makes an attractive locale for secret labs and projects, and the hostile environment provides a form of natural security to keep thieves and troublemakers at arms length.

- Keep in mind that some deserts used to be friendlier environments hundreds or thousands of years ago. Civilizations that once flourished there have left many well-preserved ruins buried under the sands, and archaeological groups like the Atlantean Foundation and the Apep Consortium pay top cred for locating relics, retrieving artifacts and unearthing tombs. The locals may not be pleased about foreigners running off with their sacred historical objects, though, so tread carefully.

- Elijah

DESERT SURVIVAL

Along with the greed and evil spirits these projects bring, so also come shadowrunners and mercenaries. But the desert shadows are easily exposed to the sun, and fools rarely last long. Your Western attitudes are not going to prepare you for the extreme environment and the vast cultural differences. If you plan on taking a desert run, you need to understand how deadly the deserts can be. A canteen and a bottle of suntan lotion will not be sufficient, Mr. Sprawl Runner. So take my advice before your run turns into a one-way ticket. Praise Allah the Protector.

Now that I've scared you into paying attention, let me say that humans have historically adapted well to desert survival. The key, of course is preparation. It is more important to become part of the desert's ecology than to strive against it as an outsider and an opponent. If you view yourself as part of the desert, it will not be so hostile towards you, Inshallah.

THE BURNING SANDS

Without cloud cover, the sun's rays beat down mercilessly in the desert. The average summer temperature can be quite warm, usually in the 20 to 27 degree Celsius range, depending on the desert of course, but going as high as 38 degrees Celsius. That is the air temperature—the ground gets much hotter. Even in the shade, the heat can be stifling. Walking across sun-scorched sands can be painful even with good boots and painfully impossible without shoes. Vehicle surfaces and metal objects can become hot enough to cause first-degree burns. Electronics may overheat and fry if not properly cooled.

- This heat can be hell on your thermovision. You may not be able to see the heat signature of a life form against the back-

drop of a sun-heated dune. Items that normally register as cool (metal) will register as hot after 15 minutes in the sun.

- Roy G.

It is thus important to dress properly. Head coverings, loose-fitting clothing and sunglasses are essential. Forget about wearing your sleek black sprawl studs or your tight-fitting armored clothing. Travel at night, when the temperatures are cooler (often dropping dramatically).

- Which means it's important to bring along night-vision gear, so you can see what you're doing in the starlight.

- Butch

If you must operate under the sun, adapt gradually to the heat for short periods at first. Do not ration your water—drink fluids regularly and avoid alcohol, which will decrease your heat tolerance. Exposure may inflict progressive symptoms ranging from abdominal cramps and spasms to dizziness, nausea, weakness, and cold, clammy skin (heat exhaustion), to disorientation and loss of consciousness (heat stroke). Burns can also hamper your effectiveness.

- It's all in the details folks. Suntan lotion and lip balm can really make a difference. Infections are prevalent in the desert, and blistered skin and cracked lips can become infected very easily. You may survive the heat and mission just to die of blood poisoning on the trip back.

- Gun Nut

- And once you have a wound, you'll draw bugs. You can be in the middle of the Sahara, nothing but dunes for hundreds of miles around, and within minutes of getting even a small wound flies will show up. I don't know how these damn things survive out there, but they do. Toughest trog I ever knew got himself a cut on his thigh, so he wrapped a piece of cloth around it and kept going. A couple of mornings later I woke up to him screaming. Turns out the fly maggots wiggling around in his infected wound woke him up. On the bright side, he really likes his new cyberleg.

- McKay

WIND AND GRIT

You've certainly heard of sandstorms, but what you may not be aware of is the constant hazard posed by the combination of sand and even minor winds. Wind ensures that sand and grit get into everything. For people, this is discomforting, but to mechanical devices it is terribly destructive. Sand will scratch cybereyes, clog filters, seep into cyberlimbs and sensors, jam your weapons and penetrate and damage exposed joints and gears. It eagerly seeks out grease to embed itself in. Sealed machinery and regular maintenance are a must. When possible, use dry silicon lubricants instead of oil based ones. Nothing can ruin a perfectly good firefight quicker than having your weapon jam because of sand.

- Asad is on the money here! Leave those gas-operated weapons at home, boys and girls. Recoil-operated weapons are the choice of the desert-savvy runner or merc. Given the choice, I prefer titanium ordnance, as they are resistant to corrosion that can damage a weapon in short order in an alkaline desert or along a coast. Another benefit of using powdered silicon to lube your weapons is that if you find yourself in extreme cold, this stuff won't freeze up like regular grease.
- Gun Nut

If a sandstorm does blow in, stop moving. The dust and particles will severely reduce visibility, if not blind you. Breathing may become difficult, so cover your mouth with a cloth or sand respirator. If you are without shelter, hunker down and wait for the storm to pass—and pray to Allah that you are not buried alive.

Even a vehicle that has been properly fitted to operate in the desert will be ruined in a matter of minutes if left running in a sandstorm. These storms generate enough static electricity to interfere with and damage electronics, so turn them off. If you are carrying explosives, contain them in a static wrap to avoid premature detonation.

- I know what Asad is talking about here. There was a team set for an extraction somewhere in the Sahara (I'll omit the who, what and where). They got themselves into position and then a sandstorm came down on them like the wrath of Allah. Well, it turns out that they left their plastic explosives just lying around and—BOOM!—the static from the storm set them off inside the panzer half the team was sitting in. Very messy.
- Free Fall

- Sounds like an urban legend to me, omae. C-12 is extremely stable. Hell, you can even burn it without setting the stuff off.
- Prodigy

- Don't risk it. C-12 can be detonated with a micro amp of juice. A good reason not to put Mr. Fuse into Mrs. Explosive if people are keying their mics nearby. I've seen that one happen too and earned a skin graft for my trouble, thank you very much.
- Nine-Finger Steve

PRECIOUS WATER

As a rule, bring along 4 liters of water per person per day (8 for trolls). That will be enough to survive on, though it will not mitigate other needs (animals, vehicles, cleaning). Water is best not wasted on frivolous things, so get used to body odor. Do not make the mistake of rationing your water. Drink what you need, so that your body is replenished. Careful fools have been found dead of dehydration with water still in their canteens. The key is to ration your sweat, not water. Stay in the shade, limit your activity in the sun and use what water you have.

- Let me put this into perspective. If the temperature is a balmy 48 degrees Celsius, an average Joe in good health will survive little more than two days without water, even just resting in the shade. He could walk about 8 kilometers before collapsing. An unprotected person in the heat of the day can lose up to 4 liters of water every hour by sweating. So think long and hard about how much water to bring along.
- Wurst Kase

If you lack water, your chances are slim. A precious few oases exist in the desert, where ground water seeps up to the surface, supporting a modest amount of vegetation. Look for these signs of vegetation or for signs of animals converging on a location. Often these sites will be separated by hundreds of kilometers or more. Most will have standing water that is drinkable, others simply have water-saturated soil which supports the plant life. You may have to dig a hole and let the water seep in. Forget what you have seen in the trids about water-laden plants providing water for the dying soul. Water stored within plants is permeated with natural and not-so-natural chemicals that will give a troll diarrhea for a week.

- Over time, some oases will dry up and new ones will spring forth—don't rely on outdated maps or data.
- Coronado

Even if you find/make it to a water source, don't assume that it is fit to drink. Warfare, pollution, animals and human waste have contaminated many oases. Water sources are quite valuable to local desert dwellers, so do not be surprised if they are protected in some way. The locals may treat interlopers harshly, especially if they view you as a threat to their water in any way.

- It sucks to come across an oasis as you're about to drop from dehydration and then have to take the time to stop and test the water. Thirst can drive man and beast to desperate acts that can be fatal. I lost a friend who drank up water that had been subjected to some distilled mustard gas. If you know how mustard works, well, imagine that happening on your insides.
- Andy Man

- No joke about the oasis guardians either. Some of these places often are heavily mined or guarded by concealed sentry guns or bound spirits. Bandits are known to monitor drinking spots and jump travelers as they rest. Likewise, corps have been known to track hostile tribes or warlords via satellite and lay ambushes at their next watering hole. This has made a lot of locals very trigger happy and not so pleased to see outsiders parked at their oasis.
- Dust Devil

The scarcity of water makes it a valuable commodity to anyone in the desert. So precious that those desiring it will kill without hesitation or remorse.



- How much is a liter of water worth in a desert?
- Red Raptor

• However much the thirsty guy is willing to pay. It varies. For example, the Bedouins don't use money, their dealings are barter based—y'know, X number of camels or sheep for this or that. On average I'd guess it works out to be 200¢ for a liter of drinkable water.

- Andy Man

On the off chance that Allah blesses you with rain in the desert, do not jump to celebrate. When the rains do come, they tend to come in one large downpour, as if dropped all at once from Allah above. You may see this as a godsend, but you may also be in peril. Desert soil does not absorb water well, so rain quickly leads to flash floods as the rain is channeled into torrents that will kill those in their path. Far more people die in deserts from flash floods than a lack of water. Always seek high ground in such instances, for in a matter of minutes that dry streambed can be filled with a wall of water.

• Flash floods will tear the dirt right out from underneath you, dragging you down in a mudslide and sweeping you away. Even vehicles aren't safe—I once saw a Prairie Cat that was parked in a gully get nailed by a flood. It looked like a pack of behemoths had hit it.

- Muddy

DESERT CREATURES

Deserts are not lifeless—they are home to many unique and unusual creatures, most of which come out at night after the deadly sun has faded from the sky. Large creatures such as camels are not common, as the desert does not supply enough food and water for their body mass. Insects and reptiles are the most common, with many interesting variations—some quite deadly, especially since the Awakening. Spiders, scorpions, locusts, venomous snakes and lizards are regular desert denizens. Be careful with your campsites and gear, as they will seek out shade and cool areas.

• Before you get any romantic thoughts about riding camels through the desert like that slag Lawrence on the flatvids, take my advice and reconsider. Camels smell (I ain't just talkin' squatter funk, either—camel aroma will make a troll woozy), they swarm with bugs, they're ornery and they'll happily bite your friggin' hand off. Rent a 4WD utility vehicle instead.

- Dust Devil

Most desert predators feed off of insects and other desert creatures, but the new breeds brought by the Awakening have changed everything. You will find that some desert hunters conceal themselves beneath the sand, waiting for victims overhead, or they lie hidden beneath rocks or other cover. Many predators loiter in the vicinity of springs and oases—or live within them—catching their prey as they converge for nourishment.

• If you're travelling by foot in the desert, consider taking some snake mesh knee-length socks. They're uncomfortable to wear in the heat, but they're not too heavy and they may keep that cobra from sinking its fangs into your calf.

- Gimp

DESERT GEAR

As I've said, preparation is the key to desert survival. Aside from the basic necessities, canteens, sunglasses/goggles, tents, breathable hiking boots and headgear, there are other items you should consider taking along that you may not be familiar with.

A handheld chemical analyzer is essential for testing the quality of drinking water at oases. The device can tell you almost immediately whether the water is safe to drink or not and what chemicals it may be contaminated with. You will also wish to have water purification tablets in order to distill tainted water, though these come in most desert survival kits. Proceed with care, as even distilled water may not be drinkable! Test it again. Even mildly contaminated water can render a fit individual little more than dead weight. Alternately, you can carry a solar still, which will extract pure water from contaminated water.

• It's worth having a rad counter and a bio-analyzer too, just in case that water hole is tainted with something other than chemicals.

- Omega Man

• If you get caught in the desert without water, it's easy to construct an ad hoc solar still if you have a sheet of clear plastic. Just dig a depression, put a container in the middle, spread the plastic over it, and weight it down in the middle (like an upside down cone). Condensation will collect on the plastic and run off into the container. If you're good, you can get a liter of water a day from a still like this. Not enough to survive on, but it may help.

- Roadrunner

If your mission requires you to spend lengthy periods in the desert sun, then a "desert suit" is essential. This suit performs vital tasks for the wearer: it provides protection from the sun and sand, it moderates the wearer's body temperature and it reduces water loss and reclaims some body moisture. They take some getting used to, but a desert suit will allow the wearer to be active under the blazing midday sun without undo discomfort.

• "Take some getting used to?" Say that again! It's like wearing a latex glove, only worse. And the "reclaiming body moisture" is pretty gross, if you ask me. I suppose I'd rather drink my own distilled sweat and piss than die of dehydration, but don't expect me to like it. And if you're not careful when you peel this thing off and put it back on, you'll get sand or grit inside. Can you say abrasion?

- Paul



- Careful with these suits. The reflective surfaces are dead giveaways to your position from a distance. They have matte, non-reflective versions, but they're less efficient.

- Signal

Keep in mind that vehicles and drones also need to be properly outfitted for desert conditions. A vehicle without the proper modifications will have one-fifth the operational life that it would in other environs. Trust me, the time and expense are worth it—your food, water and other preparations may mean nothing if you get stranded in the middle of a desert. And, of course, don't forget to bring an appropriate amount of fuel. Deserts do not have a petrol station on every corner—you'll be lucky to find one within a hundred kilometers, Inshallah. This is the one advantage that animal mounts such as camels have over vehicles—they have no need for fuel, oil or lubricants.

- Be careful about contracting vehicles for trips into the desert, unless the vehicle comes with an operator. You may end up with a rental lemon, and there'll be jack all that you can do when it breaks down in the middle of nowhere. At least with the operator along, you know that he or she also has an invested interest in getting back out of the desert.

- Rigger X

- On the equipment tip, I'd recommend another piece of gear for runners and mercs: seismic mics. These aren't survival necessities, but they're wiz tech. These are rods that you stick into the sand, linked together via a wireless network. You put on the headphones, and with a little practice you can detect the seismic vibrations of nearby vehicles, large animals, people, etc. If you're really good, you may be able to guesstimate their direction and speed. Handy for base camps and ambushes.

- Desert Rat

THE DESERT WARS

- I found a true specialist to give us the full scan on the Desert Wars—Colonel Ziemann, formerly of Ares Arms. Those of you who religiously follow the Desert Wars on trid may remember him from the televised Desert Challenge VI in 2051 where he was awarded MVS (Most Valuable Soldier) for registering forty-eight kills (including four panzers) in one engagement lasting a scant fifteen minutes. Merc types may know him from his numerous post-Ares exploits, including the siege of Subic Bay just a few months ago. With over eight years experience planning and executing combined arms missions in the Desert Wars, he's earned the right to present his views here.

- Captain Chaos

Transmitted: 16 September 2062 at 04:34:00 (PST)



by Colonel Ziemann

Unless you're an anti-tech Luddite, you've heard of the Desert Wars, the competitive corporate shootout that has become the world's largest and most lucrative sport spectacle.

HISTORY

The Desert Wars can trace their origins back to the Ten-Minute War between Libya and Israel in 2004. That's when Libya hit Israel with a chemical weapons attack and Israel responded by nuking Libya right off the map. Egypt absorbed Libya's irradiated remains while its former citizens fled to refugee ghettos throughout Africa and the Middle East.

As the story goes, several decades later a couple of corporations caught wind of some top-secret military technology squirreled away in a weapons-lab in Libya that somehow got missed by both the Israelis and the UN inspection teams. Both corps sent teams in to acquire this new asset and when they butted heads, it turned into a battle in the desert. The media caught wind of it and broadcast the battle to enormous ratings. That's when the corps realized they stood to make more money off broadcasting fights between their security and military forces than whatever they hoped to gain out of the Libyan ruins (supposedly the item that started the whole thing was blown to pieces during the fight anyway).

- Of course the only part of that tale that's true is the fact that the megacorps did start having war-games in the Libyan Desert and that they were televised. The rest is corporate spin-doctoring and urban legend. The Desert Wars were a planned event from moment one. Once again, the megacorps found a use for an otherwise useless piece of land that serves to train their security personnel and make them money while doing it.
- Findler-Man

The Corporate Court soon cut a deal with the Egyptian government for long-term use of the Libyan Desert as a training ground for corporate security personnel (and military assets), as well as a staging area for the Desert Wars. The idea caught on quickly, and the Desert Wars became an annual event, with "skirmishes" staged at other times of the year and training exercises going on almost constantly. It's almost as if the initial burst of nuclear violence in Libya (to say nothing of years of terrorist activity) has permanently charged the air there with a need for blood.

- Can the poetry and stick to the facts, chummer.
- Jaxon
- Actually, Ziemann does have a point. I've been to Libya and I've got to say that there is almost something in the air that makes people more aggressive. Maybe it's just the fact that everyone there is a corporate grunt of some kind or another, but it seems like they're always itching for a fight. I understand that disciplinary problems are more common during Desert Wars and even exemplary soldiers have been known to fly off the handle a bit when they're assigned to Libya.
- Hangfire

- The corps certainly have a sweet deal going with Desert Wars. They pay a pittance for the use of the entire Libyan Desert, since it's worthless to everyone else. They get to train their personnel there, even using the ruins of some towns and outlying cities for urban warfare training. Then they turn around and sell the broadcast rights, merchandising, commercial endorsements and so forth, turning a tidy profit for what should be an expense.

- Foxfire

BLOOD FOR RATINGS

You are sitting in front of the trid, a frosty soy beer in one hand and salty krill flakes in the other. On comes the weekly Desert Wars coverage. Combat analysts deluge you with factoids about the latest, greatest piece of high-tech gear that is being employed for the first time and the current mission that the sides are undertaking. If you're a registered arms dealer, you can access simultaneous feeds that provide actual specs, catalogue links and special purchase offers. Meanwhile, the main feed cuts to each of the planning sessions as the field commanders get their final orders and then head out. Reporters chat with the latest batch of cybersoldiers that are gearing up while professional stats and historical clips appear in pop-up windows. The banter is fast and furious as each side talks trash about the other.

Once the hype is laid on thick and you get zapped with a good dose of million-nuyen commercials, the game begins in earnest. You can choose from a menu of battlefield coverage perspectives, including tactical overview, media drone or commander's chair. Or you slot your stick and jump into your favorite soldier's simsense feed as he or she jumps into the thick of things. By the time it's all over, you are drenched in sweat and feeling like you personally kicked hoop and took names.

This is the wonderful world of the Desert Wars, from the pre-season matches to the final battle that decides the winner of the Desert Challenge! It has it all—grudge matches, intrigue, ongoing story line, special effects and the regular fatality to keep you glued to the trideo for four months plus.

- OK, what's the scan? Do the corps use live ammo or what? I can't believe they'd actually waste lives and materiel for entertainment purposes, and I know I've seen some soldiers "die" only to re-appear in the next match. They play it up like it's for real, but what really happens?
- Truman
- Truth be told, it's a mix. All pre-season and most regular matches use high-tech wargame systems to simulate actual fighting. You'll see gel rounds, tracers, flash-bangs and lots of glitzy non-lethal (well, not intentionally lethal) effects. A lot of corps employ special effects teams to simulate real blood, gore and destruction. But in reality, each soldier/unit is linked to a system that informs him when he's dead, or locks up the vehicle controls and mutes the sensors, and so on. Competitors can mutually agree, however, to escalate the

battle to live fire. This rarely happens, except for the Championship match. For over five years now, it's been customary for the Championship to be the real thing, through and through. So when you see a grunt get whacked in the Big Game, he's going home in a body bag for real.

- Ditka

Why do the corps spend millions of nuyen to keep you entertained? First and foremost, the Desert Wars are a promotional extravaganza that pushes arms sales through the roof. Arms purchasers around the world, from the leaders of developed countries to dictators and warlords of the third world nations, keep an eye on the games and what nova new tech carries the winner to the winners' circle.

Second, the Desert Wars are the biggest sports event of the year, dwarfing even soccer and urban brawl in ratings and promotions. Broadcast rights for last year's Desert Challenge championship went for five hundred and eighty-nine million nuyen. The sixty-second spots that aired during the four-hour championship sold for twenty million nuyen each and were seen by nine hundred million people around the world. Everybody loves a winner, and a championship win translates into monstrous spin off sales.

Finally, there are the practical reasons that make the Desert Wars cost effective for the corps: field-testing of new toys under real battle conditions, training and experience for security forces and the chance to try out new ideas and tactics while getting a peek at everything your opponents do as well.

THE MATCHES

The majority of official Desert Wars matches take place in the northern Sahara (Algeria, the part of Egypt that was once Libya, and the part of the Sahara called the Libyan Desert). The central staging point is Tamanrasset in southern Algeria in the Ahaggar Mountains. As the Desert Wars have grown in popularity, Tamanrasset has been rebuilt to accommodate the media, megacorp bases, mercenary outposts and fans. Adobe style blockhouses have given way to reinforced concrete and razor wire. During the championship, the city's population swells from a quarter of a million to a million plus. Military brass and politicians are a dime a dozen during this time as they start looking over the latest hardware that is going to be up for sale in the coming year. Security measures are jointly shared between the Big Ten, employing strict measures to protect against potential terrorist attacks.

- Let me get this straight. A large percentage of the world's warhawks and mass murderers gather in the same place every year for a big military orgy? One good nuke would solve a lot of the Sixth's Worlds more persistent problems.
- Radical
- It's been tried. The corps have geosync satellites over the city, watching every meter of it and the surrounding countryside. Top line security is in place to keep any of that SOTA mil-spec gear from disappearing into the wrong hands and to

prevent any terrorists from stealing the corp's media thunder. Last year the firefight between two counter-sniper teams who thought that their opposite numbers were terrorists was worth the price of admission.

- Canuck

The Desert Challenge is the main event. All AA-mega-corps are invited to participate and field forces (or even more than one force, as Ares regularly does) for the four-month season. The pre-season is filled with trial games, soldier exchanges, and other hype. A pan-corporate team called the Desert Wars Commission decides the season's events, with members appointed by the Corporate Court. At the beginning of the season, each force heads out into a pre-selected area of desert where they will establish a base. Forces remain in the field during the entire season, though rules allow for supplies and reinforcements.

The season itself consists of mission objectives issued to various forces. Missions come in all shapes and forms. Infantry platoons may have to seize landmarks or penetrate enemy encampments to destroy objectives or rescue hostages. Mechanized and panzer units are pitted against each other or static defenses. Air units compete in dogfights, ground support and anti-tank strikes. Matrix teams penetrate enemy hosts, plant viruses, steal data, disrupt communications and fight IC and other deckers. A complex rating system determines points gained from objectives and kills.

- The Matrix events are gaining in popularity, both with the public at large and the corps. The people love it because of the diversity of the challenges; the corps because these events offer the biggest bang for the nuyen in terms of cost versus rewards. Matrix software and hardware sales live and die by how they perform in these fantastic fights.
- Gleeful

Less lucrative but still high stake games take place through the remainder of the year, including the Mercenary Challenge (merc on merc) and the Open Challenge (corp, merc and the occasional nation-state military).

- The Merc Challenge prize money is enough to draw some of the top talent from around the world. Last year it was one million nuyen for first, half a million for second. The winner of the Open Challenge nets two million, but the corps use this as an opportunity to show just how superior their gear and troops are to what is generally considered to be the opposition. And to date the corps haven't dropped the ball.
- Steel Lynx

BEHIND THE SCENES

Of course, we all know there's more to it. In reality, the Desert Wars range across the Sahara, though the area that was once Libya remains the favorite haunting ground. Years of plague (first AIDS, then VITAS), war, exploitation and famine have heavily destabilized the region. Unstable gov-



ernments and warlords are unable to withstand the brutal might of the megacorps, who run amok according to their whims. Life (or a whole lot of lives) can end very abruptly in this region of the world.

The unpublicized Desert Wars mostly exist as an ongoing series of conflicts between various local factions, each backed by one megacorp or another. This is where the real battlefield testing takes place, where the value of new milspec gear is rated according to blood spilled and havoc wreaked. The pockets of still-unexploited resources are the prizes in this game, and the starving cannon fodder and refugees are the losers. You also have the occasional instance where two corps decide to settle a dispute via trial by combat. This tends to be a rare event, but often enough to leave the burned out hulks of state-of-the-art panzers in the desert.

- Give me a friggin' break. This isn't the Middle Ages. Business professionals don't look at each other across the negotiating table and say "Let's settle this by staging a small war, shall we?" That's patently ludicrous. It's simply not profitable, and that's always the driving motivation.
- Reality Czech
- Megacorp globalization is more similar to feudalism than many people want to admit. I admit the idea of resolving disputes on the battlefield is odd, but these are the types of decisions you can expect from high-ranking geeks who destabilize governments for a living. Sure, they may take a loss, but the trade-off in live training, field-testing and intelligence gathering is often worth it to them.
- Wobbly

The constant warfare has left its mark on the desert sands. Battle wreckage, chemically contaminated zones and worse things litter the region. Shifting dunes cover unmarked mine fields and unexploded munitions, posing risks to locals and travelers. Scavengers (the metahuman kind) are drawn to these areas in the hope of salvaging some bit of tech. Knocked out tanks, downed choppers, discarded small arms—we're talking one giant sandbox junkyard. Political boundaries shift regularly, though, so you never know whose land you're trespassing upon. And there's always the chance that your campsite may be randomly chosen as ground zero in the latest unannounced Desert Wars match.

RUNNING THE DESERT WARS

So what can you get out of this? Plenty. Since the inception of the Desert Wars, every imaginable type of run has been contracted out: thefts of prototype gear, forced extractions of star mercenaries, slipping a little something into a team's water supply to dull their edge, sabotaging media feeds and so on. These runs pay 50 to 75 percent above average and the odds are extremely good that the Johnson is not setting you up. The caliber of runner is expected—make that demanded—to be top shelf. Posers and wannabes need not apply, because there are no second chances here. Understand that you won't be butting

heads with some eight-nuyen an hour rent-a-cop; the opposition here is combat veterans armed with SOTA mil-spec gear.

- Do yourself a favor and read the last paragraph again—it's the gospel. The opposition is head and shoulders above even a Knight Errant SRT, packing enough firepower to reduce a panzer to slag in three seconds. If you start pulling these types of contracts, you have made it into the majors. Well-rounded teams with cross-trained members covering all of the bases—magical, Matrix, rigger, and physical—are required. Nuyen for noodles, if your team is lacking in any one area, well, your bones will bleach nicely in the desert sun.
- ReLode
- Satellite intelligence is a real killer in the desert. Unlike Seattle, where you have cloud cover for a lot of the days out of the year, the Sahara is without such a benefit. Corps like Ares and S-K use their significant spysat networks to their advantage. It pays to keep up on satellite tasking, especially the closer you get to the targets. On the positive side, corps aren't going to share their intel with one another, so if Ares spots you getting ready to pounce on S-K, they will most likely happily sit back and watch the show.
- Jones
- ... And then intercept you and relieve you of the precious goods as you make your getaway.
- Grey Knight

Away from the mega-nuyen matches, there's plenty of dirty work to be had, especially for mercs. Corps need runners to accomplish goals that the locals and their own forces are ill-equipped to do—not to mention the advantage of plausible deniability when targeting a rival corp. Given the chaotic nature of the region and the fact that outsiders tend to stick out like bright orange targets, I highly recommend arranging emergency evacuation plans.

Finally, the scavenger game is always a possibility, though the rewards vary greatly. It's usually a matter of getting to a recent battlefield first, salvaging what you can and getting out before the locals and corps catch on. Or there's the patient sift-through-the-desert approach, which works best if you've located a site that previous scavengers may have missed (due to remoteness, weather or other conditions).

- Rival corporations really are willing to part with nuyen for scavenged gear, even damaged goods, just for the sake of seeing what other corps' research gurus have invented. And what a scavenger can't sell to a corp, local fixers and warlords are more than willing to pick up. Who knows, that case of APDS ammo that you are bidding on might have been pulled out of some wreckage in the desert.
- Desert Rat



GREAT DESERTS

• There are more scraggly sandpits in the world than most people think, so there's simply no chance we can cram coverage of all of them into this file. Instead, you get the best of the worst. Each entry comes from a local with appropriate street cred (or is that sand cred?). Don't expect this data to be written in stone—the sands are always shifting, so what's true today may not be true tomorrow. Don't bet your life on it.

• Captain Chaos

Transmitted: 16 September 2062 at 04:38:03 (PST)

THE ARABIAN DESERT

by Maghrebi Monster

The Arabian Desert is an astounding creature, dominating the Arabian Peninsula. It covers over two million square kilometers, much of which has never been explored except by satellite, even in this day and age. The white sands of the famous Empty Quarter (Rub 'al Khali) are noted for some of the most extensive dunes in the world. The temperature ranges between 49 degrees Celsius in the summer to a more pleasant 23 degrees Celsius during the winter months. Sandstorms are frequent during the summer, especially in the eastern portion of the desert where the wind blows almost continuously. A combination of mountains, salt flats and gravel plains comprise the remainder of this desert.

Oil and Power

The Arabian Peninsula has been home to many cultures over the years and is rich with history and myth. Islam became a dominant force in the region (and still is), though various factional states continued to disagree. The area's huge reserves of oil—supplied to countries across the globe—brought immense power and wealth to the ruling elites.

Fifty years ago, the oil reserves began to decline. The governments saw the writing on the wall, and had the foresight to invest their vast wealth into other areas, building up new infrastructure and diversifying their economic base. Despite major setbacks such as the Crash, the Awakening and a fundamentalist resurgence and involvement in the Euro-Wars in the 2030s, the region has remained economically stable. The Islamic Unity Movement, led by Ibn Elsa, successfully united the Arabian countries in 2055, choosing King Kalim Sa'ud of Saudi Arabia to be the first Caliph. Today, less than a quarter of Arabia's GNP is from oil exports—the country now thrives on banking, shipping, electronics manufacturing and alternative energy technologies.

• When the USA lost the war with the NAN, a lot of Saudi investors were ruined. Prior to that point, Saudis had bought up huge tracts of real estate in the United States, not to mention their purchases of US Treasury bills (which was the major way that the US government funded their debt). When the US became the UCAS and they nationalized their debt, it did more financial damage than the Matrix crash by a factor of ten! It was a house of cards that came crashing down.

• Specter



The new economy drew megacorps like flies to camels, and now dozens of them tussle over new industries and the remaining petrochem possibilities. Local-based multinationals such as Ifrit Services, Xenel-Oman and Arabian Future Industries compete with Yamatetsu Middle East, newcomer Wuxing and heavyweight Saeder-Krupp for dominance. But the real action is among the few oil sheiks that remain, clinging desperately to their diminishing reserves. As the oil gets sucked away, the infighting and backstabbing grow more fierce and brutal. Saeder-Krupp skillfully plays the various factions against each other while United Oil, Exxoco Petrochem and others still draw instant credit from beneath the Earth.

- The one advantage a lot of other corps have against S-K is that a dragon does not lead them. Devout Muslims are very wary of S-K, though Saied Bey's influence and Lofwyr's talent for hiding corporate links usually bypass this obstacle.

- Felix

- A lot of Arabic corps are struggling over whether to support the New Islamic Jihad. Ifrit Services, which used to be a major backer of the Islamic Unity Movement, pulled out when Ibn Elsa turned militant. Business leaders understand all too well that another major war will only hurt their foreign investments.

- Nephilim

Numerous oil fields, drilling operations and refineries can be found along the Arabian Desert's eastern edge. These sites boast major security to deter sabotage and theft by rivals. As the reserves run dry, more effort is put into exploration and locating new deposits deeper in the desert. Survey teams travel armed, and any potential site is quickly seized and locked down against interlopers.

The Bedouin

The Bedouin people are scattered throughout the Middle East and northern Africa, but the nomadic desert tribes claim the Arabian Desert as their territory and home. They've traded in their camels for four-wheel drive utility vehicles, but they still disdain a settled lifestyle, instead traveling from oasis to oasis as their ancestors have for centuries, herding goats and sheep.

Grouped in extended family units headed by a patrilineal sheik, the desert Bedouin have grown increasingly insular and hostile to outsiders, especially in reaction to the changes and advances of the outside world. Many Bedouin will welcome visitors with hospitality, though metahumans and magicians will be viewed with distrust. Other Bedouin raid and attack outsiders, especially corporate attempts to exploit desert lands.

- Some Bedouin follow old-fashioned Islamic beliefs, so it pays to know what you're getting into. First, they think that someone with cyberware is declaring that Allah's design of man was not good enough and that they are attempting to overrule Allah's will. Bad news. Second, magicians are believed to have

sold their souls to Shaytan for powers that no mortal should ever have. Spirits are also considered evil. Third, metahumans are viewed as touched by the darkness of Shaytan. And I won't even go into their not-so-enlightened views towards women.

- Sheba

- Static. Only a few Bedouin are that traditional. Most are in tune with the modern groove, enjoying modern amenities, satellite Matrix links and live newsfeeds. Just don't expect them to accept credsticks for payment. Barter is the way to go.

- Audrun

- The Bedouins had an extremely low rate of Goblinization and UGE—perhaps the lowest in the world. It's hard to tell for sure, since they don't exactly return email to the census bureau. It's also suspected that many elf, ork, dwarf and troll children were killed, and their parents castrated or driven out. Whatever the case, you'll be lucky to find any metahuman Bedouin.

- Fact Finder Four

In this day and age, it is rare for even megacorps to send missions into the Arabian Desert without Bedouin guides or approval. Bedouins have a reputation as fierce desert fighters, so it's standard practice to stay on their good side.

- For centuries, the Bedouin have gotten the shaft while their neighbors grew wealthy. They still hold a grudge, but they don't let it keep them down. They just refuse to be stepped on anymore, and the prosperous Middle East arms trade has provided them with the tools to ensure that.

- Encarta

The Bedouin jealously protect their unique breed of Awakened Arabian horse, called ghazu horses ("ghazu" means "raid"). Even smaller than traditional Arabian horses, ghazu are fast and have a high endurance. Equine dealers around the world desire a breeding pair, but so far only a select few have been snatched from Bedouin hands.

Arabian Shadows

There is plenty of business to dig into on the outskirts and more hospitable areas of Arabian Desert. Smuggling of arms, slaves, drugs and illegal electronics (simsense for the most part) are all major moneymakers. The Islamic crime cartels go to great lengths to hide their operations, setting up BTL factories, drug labs and other interesting projects far from prying eyes. Sheiks and princes and petrochem corps spend millions of nuyen to contract the very best (including mages) to protect themselves and their assets, or to mess with their competitors. Even piracy is an option, raiding tankers and cargo ships from the "Pirate Coast."

In the deep desert and Empty Quarter, most shadow biz involves the Bedouin, whether arranging safe transport for a corp exploration team or trying to steal a ghazu horse.

Archaeological digs are a hot item right now, as the desert is believed to cover many buried cities.

- The latest dig is about 250 kilometers west of Abha, but its intent—and sponsor—are shrouded in secrecy. Rumor is they're hoping to unearth the spikes used to crucify Christ. Perhaps the Vatican is involved?
- Synner

- The legendary city of Ubar, a prominent trade center built on frankincense profits around an oasis four thousand years ago, was unearthed near Ash Shisr almost six decades ago. The Atlantean Foundation recently sponsored a new excavation there, focusing on the giant limestone caverns that existed beneath the fortress—and that ultimately spelled its doom when the city collapsed into them.

- Delver

- I know for a fact that Yamatetsu is interested in investigating the Mahram Bilqis (Temple of the Moon God), a pilgrimage site during the reign of the Queen of Sheba. It was also discovered several decades ago in the southern Arabian Desert, but the site was buried during a massive sandstorm and abandoned. Now Yamatetsu wants back in for some reason—but the local Bedouins don't seem eager to let them.

- Elijah

THE GOBI DESERT

by Mazaalai

The homeland of my people is not the barren desert many think it is. Once an ancient inland sea, it is now the second largest desert in the world. With an average elevation of 1,200 meters, it is one of the coldest places on the face of the earth. Occupying the southeastern portion of Mongolia and much of what was northern China, it is a truly unique place. Travelers will find low hills and gravel plains, isolated springs, forests, remnants of the Great Wall of China and even glaciers. Sandstorms are severe between November and May, raging from the Gobi to Chinese coastal cities in a single day. The lack of water remains a major problem—though the winter cold is a greater concern.

- This is a tough region to operate in. Besides being cold and dry, it takes a couple of weeks to get acclimatized to the thin air at that elevation. Summers are short but hot enough to make daily activity difficult.

- Finis

Corporate Activity

The Gobi Desert has many attractive qualities that have drawn corporate interests. Mineral exploitation is the main resource, as corporations like Eastern Tiger, Global Oil and Seven Arrows profit from petroleum, natural gas, turquoise, jade and crystal. Yamatetsu is a big player, holding some key mining rights and running several refining sites that actually have eco-safe clean smelters.

- Yamatetsu has a 2,500-kilometer long double pipeline that transports crude oil and natural gas directly to Vladivostok. Eco-activists are all bent out of shape about the environmental risk that the pipeline offers. With so many Japanacorp enemies and United Oil looking to wedge in on the scene, Yamatetsu is looking at a 2,500-kilometer long security nightmare!

- Gleeful

The real advantage of the Gobi, though, is its high elevation, lack of air and light pollution, and its natural bowl-shape, which shields the region from outside electromagnetic interference. This makes it a perfect location for ground-based deep space and orbital tracking stations. Ares, Saeder-Krupp, Novatech and Yamatetsu all have major installations located here dedicated to those ends.

- These sites don't just facilitate tracking and communication—they're perfect for spying on commsats.

- Twinkle

- Some of these uplink farms are massive! Ares's farm has one hundred dishes, each two hundred meters in diameter, with ten more forty-meter dishes hidden inside geodesic balls that look like giant golf balls at a distance. These bad boys are the spy dishes, concealed from view so as not to tip off just whose satellite they're currently eavesdropping on. Buried underground they have onsite supercomputers with the latest decryption software, as well as subsidiary systems for non-spying activities.

- Electrokin

- All the corps involved in this space/spy game have agreed to keep their electronic emissions to a minimum lest they spoil a good thing. Communications are via buried fiber optic landlines (and booster stations) and the buildings are shielded to prevent electromagnetic emissions. We're talking places with carpets welded to the floors with tiny metal fibers to prevent the buildings from conducting static electricity.

- SOTA Jerk

Gobi Residents

If you imagine hordes of Mongols mounted on horses charging across the desert, you are sadly mistaken. The Mongols and Chinese who live within the desert are nomadic herders, tending sheep, goats, camels and yaks. Modern Mongols are some of the most tolerant souls that a person could ever hope to run across, with perhaps a slight bias towards the Chinese given past conflicts with what was once communist China. Metahumans are accepted, and in fact, the ork population is quite large.

- Don't write the Mongols off as pacifists, though. They have a martial tradition that extends back more than a thousand years. More to the point, they've had to deal with the antics of Chinese warlords, Russian criminal organizations, Siberian mili-



tants and a unique assortment of Awakened beasts: for decades now. They're armed to the teeth, believe me.

- Dmitri

The Gobi's wildlife population also thrives, and many once-rare species—snow leopards, khulans, ibex, desert bears, takni, etc.—are now populous once again. Paranormal creatures are numerous, especially mist lynxes, shapeshifters and humped horses.

Gobi Shadows

There are many shadow opportunities that bring outsiders to the Gobi. Data theft from the uplink farms has been common, with extractions and sabotage heating up as space interests continue to climb in the comet's wake. Water smuggling is hot biz, as is arms dealing to the various Chinese splinter-states.

- Of late, Monobe has been pursuing half a dozen digs in the Saksaul Forest, attempting to recover the fossilized remains of various prehistoric plants and animals. Twenty-seven complete skeletons have been unearthed, and in several instances complete specimens that were frozen solid in glaciers. What precisely the economic application of such items is remains elusive.
- Elijah

- Oh yeah? I read in some top-secret file somewhere that Monobe has developed technology that allows them to recreate and synthesize DNA molecules from just partial samples. This tech is being used in research for new bioware, genetic splicing and pharmaceuticals. Some of the smaller specimens have actually been recreated in incubation vats.

- Zippo

- Great. "Dino-ware, coming soon to a bodyshop near you!"

- T. Rex

THE NAMIB DESERT

by Shetani

The Namib Desert stretches along a thousand kilometers of the western coast of southern Africa (the Skeleton and Diamond Coasts). Receiving virtually no rainfall, the sand heats up to 65 degrees Celsius every day. Winds blow strong and hard, constantly shifting the massive sand dunes. The temperature drops way down during the night and a fog rolls in at dawn, reaching as deep as 100 kilometers into the desert. This fog and the dew it leaves behind are the only moisture that most of the insects and plant life have to survive.

- There's something seriously creepy about that fog. People have a way of disappearing into it, like the mist just swallows them up. I was literally walking elbow to elbow with a buddy, but we couldn't see each other through the thick white soup. I felt a tingle, like static electricity, and he was gone, never to be found. Stick close to your friends when the fog rolls in, chummer.
- Tendril

- Wrong SIG, pal. Cheap horror sims are down the corridor to the left.
- Bung

Desert Magic

The Namib was once home to five large cities, but all but one of these—Swakopmund—have been abandoned to the encroaching desert sands. The others are half-buried ghost towns, home to a few stalwart refugees, bandits or smugglers, soon to be swallowed under the dunes. Smaller inhabitations have been known to disappear over night.

- Humans and metahumans may have a hard time here, but the seals sure don't. At the beginning of November and for six weeks thereafter, the Namib coast serves as a mating and birthing ground for more than half a million fur seals. A hundred thousand pups are born here, every year. Some poachers like to come out and club the poor suckers for their coats, but the eco-activists make a presence each year to, um ... deter this opportunism.
- River Raider

Experts note that the Namib is growing at an alarming rate, advancing both northward and inland through the mountains, towards the Kalahari. The Namib's weather patterns have also grown extreme. This year weather satellites have tracked six desert cyclones to date, some lasting days as they tore through the desert. Other phenomenon have been reported, leading some experts to postulate that the weather changes may be the influence of shifting mana lines in the area.

- I know one corp sent a "storm chaser" team down to evaluate these cyclones. I guess the watchers got a little too close, and the whirlwind suddenly shifted direction and ripped into them. The live feeds caught sand pellets tearing through the car and one of the researchers getting flayed alive before static cut in. Grislly.
- Bruce
- Need another example of weirdness here? Last month, eighteen megalodon carcasses washed up on Namib beaches. They weren't beaching themselves, like whales sometimes do. They were already dead—each appearing to have been burned from the inside out.
- Hammerhead

- The magic may be weird, but in my opinion, the Awakened insects are worse. If the dancing white ladies don't getcha, the black wasps will.
- Stinger

Corporate Activity

Namib's coast is a gold mine for the energy industry. Global Oil has twelve offshore drilling platforms, and several smaller corps follow suit. But the big winners are Vulcan Systems (a Saeder-Krupp subsidiary) and Renraku Africa, which both utilize wind farms, solar energy plants and tidal hydroelectric generators to generate and provide power to various nearby nations. Low level runs to interrupt service and create complications are common, but neither corp has escalated their rivalry to the massive fireball level—yet.

- Both corps use their power supply as leverage over the nearby nations, particularly the Azanian states. As in: "What? You refuse to lower your export taxes? Well, then, it looks like your power grid will be shutting down for a week. Whoops. What's that? I thought you might come around."
- Big Boer
- I don't know about power generation corps, but I do know that some outfit called Komatsu has a magical R&D lab out in the Namib. Rumors peg them as pursuing research into the area's fluctuations and anomalies.
- Uhuru
- Komatsu? What are they doing there—aren't they're a chemical corp?
- Synthesizer

THE SAHARA DESERT

by Sandman

The Sahara is the largest, as well as one of the oldest deserts of the world. Running from the Atlantic Ocean to the Red Sea across the width of North Africa, it is vast, covering some nine million square kilometers. Powerful trade winds will blow for days on end, reaching speeds of 129 kph and creating the living dunes that move across the Sahara's broad expanse. Some of these dunes (called *ergs*) can reach heights of 400 meters and extend for 6 kilometers. The Sahara also includes rocky mountains and gravelly badlands. Scattered across this region are some ninety oases, fed by vast underground aquifers and rivers. The Nile and Niger rivers penetrate the Sahara, acting as lifelines around which civilization clings.

The Sahara encompasses half a dozen modern countries, and has been home to uncouped ancient civilizations. But for now, I shall stick close to the main topic: the Sahara's deep interior and remote wasteland areas. The Sahara is also home to the infamous Desert Wars, but the good Captain Chaos tells me that this is being covered elsewhere, so I shall focus on the desert itself.

Residents

The Sahara is home to many ethnic groups: Arabs, Berbers, Bedouins, Fulani, Nubians and Tuareg. Many of these people live nomadic lifestyles, traveling about the region in communities numbering some 40 to 100 individuals. In days past, nomads were primarily herders, relying on their livestock to provide their essential requirements for survival. Others, such as the Tuareg, were known for their desert caravans, trading ivory, gold, salt and slaves. Modernization changed all of that. Pressure was placed upon these groups to adopt sedentary lifestyles and farming, appeal to tourism and to assimilate into surrounding cultures. But the economic failures, warfare and plagues of this century defeated those efforts, and the nomads have once again returned to the desert.

The largest groupings of nomads are the Bedouin, the Tuareg and the so-called *Fellahin*. The Bedouin are relatives of the Arabian Bedouin tribes, and their culture remains similar. The African Bedouin can be found in the northern and central Sahara, mostly in Algeria. Many Bedouin have turned to the Desert Wars as a means of survival, finding work as cheap labor for media crews or military units, or taking their chances as salvagers.

- Some desperate Bedouin have dropped their strict Islamic views and turned towards the "red-light service industry"—brothels, chip dealing and other vices craved by off-duty soldiers and tourists. On the other hand, at least one Bedouin outfit went pro and participates as in the Desert Wars as a merc unit.
- Desert Rat

- Some of those Bedouin groups have strong sympathies to the New Islamic Jihad. If I were a Desert Wars corp, I'd watch closely whom I was letting near my food, water and weapon supplies.
- Stone That Speaks

The Tuareg, descended from the Berbers of the Atlas Mountains to the North, are spread across the southern and western Sahara. Lacking a subsistence economy, many tribes have turned towards smuggling, crossing the desert in long treks to bring contraband to the needy citizens of third-world countries. Others make a living as security for corporate outposts tucked away in the middle of nowhere. They get food and water, while the corp gets fifty extra sets of eyes, ears and hands with guns. Not a bad deal.

- The Tuareg are identifiable by the blue veils that many of them wear to ward off evil spirits. They're also noticeable by the strength of their women—unlike many other Islamic cultures, women suffer less restrictions and play a much more pivotal role in leadership and decision-making.
- Fact Finder Four

The *Fellahin* are a new group of nomads composed almost entirely of metahumans, changelings and Awakened individuals who were banished or driven out from their original tribes

and people. Most of these refugees come from reactionary Islamic cultures where anti-metahuman prejudice runs high. The first *Fellahin* bands were established over two decades ago, and they have succeeded in carving out their niche amongst the Saharan peoples. Some Bedouin will attack them on sight for being servants of Shaytan, and some oases have become contested areas. The *Fellahin* are wary of outsiders but willing to trade for weapons, ammunition, and magical knowledge.

- Most of the *Fellahin* have rejected Islam, but a few still consider themselves devout Muslims, despite the prejudice from which they've fled.

- Thief Thirty-Nine

- It's also worth mentioning the Nubian rebel groups that operate in northern Sudan and the part of the Sahara called the Nubian Desert. Despite the best efforts of Saeder-Krupp, the Frankfurt Bank Association and various Islamic ally-states to prop up Sudan's Islamic regime, the Nubians are very close to toppling it. That means action all around: smuggling arms and aid, merc work, you name it. Plus there's a whole lot of interest from various quarters into what this new Nubian movement is all about.

- Eli

- The involvement of a certain Welsh dragon may have something to do with that.

- MesoStim

Then there are the non-sentient desert denizens: cobras, addax antelope, sand foxes, horned viper and jackals—not to mention the paranormal varieties: flame jackals, scorpyrines, afancs and rockworms. The sand chameleon has developed a reputation as a vicious desert predator, catching its victims unaware at oases from its hiding spot just a meter away. Sandworms, an overgrown cousin of the rockworm that has adapted itself to tunneling quickly through the desert sands, can detect victims by seismic vibrations and then grab them from underneath, pulling them into the sands.

- Sandworm sightings are starting to occur in other deserts around the world. It's a stretch to say that the sandworms are migrating—but who the heck would transplant them?

- Navigator

- There's a free spirit—either a fire elemental or spirit of the flames—that makes its home in the Mourdi Depression. It calls itself Char, and enjoys entertaining visitors in the midst of the blazing day. The "oasis" (no water anywhere around, natch) where it lives is a sea of glass and fused sand, forming a maze of intricate crystalline structures. I guess it enjoys sculpture, or glassblowing, or whatever you call it. I know collectors that will kill for its designs—but the spirit's prices aren't exactly straightforward or cheap.

- Adl

Corps and Shadows

Despite the hostile environment—or perhaps because of it—corporate activity in the Sahara is through the roof. Aside from the Desert Wars madness, there is a mad rush to grab up every last metric ton of unexploited minerals, petroleum and other natural resources that remain. Some of the corps seem to think that the Sahara is just going to become harder and weirder the further we get past the Awakening, so they'd better act quick to scoop up what they can. Aside from the mines, refineries and manufacturing operations, the Sahara is also a nice place to stash R&D labs, delta clinics, training camps and other sketchy projects.

- Chummers, take care if you're looking to get cyber or bio implants done in some Saharan black clinic. The word is that sterile instruments cost extra.
- Nocker

Corporate feuds tend to take on a real edge in the deep desert, as there aren't a lot of people standing about who are going to speak unkindly of you on the six o'clock news. Even the Corporate Court tends to look the other way when their members decide to butt heads in the Sahara, as long as it doesn't have broader implications throughout the rest of the world.

- One side effect from the Desert Wars (and the general chaos of Africa) is that weaponry is easy to score. Last year's Desert Wars gear is always selling for a sweet discount!
- Cracker

Desert Magic

They say that the sands hold many secrets, and it's certainly true that there's quite a bit of history—not to mention a few civilizations—buried beneath the Sahara. Aside from drawing the interests of archaeologists, tomb robbers, treasure seekers and collectors of magical relics and curiosities, it also draws those who believe that the sands may have preserved some link to our world's past—perhaps talismans from a previous Age of Magic. The Dunkelzahn Institute, Atlantean Foundation, Apep Consortium and Solomonites all have investments here, from labs to historical experts to pararchaeologists and secret digs.

- I got a peek at some Atlantean Foundation documents that mentioned some old boat they had dug up—in the middle of the fraggin' desert. We aren't talking canoe, either. It was a major ship, built to traverse lengthy distances by rowing. Even weirder, the boat wasn't crafted for your average human—the seats, grips, etc. were all sized for someone or something larger.
- Elijah

The Sahara also seems to be gifted with the curse of wild magic. Mana ebbs and surges, ghostly apparitions and astral structures have all been documented. In fact, the number of reported astral constructs is increasing, though what this means no one seems to know. In the area that was once

Libya, ghosts and a heavy background count are to be expected, and other toxic threats aren't far behind.

- There have been reports of a metaplanar gate opening between the standing megaliths at Nabta (in the southeast Sahara). These standing stone ruins were aligned for astronomical purposes some seven thousand years ago, on the shore of a long-ago dried-out lake. The rift hasn't been verified yet, since fierce sandstorms, bandits and other problems have been keeping research teams away from the site.
- Ostrich

OTHER DESERTS

- I arranged to have a globe-hopping friend of a friend give us the final word on a few desert regions that weren't covered. Say hello to Dust Devil, and let me know if you have the chance to field-test any of the data he dumped here.
- Captain Chaos

Transmitted: 16 September 2062 at 04:40:29 (PST)

by Dust Devil

What can I say? I like the sun and warm, dry weather. And I'm hydrophobic. Any body of water bigger than a puddle or bathtub gives me the willies. So I've resigned myself to a life of desert exploration—why stick with just one, after all? I've been to just about every desert this planet has to offer (Luna, you big grey desert, you're next), climbed the rocks, seen the sights, traded contraband to the locals and moved on. I may as well share my experiences, so here's the quick info-blurbs on a few of the minor deserts I've been to.

THE ATACAMA DESERT

The Atacama stretches along a portion of the western edge of South America, between Chile and Peru. A strip of salt basins (*salars*), sand, geysers and lava flows, the Atacama is pressed up against the volcanic Andes. The Atacama has literally gone for centuries at a time without rain, so it has earned the distinction as the driest place on Earth hands down.

Naturally, no one wants to live here, and the area is a big mana ebb to boot. Corps such as Pemex (Aztechnology) and Mitsuhamma-Benguet Mining exploit the area's rich mineral deposits, and no one seems inclined to stop them. Given the area's inhospitality, their mining methods are extreme and destructive, turning an already barren area into true wasteland.

- The Atacama is the world's only natural source of sodium nitrate (used for fertilizer and gunpowder). No corp is going to pass that by.
- Gun Nut
- Ares has an operation to test-drive some Martian and Lunar explorer drones on the Atacama's moon-like terrain. I know several Johnsons that would sell their grandmothers to get some of those prototypes.
- Errant Knight



- Can anyone tell me why the oasis towns of San Pedro and Calama, smack in the middle of the Atacama, are owned lock-stock-and-geyser by something called GeoCraft, and what they're doing in the ancient fortresses in the nearby mountains?
- Elijah

THE KALAHARI DESERT

Well on its way towards graduating from desert to savanna, the Kalahari dominates the center of southern Africa. The sandy dunes that cover this area are no longer mobile, stabilized due to the growth of sparse grasses, thorny shrubs and acacia trees. The dry season is ten months long, but it seems to be shortening each year. The rainfall (180 millimeters, up 60 from 6 decades ago) collects in oval-shaped hard clay basins called *pans*—but don't drink it. The water has very high salt concentrations; wildlife gathers near pans to graze on the vegetation that grows there.

- What Dust Devil's not saying is that the Kalahari, which was more a semi-arid zone than a desert, is growing less like a desert each year. Ever since the Awakening, conditions have been slowly but surely improving. The entire ecosystem changed when all sorts of paranimals and Awakened plantlife arrived, but rather than collapsing it seems to have found a nice new balance. Everything has its niche.

• Vet

- Don't be so sure. The way I scan it, there are several different breeds of shapeshifter in the Kalahari and some aren't getting along, to put it mildly. Predator-prey relationships tend to have these sorts of problems, I hear.

• Skinwalker

Though VITAS wiped out over half of Africa's population, the Kalahari Bushmen, or !Kung San, were barely touched. The

area's dominant tribal group, they had only recently converted from their traditional nomadic lifestyle to an agrarian one. The conflicts that raged earlier this century drove them back towards their hunter-gatherer lifestyle. The !Kung San are fiercely protective of Kalahari wildlife, even more than the Zulu Nation to the south, hunting down poachers, ivory hunters, tesmas-hunters and other interlopers with prejudice.

- Frag that, the animals of the Kalahari don't need protection. I know a Johnson who's tried three or four times to extract some of the Kalahari's undocumented paraspecies out for research purposes. He's given up. Too many animal attacks, he says. It's like the critters have a taste for metahuman flesh or something.
- Gleeful
- The !Kung San aren't the primitive natives they're played out to be. I was running protection for a self-styled Big Game Hunter when we were ambushed by !Kung San on the way out. Ruthenium and boosted reflexes aren't exactly the trademark of low-tech tribesmen.
- Bushwhacked
- I know of at least two eco-activist training camps that are run out in the Kalahari, presumably with the consent and protection of the !Kung San. And they're sitting on major power sites, no less. It takes a big cred account to finance operations like that. Who have the !Kung San been dealing with?
- Technocrat

THE KARA-KUM & KYZYL-KUM DESERTS

The gravel plains and red sands of these twin deserts extend from the Caspian Sea northeast up to Omsk. The Trans-Caspian railway crosses both deserts, as does the 800-kilometer Kara-Kum Canal, which allows irrigation in some areas. Since the Awakening, this entire region has seen significant geothermal and seismic activity. During the passing of Halley's Comet, lava flows and tremors were a weekly occurrence in the northern regions (and still are).

The most unusual feature of this area is the Kyzyl Sink Holes. These sink holes cover an area of 500 square kilometers, the deepest of which extends down 400 meters. The recent seismic activity has revealed a vast number of naturally occurring limestone caves underneath the region.

- Hmm. The Silk Road ran through these deserts. Could be that some of those caves might hold some artifacts or plunder dating back to Genghis Khan's days.
- Elijah

Both deserts have become something of an Eurasian dumping ground. Dozens of corps on both continents have used these deserts as waste dumps (both legally and illegally)

for toxic products. It's not uncommon to find vast piles and swathes of (sometimes burnt) trash and waste residue. Toxic pools and contaminated areas mar the desert, and the fumes from burning cesspools are deadly. Many corps have used the cave systems to store potentially lethal waste products (nuclear and irradiated waste, chemical effluent, pesticides, expired warfare agents), allegedly in long-lasting, sealed tombs.

- In reality, many of these have already begun to leak, or have been cracked by seismic tremors. Others have been intentionally opened—and who knows what's been let out.
- Umbrella

The desert's residents are also castaways, displaced from conflicts in Iran, Afghanistan, Pakistan, India, Russia and other neighboring lands. These refugees have fled religious conflicts, ethnic cleansing, anti-metahuman purges and other atrocities, and now live in poverty and desperation in a land no one else wants. Occasionally, some of these groups gather the courage and strength to raid one of the corporate facilities here—typically belonging to Zeta-ImpChem, Monobe or Saeder-Krupp.

- AG Chemie has a secret biowarfare lab buried under the Kyzyl-Kum's red sands. We're talking truly horrific drek: smart bacteriophages, VITAS strains, Hepatitis-X, neuro-targeting retroviruses. Y'know, the kind of place where AG Chemie doesn't worry too much about you getting away, cuz you'll be dead within an hour without the right inoculations.
- Hark

- If I were in this area, I'd worry about the locusts. It looks like we're on the verge of another swarm season. These little hoppers will eat anything and everything for thousands of kilometers, and who knows how the little beasties have changed since the comet passed.
- BugSat

- Locusts? The refugees will have some good eatin' in the days to come then.
- Stu

THE LOUT DESERT

A smaller desert in central Iran, the Lout is considered the hottest place on Earth (it reached 60 degrees Celsius last year). It regularly goes without rainfall for years and then suddenly gets caught up in a couple of days or hours. As a result, flash floods are vicious, with torrents cutting deep grooves and sweeping away soil. The interior portion of the desert is completely devoid of vegetation and water. Five salty springs in the southern region are the only sources of water (an ancient aqueduct in the west long since went dry).



- Some areas of the Lout are so lifeless that you won't even find bacteria there—bacteria! I guess that explains why much of the desert is clouded with a low background count.

- Mr. Clean

No one lives in the Lout desert, except for a few scattered villages on the fringes. Even the megacorps have no presence, as the Ayatollah Abdallah refuses to allow it.

- Yeah, right. Like the Ayatollah isn't eating out of Saeder-Krupp's hand. No one out in the desert, you say? My, that's a nice cover story. Probably worth some cred to find out the truth.

- Zion's Shield

- No, he's right about the corps, but wrong that no one's out there. The Black Scorpions operate two subterranean training camps out in the deep Lout, far from prying eyes. The Ayatollah covertly supplies them with funding, passports, arms and other forms of aid.

- Ridge

- For those of you who haven't been scanning your daily World Intelligence Reports, the Black Scorpions are considered one of the most sophisticated terrorist groups in the world. Unlike Islamic terror networks of the past, these guys weren't built up, trained and supported by Western nations or corporations for whatever nefarious, destabilizing reasons. In fact, the Black Scorpions have kept from dirtying themselves with First World influences. At this point, they're a wild card—no one knows whose side they're on.

- Intifada Papa

THE TAKLIMAKAN DESERT

The Taklimakan Desert is smack in the middle of Xinjiang. (For you non-history buffs, Xinjiang was the first Chinese province to secede in the twenty-teens, along with Tibet, eventually leading to the collapse of China). Lying in the rain shadow of the Tien Shan Mountains to the north, the Kunlun Mountains to the south and the Pamir range to the west, this isolated region doesn't have much beyond sandstone and sand dunes. A single river, the Tamir, runs through it before disappearing into the marshes of the Lop Nor to the east. The world probably would have forgotten about it if orichalcum hadn't turned up right around the time Halley's sped by.

The Orichalcum Rush brought a lot of prospectors and corps to the areas, and for the few months it lasted the finds

were big. The local economy underwent a small boom, much to the pleasure of the local Islamic Uighur Mongols. Even luckier, when the orichalcum veins all dried up, several motherlodes of precious gems (mostly rubies and star sapphires rivaling those found in the Kashmir Mountains) were discovered and kept the business booming.

- Some of these gems seem to have some unique properties. My parageologist friend ranted on the subject at length, though for the life of me I can't translate a word into English. All I got out of it was that talismongers are howling for the stuff like it's a clipping of Dunkelzahn's talons. Smugglers are finding easy work, as are local runners hired to guard digs or to protect sneak excavations.

- Zag

- Eight months ago some chummers and I decided to try our hand at this mining stuff. Well, I've got to tell you, sitting on my 20-meter yacht and sipping rum in some undisclosed paradise, that it was the best decision we ever made. Sure we busted our butts for five months, but when we were done it was worth it. Got myself a seven-figure bank account, stock portfolio and even a couple of dosses on private white sandy beaches.

- Aloha

Despite these changes, the Taklimakan mostly remains unchanged—an isolated area, sparsely populated with little to make it noticeable.

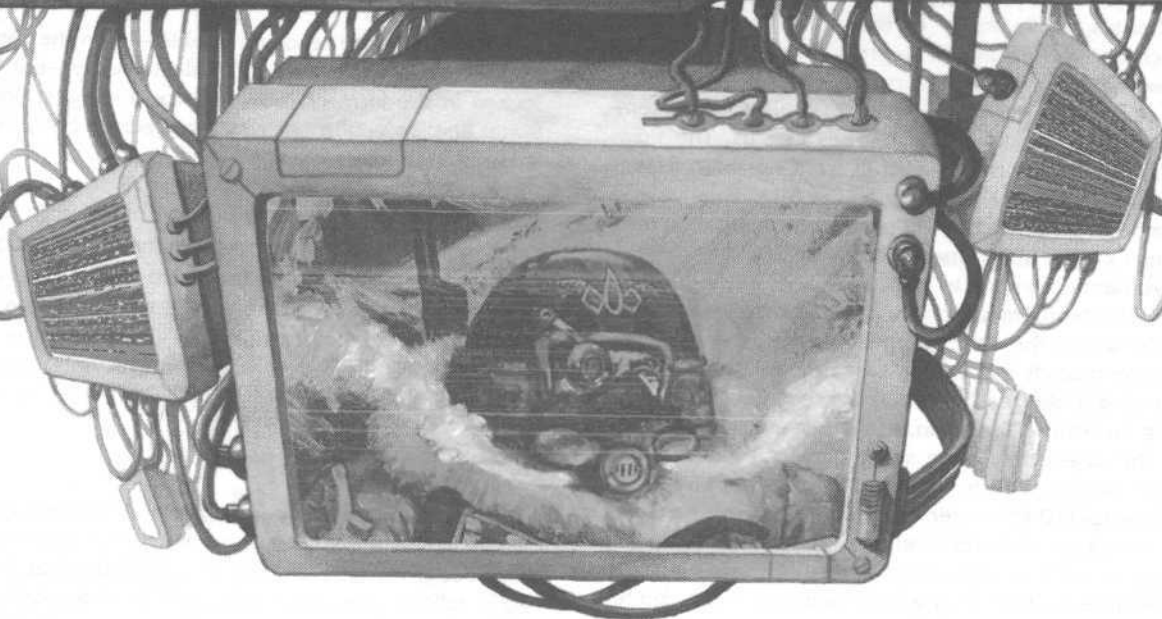
- Yeah? Then why does Monobe have a full arcology plopped out there among the dunes? We're talking a completely self-sustained sealed system. It's small as far as arcologies go, but what's worth that kind of expense?

- Wild Boar

- Got me. But Monobe isn't the only corp with odd interests here. Wuxing just teamed up with Yamatetsu to do a complete satellite survey of the Taklimakan. Ostensibly, they're scouting out the remaining oil reserves and looking for orichalcum, but an inside contact tells me they're scanning for lost cities and other signs of civilization buried under the sands. They've been pulling weird Caucasian mummies, ancient Buddhist statues and all kinds of other weird dreck out of the sands for centuries, but Wuxing must be after something big to commission a survey like this.

- Elijah

THE ENDS OF THE EARTH



Most of us never have to think about things like arctic survival. Sure, the north and south poles look pretty with all the glinting ice, polar bears, penguins and icebergs—but who in their right mind goes there? *The corps do, chummer, that's who.* And where the corps go, shadowrunners follow.

So before you pack your gear and head off to a frozen grave, you better start thinking of how to protect your cyberware from the cold or what to do about silap innua when you run into one on a deserted ice shelf somewhere. For our ever-inquiring readership, I've dredged up commentary from several special guests to give you the 411 today. First up is Doc Freeze, a noted underground anthropologist and smuggler with some rules to stay alive by. After that, Mad Mike has the intel on the T-PA. Last but not least, South Paw gives us the skinny on Antarctica and all its worldly charms. Take a scan of the doc and chime in if you have personal experience.

• Captain Chaos

Transmitted: 16 September 2062 at 04:57:23 (PST)

by Doc Freeze

I've been running the shadows for years, and let me tell you—there is a drekload of difference between toughing it out on the street in some cozy temperate-zone sprawl and conducting a run in the Arctic. I know, you've seen it all, and one place is pretty much the same as the next, barring what language the soykaf label comes in. Wrong. I've seen samurai who could stab nuns in the back and sell kids into slavery without flinching suddenly break down and cry on particularly tough ops in northern Finland. You may think you're tough, but the Arctic environment is tougher.

Luckily, magic and technology can solve a lot of problems. But what's the point of a basic overview without explaining some basics?

THE WEATHER OUTSIDE IS FRIGHTFUL

First of all, these places are cold. Damn cold. In the Arctic, winter is long and cold and summer is short and cool. Regardless of which end of the world you're on, there are some general bits of information that come in handy when planning your vacation getaway.



DROPPING TEMPERATURES

Arctic climate varies wildly from region to region. Communities in the south get temperatures as high as 20 degrees Celsius, while many of the northern areas never climb much above freezing (0 degrees Celsius). The Arctic winds, however, are the real killers. Even the most northerly areas are comparatively warm, but wind chill can push temperatures down to under -100 degrees Celsius. The now-common arctic storms that sweep in from northern Siberia across the arctic circle are just icing on the cake. They've gotten bad enough that most of the permanent habitation sites north of Inuvik were abandoned by the late 2050s.

The Antarctic climate is cold too, and getting colder every year. The temperature on the coasts now averages -23 degrees Celsius in the summer; near Vostok, the temperatures set new records every year. Last time I was there they were reporting it had reached -100 degrees Celsius—before accounting for wind chill. Again, the winds are the big problem. On the coast they have what they call katabatic (or downslope) winds, which whip out from the interior at speeds of up to 350 kilometers per hour. It doesn't help that most of the continent is relatively flat and buried under ice that ranges from 2 to 4 kilometers deep—so there's no convenient windbreak before that glacial wind shear hits you full in the face.

- Actually, that continued trend of dropping temperatures has people a bit concerned. There seems to be no indication of why this is happening, no other connected weather phenomena. Some liken it to a rubber band, afraid that if the ecosphere is stretched too far, it could snap back with disastrous results.

- Woppler the Weatherman

- What sorts of results?

- Rose Red

- The ice caps melting, sea levels rising, coastal cities being flooded out of existence ... your typical global-warming party.

- The Smiling Bandit

"Striking Again! Ha Ha Ha!"

WET VERSUS DRY

As with everywhere else in the world, you can divide a good portion of weather environments into two types: wet and dry. In this case, wet is Arctic (mostly) and dry is Antarctica. With a wetter climate, you'll get a bit more temperature variation as well as more precipitation, thus more chance of getting wet and getting hypothermia, frostbite, trench foot and so forth.

That temperature variation is most obvious in places such as the T-PA and Scandinavia, where warming during the day can turn the ground to slush. Falling snow becomes freezing sleet, and ice may weaken to the point of being too fragile to support the weight of snowmobiles or ATVs.

- The freak warm snaps that have started since Halley's comet mean you can find yourself in a rainstorm one minute

and the next second a cold snap will make everything an instant ice skating rink.

- Tracy

Water is more readily available—even the semiarid tundra of Siberia has plenty of available water—but it's usually locked in the form of snow and ice. I suggest you melt the water first, so you're not wasting precious body heat turning it back into liquid.

- Most water in the arctic regions is actually safe to drink without filtering. It's too cold for most common bacteria and there is less risk of infection by nasty parasites. In recent years, it's also acquired a reputation as having curative powers. It should come as no surprise that water from the still-pristine arctic regions (especially from the T-PA and Antarctica) will fetch top nuyen—especially in Imperial Japan and the Middle East.

- Jope

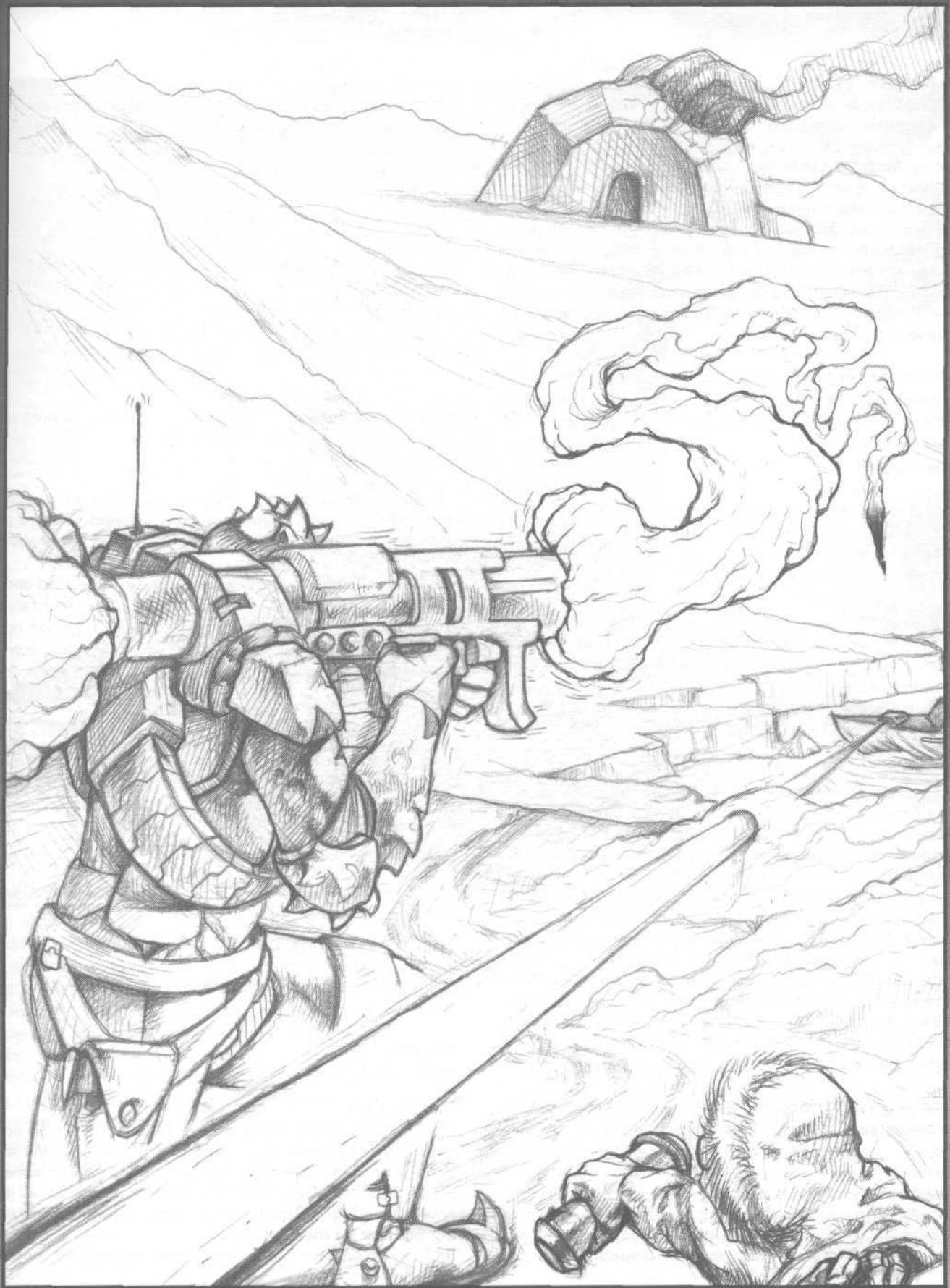
Then there's the dry end of cold. A dry cold typically feels less biting, as there's less moisture to suck the warmth out of your body. It isn't really any less dangerous at the extremes we're talking about here, but that's how you can occasionally see pictures of people standing outside on an Antarctic summer's day wearing just layered clothing. One of the driest deserts in the world is the continent of Antarctica, with less than 50 mm of precipitation per year. (As a note, this doesn't mean you don't get snowstorms and blizzards. It just means that instead of coming from precipitation, they come from the wind picking up the snow on the ground and blowing it at you.)

The worst thing about dry cold is that it's cold *all* the time—usually well below freezing. Dehydration is a major concern, however, along with cold diuresis. The air sucks water out of you just as quickly in a cold desert as in a hot one, but you may not realize it because the heavy cold-weather gear you're wearing absorbs all the liquid you give off. But you don't have to worry as much about getting wet, and you can still melt snow and ice to drink if you have to. The water quality in Antarctica is still among the purest in the world, though it's a far cry from what it used to be back around the turn of the century.

- 70% of the world's fresh water is actually locked up in Antarctica—there were some serious plans as recently as 2050 to start sailing entire icebergs to areas where fresh, uncontaminated water is a rarity. The corps don't want little fish chipping away at their playground, though, so those ventures never succeed.

- Southern Floozie

Did I mention the wind? A strong wind in either climate can take a mildly cold temperature and drop it down enough digits under zero to kill you in minutes if you're not prepared. Winds also carry loose snow, which obscures vision and technological sensors.



POLAR PARTY TRICKS

In addition to the temperatures, both poles share some other common phenomena. First among these is the "white nights." Basically, above a certain point in latitude called the Arctic or Antarctic Circle (depending on which pole you're near), there's a period in the summer when the sun never sets, and a period in the winter in which the sun never rises. These periods range from at least one twenty-four hour period on the border of the Circle to three months each at the poles. To say that this plays havoc with your body clock is a gross understatement. You can and do get used to it eventually—at least most people do—but you can expect all kinds of fatigue until then.

- He's not kidding. You'll be trying to sleep, only it never really gets dark. So you never really get to sleep well and it's cold and the wind is howling like a demon outside your shelter ... it takes a toll on you.
- Snowman

- Spirit summoning under these conditions kicks hoop if you time it right. What else can you say when you've got that spirit until sunrise, and sunrise is three months away?
- Winter Warlock

- Or if you follow Sun, and happen to visit during the white nights? Shamans with nocturnal/diurnal totems can demand top dollar during those seasons. Of course, you can generally expect to need every ounce of the boost you get, because they aren't paying you to look at the scenery. Still, it's a nice way to make some cred.
- Solar

Next are the auroras polaris, known individually as the Aurora Borealis and Aurora Australis. They come in a variety of shapes, from arches to bands to curtains to coronas, glows and clouds and streamers and filaments. According to pre-Awakening scientific theory, they're caused by the solar wind bringing an influx of high-energy solar particles that emanate from sunspots. Studies since then, however, have shown a surprising fluctuation in mana and astral energies near the auroras, both Borealis and Australis. Some have theorized that the auroras are actually astral rifts, though there is little evidence at this time to support the theory due to their inaccessibility. Apparently they only function as a rift when in a specific shape, such as a curtain. The other displays are thought to be too diffuse to allow the rift to manifest.

- "Little evidence to support this theory." Right. There's plenty of evidence, just not much of it gets out to the public.
- Seal

- These rifts are unique. I have traveled through them and back, and it seemed to me as though I had passed beyond the atmosphere of Earth into a realm of stars. The beauty and

terror of the place, I cannot adequately describe. I felt as though I would be lost in a sea of emptiness, and yet something sustained me, I know not what. I have never heard of such a metaplane described before or since, but I fear that cowardice prevents me from investigating further.

- Tallesin
- You want the real scoop? I've been through the Aurora Borealis myself, and I can tell you exactly where it goes. The Earth isn't the only planet with auroras in the solar system—they also show up on Jupiter! And I've been there, chummer. Almost fell into the Big Red Spot, but I lived to tell about it and came back through. They're linked. And it's all true, I swear it.
- Doctor Strange

- Wow. That comment alone has made my day just that much more entertaining. Thanks for the laugh.
- D Bunker

There are other nifty illusions and tricks of the polar areas, like solar pillars, halos, sun dogs, mirages, ice blink and polar fog, but they're not usually something to worry about.

- Superior mirages are definitely something to be worried about, regardless of what Doc Freeze says. The Croker Mountains at Lancaster Sound are an example of this. Lots of people have seen them—heck, early explorers abandoned their search for the Northwest Passage because of this mountain range. They don't exist, though. It's just a mirage, albeit an impressive one.
- Snowman

- Those mountains are an astral construct. And even more impressively, one that has been observed since the 1800s. Who knows what they might have found had they only tried to reach them?
- Tallesin

- They did, Tal. Never could reach them. They just kept moving further away.
- Snowman

- Yet more proof of their existence as a construct.
- Tallesin

- Sheesh.
- Snowman

FROZEN STIFF

Personally, I would rather be in Antarctica than the north pole—mainly because it's a lot easier to stay dry. Moisture sucks off body heat at 25 times the normal rate. For humans, it's bad enough. Elves and trolls are even worse off as they have such a high relative surface area and not much insulating body fat for their bulk.



- Part of the reason you don't see as many metahumans in the cold regions is that they're not particularly well adapted for it. Elves tend to be tall, with long limbs and very low body fat, leading to higher incidents of hypothermia, frostbite and simple exposure. Trolls and orks require additional nutrients to support their bulk; without modern food distribution to arctic regions, they would likely starve. Even dwarfs can have a problem, in that they tend to be so dense that travel over thin ice can be a danger in places a human could pass safely (more weight in a more concentrated package, in other words).

- Jinjiro

- That's not entirely accurate. Elves and trolls do have a problem, like Freeze said. But orks and dwarfs are very well-adapted to arctic conditions. Both are stocky and barrel shaped

(less surface area and denser cores), tend to have larger and longer nasal cavities (more opportunity to warm the air before it reaches their lungs) and have superior constitutions and stamina.

- People Watcher

YOU'RE ONLY AS GOOD AS YOUR GEAR

So, perhaps you're wondering how you can get around all this for that nice, lucrative gig in winter's backyard? Luckily, most modern survival equipment is pretty well designed. Let's start with your arctic trousseau.

Modern coldsuits guard against things like hypothermia pretty well. These survival suits are made of heated fabrics and have a wicking layer that keeps moisture away from your skin while the outer layers insulate and keep the elements out. Even coldsuits, however, don't protect you entirely from

getting wet due to sweat—all but the most sophisticated active cooling systems are unable to cope with heat generated through intense physical activity, such as a typical shadow op involving lots of firepower. If you're really unlucky, your suit will get ripped, in which case you might as well have jumped naked into a lake for all the good it will do you.

Assuming you stay dry, you're going to have to expect sunburns in places you never thought possible—like in your nostrils. Snow and ice reflect a lot of UV, and even on cloudy days you can fry like bacon in a skillet. If the cloud cover is minimal, the glare can blind you, and both thermographs and IR will be either dazzled or become useless. Use the old Mk. I Eyeball when you get the chance, but protect it by wearing proper eye protection.

- Ever had sunburn on the insides of your eyelids? Well, welcome to the wonderful world of arctic survival.
- MoJo

If you plan on moving in a snowstorm, I suggest you use a good millimetric imaging radar system. IR, thermal, UV and motion tracking will be almost useless. On the plus side, your opponents are just as limited. Corp outposts located out in the boonies tend to rely on their isolation rather than fancy sensor equipment. On average, your well-prepared runner will probably be far better off than any guards (critter or metahuman).

- A well-prepared facility will be keeping an ear out for infra-sonic and radar sweeps. The sensors are pretty expensive and tend to break down in arctic conditions but it's something to keep in mind.
- Arclight

- Probably the most efficient way to see where you are going is to spy out the terrain on the astral. You'll also be able to spot the bane of any "cover of storm" shadowruns—spirits.
- Morgan

- You meatheads are funny—any group worth its salt goes in with drones. The meat guards and critters are already blind, and the wizkids' little slaves can't see you on the astral. Invest in a drekhot radio link though, or you'll be pretty embarrassed when your multi-million-nuyen toy does a nosedive after the storm kills your link.
- Metal Turnip

- Gee. You all make it sound so easy.
- Urkol

- Magic is the killer. If you're lacking a mage, you're not going to make it past the gate. The corps builds facilities in the arctic for a reason, and it only takes one or two elementals and watcher spirits to keep an eye out when the technological

sensors aren't working. These facilities are far enough away from habitation centers that if they see metahumans, they know it's not normal.

- Lorelai

When you're in a hostile environment with work to do, it isn't enough just to simply survive: survival alone doesn't pay the bills. So in order to get the job done and come home with the hefty payment that brought you out here, you have to stay effective.

One part of staying effective is making sure your equipment is properly functioning. You can find standard gear without much problem; tents, freeze-dried food, survival suits, that sort of thing. But shadowrunners in particular have special things to worry about. For example, their wiz new body armor spontaneously delaminating and becoming brittle in the cold, or their weapon lubricant turning into a gummy gel. Basically, what this boils down to is that your gear is a lot more tolerant of physical abuse than it is extreme environmental conditions.

If you want to avoid becoming another statistic in a corp security report, religiously check and maintain your gear. If you don't, your precious Predator—which has never jammed since you were a toddler in the Barrens—will betray you at the worst possible moment. Working well in a Seattle winter is not proof it will work when wind chill drags the air temperature down to -100 degrees. If your gear isn't able to handle it, the last place you want to find that out is in the middle of a tense situation in Antarctica.

Let's cover the pitfalls of some common gear.

Weapons

First off, you better get some decent low-temperature lubricants. Then go stand in a freezer fully outfitted and see if you can draw and use all your toys. You'll soon find that getting your fingers into the trigger well when wearing cold weather gloves can be like a troll trying to use a Streetline—it's not going to happen. It's a trivial modification, but something you'll feel really dumb about when you forget. Also, snow gets *everywhere*. Forget to clean your gun once, and it'll rust from the inside out in no time.

Leave your weapon accessories at home unless they are integral to the weapon. Sure, that smartlink adapter is waterproof. In a snowstorm, however, it won't track properly; it wasn't built to handle it. Laser designators are completely useless (I've been flash-blinded by snow and ice reflecting the beam of my custom high-power laser sight). Laser weapons are not a good idea for the same reasons, along with the fact that older ones have a habit of exploding when their lens is dirty. You have been warned.

- At the same time, laser sights can be rigged under those conditions to provide a pretty decent flare for signaling help if you absolutely need it. Of course, if you absolutely need it, you're probably in way more trouble than a flare is going to solve.
- Argent



- On the other hand, lasers are good for eliminating that snowdrift that your target is hiding behind, or weakening that ice sheet your pursuit will be crossing.
- Blaster

Ammo is another thing. Modern ammunition is pretty resistant to moisture and temperature differences, but a few of the metastable explosives used in the newest SOTA ammo may not like cold weather. Pretty embarrassing when your drekhot new anti-vehicle ammunition fails to explode.

Armor

If you don't think you'll be facing much heavy firepower (yeah, right), then leave it at home. If you don't feel comfortable without 20 kg of armor plating between you and the nasty outside world, travel light—a vest is probably all you will need. Extra mass is the last thing you need when trying to plow through deep snow or walk over thin ice.

On the plus side, armor tends to make you a “black-body” on IR/thermo scans when you're wearing your other arctic gear. You're not invisible to IR, but it's almost as good. Which reminds me, leave those fancy IR defeating clothes and armors at home—most work by disbursing your heat in ways that don't look human, and they don't work well when covered up by big coats. It doesn't do much good to “randomly” release your heat when any heat source stands out like a sore thumb as compared to the background.

- Don't bother bringing your IR gear, either. It's great stuff, but not as useful in the arctic as you might imagine. You can spot someone not wearing cold weather gear from way off, but you might not spot that polar bear or ice snake until the last second.
- Korlan
- Many corps use envirosealed (and heated!) armor for their security goons. Since they don't usually go cross-country, they don't have to worry about sinking into the snow or falling into snow-covered holes.
- Wolf

Cyber

A necessary evil for many people, but cyberlimbs are a major detriment in cold weather. Cyberlimbs without those nifty falseflesh coverings are colder than your body—which means they work like a heat sink and suck off valuable body warmth. They are also extraordinarily delicate and require constant maintenance in cold weather. You can expect a host of minor problems with major external cyberware items, such as myomers failing to contract.

As for those falseflesh limbs, they suck a lot of power in the cold. That generated heat has to go somewhere, chummer—which either means you'll get warmer than you expected under all that insulated clothing, or you'll be radiating more heat for your pals with the IR detectors.

- It's not quite that bad these days. As cyberlimbs get more market exposure, there are all sorts of nifty gadgets you can snap up. There are “sock coverings” for bare limbs that keep them heated and dry, and you can get firmware updates for the flesh coverings that regulate the limb temperature for maximum efficiency. As most of this stuff is made for hunters, it's designed to be relatively stealthy—the free market at work.
- Neon Chrome

Vehicles

Unless you like skiing or snowshoeing, you're probably going to want to use some form of vehicle to get around. In Antarctica and the T-PA, there is a lot of ground to cover between habitation and targets. In Scandinavia they aren't as necessary, but nothing says tourist there like a guy without a snowmobile.

Most vehicles work okay in cold weather with some care. If you're just tooling around in a civilian vehicle (good luck getting one in Antarctica), I suggest sticking to the main (usually plowed) roads. If you're going cross-country and want to remain stealthy, modern snowmobiles are electric and remarkably quiet. The old internal combustion versions are still around in areas where petrol is relatively cheap, but you can hear them for miles in the cold air.

- It can be damn hard to hide yourself in the arctic—the air tends to be crystal clear, you're radiating lots of heat, noise travels a long way and activity is hard to hide. That being the case, it pays to try and keep a low profile as much as possible. Just doing your usual MO is roughly the equivalent of stripping, painting yourself purple and trying to walk straight through the front door without magical assistance. And of course, wear the right kind of camo. Wearing jungle patterns on an ice shelf is not a good idea.
- Lacy

A flying vehicle is the fastest way to travel. Unfortunately, thunderbirds are a bad idea—their massive IR signature is even more of a problem than usual, and landing can be an exercise in Russian Roulette when the vectored thrust melts the snow and ice. I suggest prop planes for general use; their signature is relatively low and they don't drop like cinder blocks if their engines fail in a storm. Helicopters are even better when you're trying to find a landing place in a hurry.

Drones ... well, where to begin. If you're using ground drones, stick with the tracked varieties. They have less surface pressure and won't get stuck in the snow as much. Aerial drones are much better, but invest in good signature suppression.

Regardless of the type you choose, get the best control gear you can afford. I can't stress enough how efficiently a winter storm will disrupt your communications and targeting. If you're doing target designation, use microwaves. Remember to pack a few signal repeaters if you expect to control the drones over long distances.

TRANS-POLAR ALEUT TIMELINE

2010: Nepean Act dismantles the Inuit territory of Nunavut.

2013: The shaman Ininook forms the Sovereign Northern Tribal Alliance (SNTA) and applies for membership in the SAIM. Their membership is largely symbolic.

2014: The Aleut shaman T'singlik begins consolidating the power of the various Aleutian bands.

2018: Treaty of Denver. T'singlik monopolizes the SNTA representation—the new nation is christened the Trans-Polar Aleut, much to Ininook and other tribal leaders' dismay.

2020: The capital of the nation is set at Inuvik after the residents of Iqaluit decline.

2029: Iceland, whose weakened economy was already strained by the collapse of its fishing industry and the computer Crash, turns to the T-PA for relief from its heavy debt. Desiring access to its remaining fishing industry, a stable TPA adopts Iceland as a "protectorate."

2050: Trans-Polar Aleut withdraws from active participation in the NAN.

Communications

I think I covered most of this elsewhere. If you're a decker, pack a satcom link. You won't find much in the way of hardlines in cold weather, but even small towns will usually have at least one or two people with a satcom unit for communication with the outside world. Don't worry about a lack of GPS or constellation coverage. This close to the top (or bottom) of the world, you can't escape it. Even the poles have a satellite or four overhead all the time.

- Deckers can also be your best friend when you need to watch the latest episode of *Jack Masters: Mutant Hunter* when you're sitting in some hellhole in northern Siberia, waiting for the Russians to pass over your little hiding spot as you sit on two tons of C-12. Not that I speak from experience or anything.

- Polar Bear

Magic

Oh lordy, make friends with a mage before heading out into cold weather. Having a mage along with the ability to create food or nutrition means you can pack a lot fewer supplies and waste less time preparing food. She can keep your body warm in the worst cold snap, and use spirits to find and build shelter in minutes flat.

A well-trained wizworm (especially one who has had some arctic warfare experience in the military) can also be a one-man killing machine, fading into the snow before striking again. Even relatively simple masking spells can hide your normal IR signatures, without requiring the more draining full-on invisibility jobs. If possible, choose your magical assistance with an eye to some hefty conjuring talent. Spirits are some of the most useful things you can have with you on a trip to the arctic.

- Some people will tell you that shamans are the most useful mage-type out in the wilderness. Don't you believe it. Out in the arctic, where it's nothing but snow and ice and water forever, elementals are powerful beings. Stick with a good hermetic mage and a nice water elemental and you can't go wrong.

- Winter Warlock

TRANS-POLAR ALEUT: LAND OF THE MID-NIGHT SUN

- It's hard to find information on the arctic regions these days, but Mad Mike has lived and worked in the region ever since it was still Canadian territory. We called him in to give an overview of the area.

- Captain Chaos

Transmitted: 16 September 2062 at 05:00:55 (PST)

by Mad Mike

Here in the T-PA, the little Manson Family clusterfrag of competing tribal groups, corporations and regional chiefs has been flying apart like a misaligned flywheel. Iceland is now center stage in a vicious fight over self-determination (and fishing rights) that involves everyone from the Scandinavian Union to the Japanese Empire.

It's all fun and games until the bombs start exploding, and luckily things have not gotten that far—primarily due to low population density and the traditional means of "settling debts." But whether you're up against a tupilak or a 7 millimeter hypervelocity round, either can make your life terminally difficult just as fast.

THE LAND

The great nation of the Trans-Polar Aleut covers the northernmost regions of what were once Alaska, the

TRANS-POLAR ALEUT AT A GLANCE

Population: 1,580,000

Human: 89%

Elf: 2%

Dwarf: 4%

Ork: 2%

Troll: 1%

Other: 2%

Tribal Affiliation: 97% of the total population

Inuit: 55%

Aleut: 35%

Dene: 4%

Other Tribes: 6%

Per Capita Income: 3,500¥

Below Poverty Level: 87%

Corporate Affiliation: 5%

Education:

Less Than Twelve Years: 42%

High School Equivalency: 48%

College Degrees: 7%

Advanced Degrees: 3%

Major Languages Spoken:

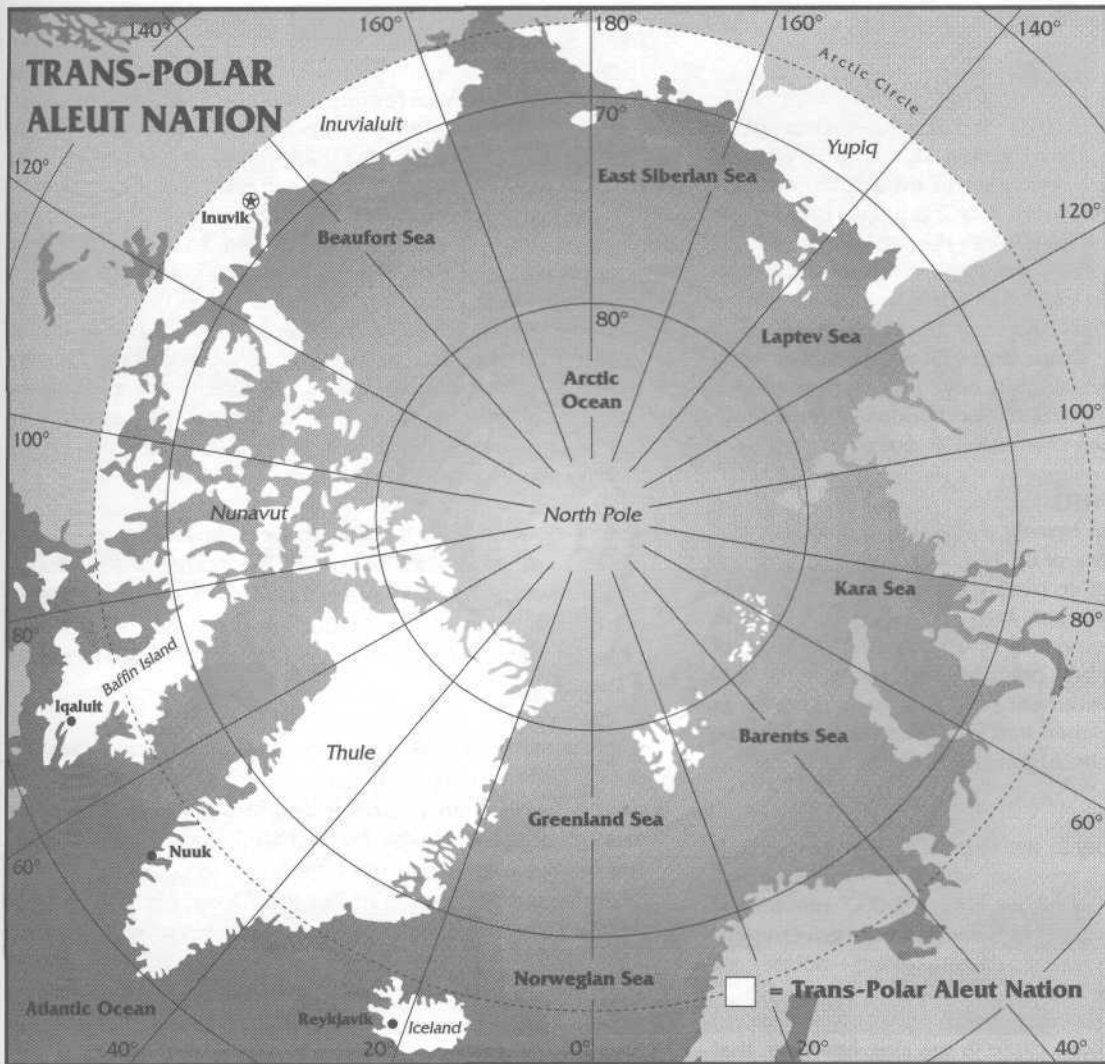
Inuit: 68%

Aleut: 45%

English: 15%

Russian: 12%

Currency: Nuyen



- What the heck is an "ice snake?"
- Maelwys

• It's the local term for a rare (in the south at least) Awakened critter of unknown origin. The northern Tsimshian call them "land otters" and steer clear of any that they find. They are voracious beasts roughly resembling large white weasels without legs; they're nothing but fur and teeth.

- Kzeentch

NORTHERN SIBERIA (YUPIQ) AND WESTERN ALEUT (INU-VALUIT)

On paper, the T-PA controls a chunk of the northeastern Siberian tundra. The local tribal groups (Chukchi, Evens, Yukagirs, etc.), however, don't send representatives to the Council, don't contribute to

Canadian Yukon and the Northwest Territories. (No, the entire country is not on a big sheet of ice. I think the whole "Polar" part gives people crazy thoughts.) On paper, it extends into Greenland and the northeastern section of Siberia. As for Iceland, it's in the middle of an international dispute between the tribal bands on Greenland and the Scandinavian Federation. I would hardly call that "claimed" territory these days.

Don't get me wrong, chummer, the T-PA lies in some frigid territory. Even the southern areas are further north than you've probably ever been. The nation even encompasses several million hectares of semi-permanent ice cap, which means the country's actual landmass varies by up to 10 percent, depending on the season.

- That's sort of a joke. Only traditional Inuit live far enough north that it matters. There's nothing, and I mean nothing, up there except for some spirit bears and ice snakes.
- Skeptic

the economy and sure as hell don't have any feeling of solidarity or union with the North American tribes. The only reason they stick around is that they like Yakut and Russia even less than the T-PA.

A hop across the Bering Strait and you're in the home of the Trans-Polar Aleut, the only place where the central government holds any sort of power. The seat of the Polar Council is located at the city of Inuvik, which is the largest city in the entire region. In recent years it's become a huge tourist trap, with citizens from the UCAS, Salish-Shidhe and CAS coming to see truly untamed wilderness (not carefully managed parks) and take advantage of the loose hunting laws.

As perhaps the most "civilized" area in the Inuvialuit outback buzzing around on their electric snowmobiles or camping in cabins around some of the many lakes and rivers. Most of the really dangerous critters have either been hunted out or moved east. Spirit bears (Awakened polar bears) are still pretty com-

mon, but freak snowstorms and bitter cold means most hunters don't bother.

Inuvik

Capital of the great nation of the Trans-Polar Aleut, pride of the nation, seat of the Polar Council. That and 5¥ will buy you a cup of cheap soykaf, too. Back in the 2050s, it was a backwater little town—little more than a port and trading site for the whaling and fishing ships. With the upsurge in tourism and an influx of southerners, however, it has expanded to almost 27,000 permanent inhabitants. It gets probably three times that number in visitors and tourists each season.

Talismongers, coffee shops and equipment stores have been popping up everywhere. Big nuyen flows through the city, much of it brought by the rich and famous who are looking to get as far away from civilization as possible.

EASTERN ALEUT (NUNAVUT)

This area is the most heavily populated and developed region in the nation. It's one of the few areas of North America that was governed by native peoples even before the Ghost Dance War. The Inuit inhabitants take a great deal of pride in their accomplishments, especially the successful melding of both modern technology and practices with traditional ways. The dominant Inuit government in the area is known as Nunavut, and it once stretched into lands now claimed by the Athabaskan Council and the Algonkian-Manitou.

Iqaluit

Iqaluit is the major city in the region. In most respects, it resembles any other small town anywhere in North America. The permanent population of the city is 5,000 individuals. Most of these are involved in either the regional government or the only high-tech industries in the region—notably oil processing and communications.

The city maintains a sizable Peace Force garrison of about 200 officers. There is so little crime in the city, however, that most of them are on standby at any given time. The city has a high transient population, mostly based on trade with the outlying communities.

GREENLAND (THULE) AND ICELAND (THULE PROTECTORATE)

The former Danish Territory of Greenland, now known as Thule, is a vast, empty island, most of which lies above the Arctic Circle. 85 percent of it is covered in ice. Populated mostly by Inuit fisherman and a few remaining Danes, Greenland is a tourist draw for wannabe arctic explorers. It's also home to some of the T-PA's largest mining operations, producing zinc, iron, coal and molybdenum.

Stuck between cultures, Iceland is a strange melting pot of Nordic and Inuit customs. Taken over by the T-PA as a protectorate following the Crash and the collapse of its fishing industry, the island nation has hovered between independence and life as a T-PA state for decades. Despite a struggling economy throughout the 2030s, Iceland is now the richest

area in the T-PA. Inuit from Greenland who could afford to move have resettled in the northern areas, escaping the ever-harsher weather. At the same time, hundreds of expatriate native Icelanders have returned, either working on the numerous underwater platforms in the region or making a living as independent fishermen now that the industry has recovered.

Icelandic independence is currently a political football. The Thule tribes from Greenland want an independent Iceland so they can get out from under the T-PA's harsh fishing restrictions. The native Icelanders simply don't see any advantage to the current arrangement. The Polar Council, on the other hand, wants to hold on to Iceland as a symbol of victory over the "European colonial powers"—and Iceland's territorial waters are extremely valuable fishing areas. In the end, it comes down to money—Bathotech, Pisces and Farm the Seas are heavily investing in Iceland and the Council doesn't want to see those resources vanish.

- Some newcomers to the island have been running around and blowing up minor facilities, all in the name of the dragon, Feuerschwinge. It would seem that they favor independence from their choice of targets, but the authorities haven't been able to catch them yet. Still, luck only favors the naive for so long.
- Lorpan

- There are more political factions in Iceland than scales on a dragon. First you have the Inuit who want to kick all the Euros off the island. Then you have the moderate Inuit who have formed a coalition with the native Icelanders for independence. Then you have the Icelanders who want to join the Scandinavian Union and kick all the Indians off. Then you have the Inuit and Icelanders who want to just kick all the metahumans into the sea and stay in the T-PA. Every side has been hiring runners to discredit the opposition and find out what the others are up to.

- Inos

GOVERNMENT

The Trans-Polar Aleut has been described as a "loose collection of tribal governments." This particular collection is so loose that it's hard to tell there even is a government at times. Oh sure, the so-called "Polar Council" likes to claim it's the only legitimate government. In reality, though, it's an institution that the inhabitants either ignore or make jokes about. The real power in the region is held by the village elders and the numerous coalitions between villages and the nomadic bands.

Peace Force

The Peace Force is both the national military and their police force. Though extremely small (500 members), they are dedicated and resourceful. They mainly concentrate on patrolling the borders, keeping an eye on smuggling and poaching and serving as a rescue service. In recent years, they've also been tasked with locating and killing various



forms of dangerous wilderness spirits and critters like wendigos or rogue tupilak. A higher-than-average percentage of the Peace Force are shamans in addition to being hoop-kicking outdoorsmen.

- The Peace Force operates much like the marshals of the old American West. They are the law in the outback, and serve as judge, jury and executioner if necessary. Most operate alone or in pairs, traveling around the nation on regular "circuits." Despite a fierce reputation, most are extremely helpful and liberal in their attitudes.

- Zip

- The Peace Force serves as advisors and training cadre to the UCAS and Sioux Nation arctic warfare schools. They are deadly when in their home environment, so make sure you know what you are doing if you plan on tangling with them.

- Maelwys

ECONOMICS

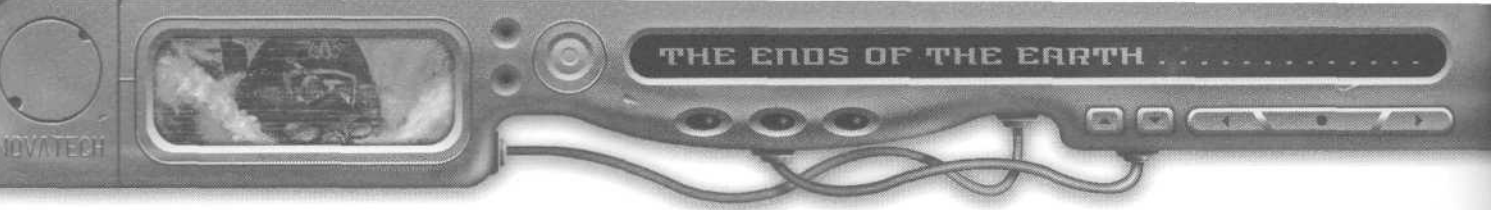
At first glance there doesn't really seem to be a national economy. Almost all economic development is handled at the tribal level. To make a long story short, this is not the place to haul your credstick. Though even the nomadic bands are connected with a communications network that would put the UCAS Army to shame, you're unlikely to find anyone with a credstick verification system. They accept credit in the form of certified credsticks—they are small, easy to handle and all the major trading centers can accept them.

- Which also means it's a great place to launder any certified sticks you think may have tracker tags. By the time a stick gets to a verification system, it could have traveled across the T-PA, over to Siberia and then into Russia.

- Kzeentch

CORPORATIONS

There are relatively few corporations in the T-PA, and almost all are involved with the fishing and oil industry in



some manner. As the major corps are based in the east with the Thule, it's no surprise that they've been shifting more of their operations south to Iceland.

Bathotech

Bathotech is a UCAS-based corporation that specializes in undersea oil drilling and geothermal power generation. They are primarily famous for their development and refinement of cost-effective underwater geothermal power plants. Their first geothermal plant was built with Council approval under the polar ice cap in 2050, but it was abandoned in 2059 after the newly installed heat tap exploded. The release of radioisotopes from the station's RTGs has caused a significant amount of ecological damage—luckily, the station was not located on a site with major currents. Just the price of doing business.

- The station wasn't completely dismantled or destroyed, but the water around it has some pretty nasty radiation levels. Salvage remotes have reported that parts of the old station even have power (and supposedly, life support). Bathotech left a lot of prototype equipment when they evacuated it, but they've done a good job of burying any information about the facility. It's anyone's guess what's still there.
- Newman

The company has been paying a lot of attention to blocking further expansion of the Pisces underwater stations, which would give them unwelcome competition in the oil fields. Runners with some underwater demolition skills may want to take a look at local job opportunities. Just make sure you pack an arctic-qualified drysuit and a heater.

Pisces Mining Company

Pisces is a local company, technically formed before the T-PA was established. Originally incorporated in what was once the nation of Canada, the company managed to ingratiate itself with the new government by remaining in the area even after Amerind-allied eco-activists had demolished many of its (and other petroleum companies') facilities around the time of the Ghost Dance War.

Though T-PA lands were once rich in petroleum and mineral resources, only a few sedimentary basins across the country still produce oil or gas. Roughly the same number still have economically accessible mineral deposits. Today, the Trans-Polar Aleut's greatest potential for future sources of resources lies offshore and underwater.

- Eco-activists and some traditionalist tribes oppose Pisces operations. Things haven't gotten really ugly yet, but it's only a matter of time. The Peace Force doesn't have the manpower needed to protect the sites, so the locals have authorized Pisces to hire their own security.
- Arctic White

Pisces operates about forty undersea mining operations, none with a staff of over forty. Drones handle most of the

labor. They are visited every week or two by the company's cargo submarines, based out of Kulusuk. Recently, the company has purchased two older diesel-electric attack submarines to guard the cargo subs from eco-terrorists and privateers. At least, that's the official story.

The local buzz centers on the loss of the PCNS *Wainright* last July. She was one of Pisces's largest cargo subs, and hauled crude oil from some of the northernmost drilling sites. She had been reporting strange sonar readings for months, then one day she stopped checking in. Some suspect pirates, and patrols are up about 50 percent.

- I saw the ship, chummer, and I still have nightmares about it. The boat wasn't just destroyed, it was more like the Hand of God had reached down and ripped it apart. I've been on some messy salvage jobs, but this was the worst. The hull looked like melted wax, and what was left of the crew was embedded in the remains.
- Flexidisk
- Just last week, Farm The Seas lost a whaling vessel about four hours north of Iqaluit. I'm starting to see an ugly trend here.
- Porthouse Mage

GOOD ... BAD ... I'M THE SHAMAN WITH THE GUN

The Aleut and Inuit are not related to the southern Amerind tribes by either culture or genetics. Their religious and magical practices are far more similar to natives of Siberia than most of North America. Their *angatkuq* (shamans) are traditionally subject to a wide variety of special rules (such as not being allowed to hunt or own their own transportation) but are given great power and respect. They do not lead the tribe, but they advise, heal, deal with spirits and arbitrate disputes—their word is often considered law.

- Another reason why so many shamans end up in the Peace Force. PFers who aren't shamans are usually careful to be on the good side of shamans they deal with—they don't want to end up on the other side of a conflict from the shaman, cuz they know who the other locals will support in a pinch.
- Santa's Little Elf

Most *angatkuq* specialize in conjuring and dealing with spirits rather than spellcraft. *Angatkuq* follow totem animals appropriate to the environment (walrus, whale, polar bear, etc.), and they believe that all animals have spirits and that these spirits can possess metahumans. Spirits play a major role in Inuit and Aleut spiritual beliefs, and *angatkuq* often seek to learn from spirits, channel them into others or summon ally spirit companions. Even mundane tribals believe they have a guardian spirit, typically some sort of animal-like totem.

- True, though odd totems are sometimes chosen. I personally met a Nuunamiut tribesman who swore that his guardian spirit was the totem spirit of "plastic."
- Maglster

Tupilak

Aleut and Inuit tradition holds that problems that can't be settled by arbitration can be settled by magic, and revenge is considered a perfectly sound response. Angatkuq have been known to summon a specific type of spirit called a *tupilak* to hunt down and attack their enemies. The creation of a tupilak requires quite a bit of investment and ritual, and they are carefully crafted to appear as horrific creatures or monstrous animals. Tupilak are always agents of death and vengeance, and are never created lightly.

- Tupilaks are an unreliable means of vengeance. If you ask me, I've heard of cases where tupilaks couldn't find their targets, so they became confused and attacked others (or even their own creator). There was a case a few years back where a tupilak was created to kill a man who had stolen a shaman's wife. It seems that the target fellow had died a few days previously, and when the creature arrived it decided that anyone who had been associated with the man was fair game. The final death toll was fourteen people.
- Morgan

- Some angatkuq have been trying to combine voodoo methods with their traditional beliefs. Some of these create tupilaks using a kikituk, a twisted effigy of the target himself.
- Magister

- Great. An animated, killing voodoo doll. Just what I wanted for Christmas.
- Joey

ANTARCTICA: THE FROZEN SOUTH

- Antarctica is not really the sort of place that regularly shows up in the headlines. But in the past few years, we've been hearing more rumors and rumblings about the icy continent. We lucked into finding a runner with the experience and the knowledge to give us the data we needed.
- Captain Chaos

Transmitted: 16 September 2062 at 05:05:20 (PST)

by South Paw

Antarctica is big, chummers; 14 million square kilometers of ice and rock as far south as you can get. If you're looking for a spot to get away from the masses of metahumanity, this is your dream come true—even with the recent influx of outsiders, there are no more than 10,000 individuals on the entire continent (and less than 5,000 during the winter). That's a population density that makes Greenland look like a crowded metropolis. There are times when it seems like a bit more, though, since 99 percent of the chumps out here are located on the coasts.

HISTORY

The Antarctica Treaty, signed by a bunch of major nations waaay back in 1959, established a legal framework for man-

aging Antarctica, so that all the countries could share it like good little kids. The Treaty banned military activity, weapons testing, dumping and resource exploitation.

That lasted until around 2006, when the Resource Rush put all the corps in a frenzy. The Treaty was effectively shredded, and some corps moved in to do oil surveying. But conducting operations was a bit more costly and difficult than they had expected, especially with some pissed off eco-radicals sabotaging everything they could (and in Antarctica's extreme conditions, it's very easy for things to go fatally wrong). The corps kept at it anyway until the Awakening hit. Like everywhere else in the world, Antarctica got its shake-up—mostly severe storms, wind and ice—but it was enough to send most corps packing.

In the few decades since, activity in the Antarctic has started to pick up again. With no treaty to protect it, the corps have free rein, but they've found that the weather, the eco-activists and the other residents have a way of keeping them in check.

- South Paw doesn't mention the ozone hole. That's right, back in the 1980s, scientists discovered that various chemical byproducts of our lovely advanced civilization were eating a massive hole in the stratospheric ozone layer right over Antarctica every spring. The size of this hole fluctuates, but it's now present throughout the entire year. The ozone layer is what protects us Earthly inhabitants from deadly UV radiation. Anything under that hole (which these days is most of Antarctica) is getting a regular unhealthy blast of space rays. Luckily, Antarctica doesn't have much in the way of natural life, so we haven't seen hordes of mutant critters. But you will see increased cancer rates and other goodness in Antarctic-dwelling metahumans—and who knows what it's doing to micro-organisms across the continent or in the seas.

- Deep Green

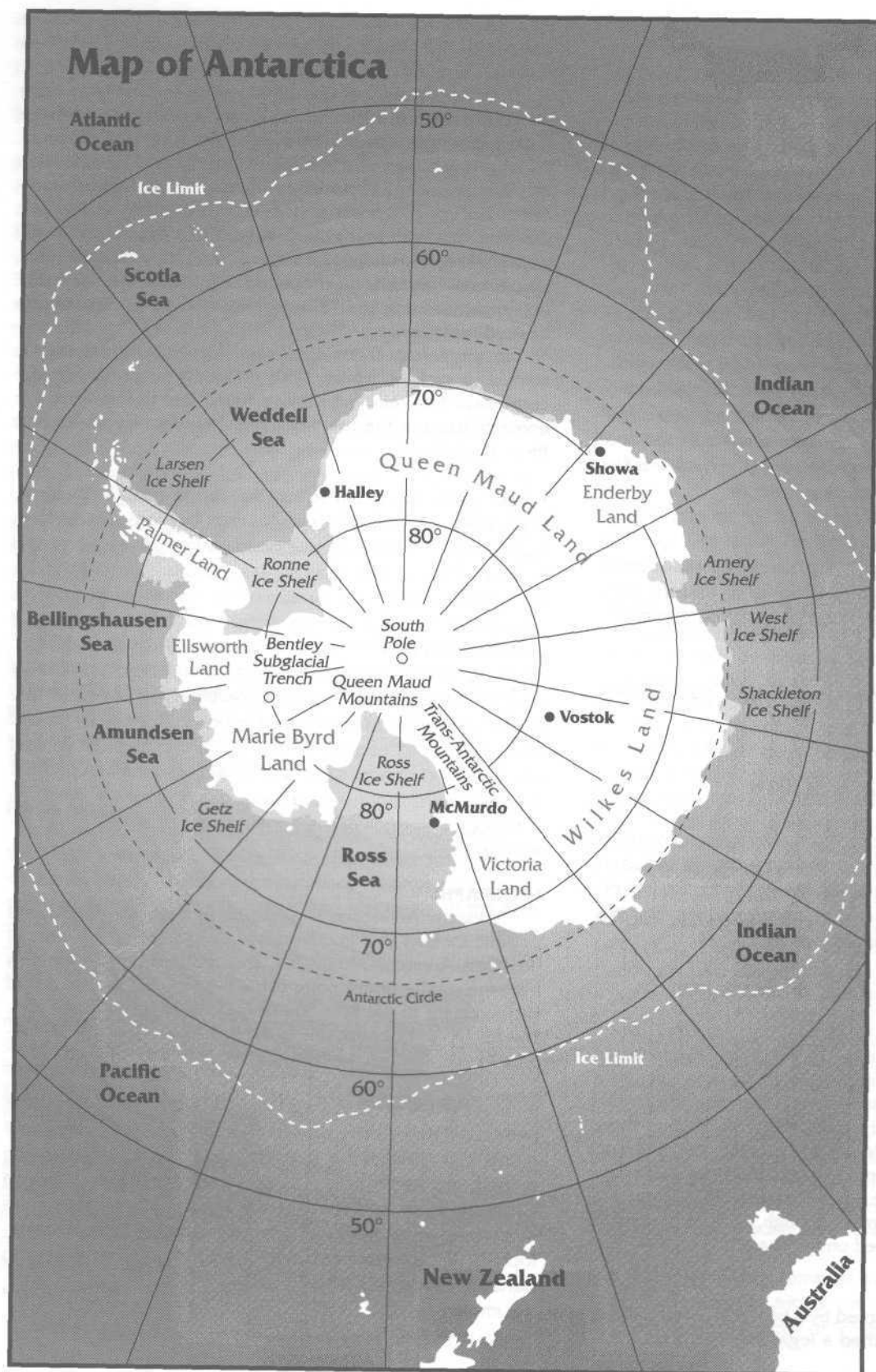
GEOGRAPHY

Western Antarctica is adjacent to both the Pacific and Atlantic Oceans and encompasses everything to the west of the Trans-Antarctic Mountains. This mountain range extends from the southernmost point of the Weddell Sea on one end of the continent to the Ross Sea (and along it) on the other end. The Antarctic Peninsula, one of the few Antarctic areas not covered by ice, reaches northward towards South America.

- The Antarctic Peninsula is actually an extension of the Andes mountain range. Those who make it their business to map out mana lines have noted that the Andes mana lines seem to extend into Antarctica, but then they apparently descend under the Polar ice sheet. There is some speculation that the mana level under the ice could be a lot higher than at the surface if there are more networks of these mana lines extending beneath everyone's feet.

- Bumble

Map of Antarctica



Eastern Antarctica makes up two-thirds of the continent and is largely a plateau with very strong winds. It is a wasteland as far as resources are concerned, with the actual land buried under hundreds of millions of tons of ice.

The Polar Plateau at the center of Antarctica is covered with a massive layer of ice. These glaciers continuously renew themselves, pouring off the ice cap and inexorably pushing outward and off the coasts in massive ice shelves. These shelves advance hundreds of meters every year, splintering with crevices as they come north, and eventually calving off into icebergs. Some ice shelves, such as the Ross Shelf in the Ross Sea, float on the water, creating vast ice-capped, undersea domains.

The temperature of the liquid water in the Antarctic is below the freezing point of fresh water; it's only kept liquid because of the salt content. Even so, it's not unusual for the top inch or two of the water to freeze and form a flexible ice layer that rolls with the underlying waves. Most Antarctic marine mammals have well-developed mechanisms for retaining body heat.

- The major food source in the Antarctic is krill, a small crustacean that lives in the Antarctic Ocean. It forms the main food source for nearly all the aquatic and partially aquatic animals of Antarctica. Of late, scien-

fists are getting worried, though. The krill seem to be dying off—or worse, mutating—as they come into contact with toxins carried in by other oceans. It remains to be seen if this will have a lasting ill effect on the area, but odds aren't in the krill's favor.

- The Smiling Bandit
"Striking Again! Ha Ha Ha!"

Orichalcum

As Halley's Comet passed by, a Japanese scientific team discovered an orichalcum vein in the Transantarctic Mountains. This led others to investigate, and before long, another vein was discovered on the Queen Maud Mountains. Antarctica experienced a tourist boom like you wouldn't believe in those few short months, as prospectors began to turn over every patch of snow and rock trying to locate the precious material. A few die-hards are still out there, hoping to score a find, not believing the "rumors" that orichalcum worldwide has dried-up again.

- Most of the orichalcum was discovered in small pockets, which tended to mean that all the salvage teams rushed to the area as soon as word leaked out. More than a few fire-fights started when the pickings started to get slim.
- Jack Frost
- The odd thing about the Antarctic orichalcum was that some of it was found packed inside the ice—not in the ground. As soon as word of that got around, magicians started zipping around inside the ice, scouting for more. This turned out to be a dangerous pastime. After a few hundred meters you start to experience a sense of weight, like you're hauling around a backpack filled with bricks. The deeper you go, the slower you get and the more the weight presses down on you. Go too deep and you'll never make it back up.
- Winter Warlock

The Trench

The Bentley Subglacial Trench is located in western Antarctica. It's the lowest point on Earth that's not under sea water—2.5 kilometers down, covered in ice. The trench area is the continental "hot spot" as far as strange magical events go. Throughout the 2040s and 2050s, people reported seeing strange buildings on the horizon or hearing voices on the wind. Some people even claimed they had seen entire cities on the ice.

Then in June of 2062 a science team studying icepack levels made a startling discovery. Their data contained a major anomaly—the discovery of geometric shapes at the very bottom of the Trench. Usually referred to as "the city" by everyone but the scientists, this cluster of geometric-shapes shows up under high-resolution radar. In the last few months, several other sites have been discovered—all within 40 clicks of Mt. Kirkpatrick.

- The biggest case against them being anything but natural formations is that the weight of the ice would have long-since crushed any conceivable structure as the icepack slowly shifted over time. I've seen the data, and while evocative, it's hardly proof of anything.

- Argent
- Saeder-Krupp certainly thinks there is something there. They recently moved two mobile camps to Mt. Kirkpatrick and they've been very active on the mountain itself. They don't seem interested in the actual "city" sites in the area—just Mt. Kirkpatrick. Maybe they know something we don't?
- Winter Warlock
- Gee, what are the odds on Lofwyr knowing something you don't? Lemme think about it ...
- Dragonslayer
- Maybe he's looking for some old relatives.
- The Laughing Man
"Ha! Fraggin Ha!"
- His or yours?
- The Orange Queen

COLD MAGIC

On a magical level, Antarctica is an unstable place as the mana level ebbs and flows across the continent. The exact reasons have yet to be worked out, but I've heard theories ranging from the lack of many higher animals to the auroras serving as a giant magical flare. What matters is that if you're a magician, or you rely on one, you're going to be at a handicap at least part of the time. The mages I've worked with described the shifts as almost tidal, so it does seem to occur with a sort of pattern to it. The rule of thumb is, time your mission carefully.

Antarctica is also home to a unique Awakened beastie, called *silap innua* (or "frosties" by some research crews). Silap are some type of spirit that take on the form of a snow storm. They seem to dislike outsiders and have been known to descend on research and exploration groups and attack them. The silap presence builds small, starting with some heavier wind and flurries, then escalating to blinding snow, gale winds and accidents before building up to massive storms and devastating shocks of wind or even lightning. Silap have been known to wipe out entire encampments.

- Some shamans I know investigated the silap to determine if they were toxic. They decided the answer was no, but postulate that the silap are some sort of guardian spirits, protecting the Antarctic (or at least parts of it) against outsiders. What or who they are guarding, or why they would do this, is unclear.
- Stalker



ISOLATES

The closest thing to metahuman natives on Antarctica are the Isolates—a general term applied to the few hundred survivalists, cultists and all-around weirdoes (plus their descendents) who decided to settle on perhaps the most hostile area of the planet. Some live on the abandoned oil platforms that litter the Ross Sea, some live in complexes that were blasted out of the Trans-Antarctic Mountains, while others live in shelters they've carved out of the ice. Not many of the groups are nomadic—you don't last long wandering around on the mainland.

The vast majority of the Isolates simply want to stay as far away from everyone else as possible—and that usually includes other Isolates. That doesn't necessarily mean they are stupid or primitive—it requires a staggering amount of technical knowledge to survive in Antarctica. A few of the larger groups have investments that they draw interest on; others operate small fleets of fishing vessels to get currency

to buy the few items they absolutely cannot make for themselves (usually replacement parts and new survival suits).

Most Isolates live very simple lives, but possess a high degree of technical sophistication. Myco-protein vats, hydrogen stills and even solar panels are all common. Awakened individuals are extremely valuable—not only for fighting spirits but for warmth, food and medical abilities. Some groups rely entirely on magicians for their survival. Only magic lets people live here without constant resupplying from the outside.

- At least one group of Isolates is composed of wujen and geomancers who came to Antarctica to study the land's potent feng shui. They spend many long weeks mapping out the dragon arteries and seeking the land's "balance," whatever that means.
- Shu

The Isolates are considered something of a pest by the corps—especially those occupying the old oil rigs in the Ross Sea. The corps would rather see the Isolates vacate the entire region, but corporate efforts to get rid of them have been half-hearted at best. It isn't as though the Isolates were holding anything valuable that the corps wanted, and there were better uses for corporate funds. Of late, however, the corps seem to be taking a much more serious look at removing the Isolates from what they consider their territory.

- The Isolates proved that they were far more dangerous and well-equipped than anyone thought. The corps lost more than one team sent to raid Isolate camps for any orichalcum they had discovered. These people have been living in Antarctica for almost three generations—but it still came as a shock to the corporations that they had access to heavy weapons and magic.
- Snow Miser

- You know, it really isn't a great thing for Antarctica to have people on it constantly. People naturally use up goods and produce waste. Now in most other parts of the world, someone roughing it in the back country wouldn't have to worry about it too much. Nature would pretty well clean up after him so long as he didn't leave behind too much non-biodegradable stuff. In Antarctica, though, there is no ecosystem to take care of things like that. Waste that's left behind stays there. Indefinitely. Period. You can still find lightly-rusted tin cans from the 1800's if you know where to look. Most of the Isolates are determined to live low-impact lives, but you still have to have somewhere to put your drek. They're lucky they haven't begun producing toxics yet.

- Eco-Dude

THE STATIONS

There are over two dozen research stations in Antarctica—many located along the coast in the same spots where the nineteenth and twentieth century posts were constructed. You can always tell the difference between the scientific research stations (operating on shoestring budgets and grants) and the megacorp sites (with all the modern amenities and security).

- Even before they found orichalcum, there was nuyen to be made in this Icebox. Though there are no full-time land animals bigger than a mite living in Antarctica (the penguins and birds primarily live along the coasts and spend most of their time at sea) almost every single bacteria, lichen, and fungi has changed since the Awakening. And these little suckers have exhibited some extremely interesting possibilities in fields such as optronic formatting and plastics.

- Aware

- Abandoned research stations dot the interior and coastline of Antarctica, remnants of a different age. Some of these are

slowly being crushed by drifting ice or buried in snow. Some may still have valuable research data, while others are used as hideouts or Isolate bases.

- Wanderer

Airfields are a rarity, even in the warmer areas. An airstrip usually consists of packed snow marked by flags. Snow runways are only useful for aircraft using skis, though—trying to land with tires results in a crash.

High Threat Incarceration Facilities (Rev Lup Security)

Prison overcrowding has been a worldwide concern since the late twentieth century, and the increasing gap between the megacorp elite and the underclass has only made it worse. Automated drone systems and behavioral control measures helped to maintain prison security and minimize riots, but after the Awakening, many prisons also proved inadequate to hold magically active individuals. As the prison industry became increasingly privatized, some corps started investigating other options for handling high-threat prisoners. They found their solution in the past, in the examples of Devil's Island, Alcatraz and similar penal colonies—escape is only good if there's somewhere to go.

Rev Lup Security was the company that ran with the idea, combining state-of-the-art magical know-how with hefty financial backing and great engineering. They made a powerful case that they could economically handle dangerous individuals by locking them up in a facility in the most isolated spot in the world—Antarctica. Their plans proved to be remarkably effective, and larger companies now subcontract to Rev Lup for individuals deemed incorrigible and beyond reeducation.

- Or for individuals that need to be kept far, far away from friends and allies, but who can't be killed for political or other reasons (martyrs can be such a pain).

- Joan

- Rev Lup is considered something of a scavenger—feeding off the refuse that the big corps don't consider worth the trouble. And few people really care where the latest cyber-monster or magically amped serial killer ends up, as long as it's not in their back yard. Rev Lup's low overhead is making profits every year.
- SPD

- It helps that the number of dangerous criminals who happen to be Awakened has been steadily climbing as well. Considering the massive cost of keeping such individuals confined, it's not surprising that specialists like Rev Lup get more business.

- Maelwys

It's unclear how many prison facilities Rev Lup has down in the Antarctic—they don't exactly advertise. In order to minimize expenses, the first few were built up north on barges (or in one case, inside an old tanker ship), floated down to the Antarctic then offloaded and stashed somewhere. The prisons are designed to be self-sufficient, along

the same lines as an arcology. They're fully automated, staffed by drones and an expert system. Even the supply runs to add sugar to the myco-protein in the food vats are rigged and unmanned. Particularly dangerous and powerful individuals are usually hooked up to continual-loop simsense, except for brief periods when they are allowed to exercise and eat. Guards monitor the prison remotely via encrypted satlinks, only sending out heavily armed teams in the case of a prison break or major malfunction.

- During storms or other heavy weather, these prisons are often cut off from their remote watchers. That's the time to make a break.

- Birdman

- Even if someone does break out, they're likely to die before getting far. The prison doesn't contain any sort of survival gear. And the automated defenses are more than heavy enough to deal with any outside help a prisoner might have.

- Jackson

McMurdo (UCAS/Ares)

Financed by Ares and the UCAS government, this is the largest and most ambitious base currently in use, housing two hundred full-time researchers and security specialists. Research here concentrates on everything from new bacterial strains under the Ross Ice Shelf to geological explorations to the Aurora Australis (Southern Lights). The station receives monthly supply runs for everything from batteries to water.

- Almost all of the "security specialists" at the base are contracted shadowrunners. The UCAS and Ares have gone out of their way to be "hands-off" with the station—claiming it's largely an independent effort for which they just provide funding.

- Snow White

- The biggest news at McMurdo is that AresSpace is beginning construction of a small arcology. It will supposedly test new technologies for a future Mars mission.

- IC Skater

- I managed to snag a look at their classified roster—every one of the supposed astronauts was a wagemage working in their Research and Development Division before attending astronaut training. Seems like a lot of effort being expended for little gain—wizards and space don't mix.

- Winter Warlock

- It's pretty easy to spot the station from the air. Just look for the huge waste dump about a few clicks west.

- Sauvix

Vostok (Russia/Yamatetsu)

The Vostok stations may be the most inhospitable area on Earth. Perhaps the remotest and coldest place on the entire continent, the temperature regularly drops lower than -100 degrees Celsius with wind chill. The harsh conditions are made even more dangerous by a lengthy 1,000-kilometer supply run to the coast (now handled by drone land-trains).

Near the turn of the century, it was discovered that Vostok was unintentionally placed above an ancient lake that lies trapped below four kilometers of ice. The ice insulates the lake, trapping the Earth's heat enough to melt the bottom layer of the ice sheet. The size of lake Ontario (but twice as deep at 500 meters), scientists believe this lake has been cut off from the rest of the world for over 15 million years. Though the lake is an extremely hostile environment with its low temperatures, high pressure and lack of light for photosynthesis, scientists expect that unique microbial life forms may have developed there. Scientists ran into difficulties when trying to figure out how to access and collect samples from this lake without contaminating it or polluting it with surface bacteria.

Before scientists could tackle the problem, Vostok was closed down after a series of fatal power accidents and severe weather incidents. The station was re-established around 2020, but then a silap innua took it out. Russia stubbornly held onto their claim to the site, refusing to allow access for decades, though several corps tried. Finally, Yamatetsu was given permission to re-open the site in 2060. A blanket of mystery now surrounds the base as Yamatetsu keeps its research projects to access the lake top secret.

- Ares wanted access to that lake reeeaaally bad. From what I gather, the lake's conditions are similar to those on icy Europa, one of Jupiter's moons. AresSpace has some plans to visit there, and so running tests around the lake would be a great way to practice.

- Errant Knight

- I know some biotech corps that are extremely interested in any lifeform samples that get pulled from the lake. They expect the microbes to survive by some form of chemosynthesis. Anyone know if Yamatetsu's penetrated the lake yet?

- Delver

- No. And I'm not sure I want to be around if they do. Who knows what kind of primordial plague they might pull out of that hole.

- Krycek

- I'm not worried about the goo—I'm worried about the magnetic anomalies that have been detected near the north end of the lake. That's the real goal of the research, you ask me. Could be an alien ship trapped under the ice!

- Tom Two

Halley Station (Britain)

Halley is an isolated research station, located on the Brunt Ice Shelf on the eastern shores of the Weddell Sea. It's pretty much out in the middle of nowhere—supplies are usually airdropped or towed in from the edge of the ice shelf (the station averages about 14 kilometers inland depending on the growth of the shelf). There are roughly 150 researchers and security personnel at the station, many of whom have lived there for years.

The station is definitely the most relaxed on the continent, an unofficial "neutral zone" for everyone in Antarctica. The station is also the only one to host tourists, shuttled in from the coast or landing at the station's own landing pad. They stay in the newly built quarters at the far side of the base, looking out at the frozen waste from the comfort of their plush apartments. Some come to enjoy the unspoiled Antarctic land, but most come for the auroras.

- A couple of Antarctic exploration groups stage their operations out of Halley, taking thrill-seeking, nuyen-burning tourists on trips across the Transantarctic Mountains or along the routes of the early Antarctic explorers. If you need a semi-legit excuse to come here, this may be it.

- Adventurer

Halley experiences darkness for 105 days out of the year—but during most of that time, the region is illuminated by the brilliant Aurora Australis (southern lights). The station happens to sit at an ideal location to view the lights, which have been far more active and bright than at any time in recorded history. Though the auroras are visible throughout the Southern Hemisphere, at Halley they are visible for days at a time. Even during the periods of daylight, the auroras are still visible to the naked eye. I can only imagine what they look like from the air. The station is also notable for the lack of any hostile spirits—summoned spirits have also been observed to dislike being in the area.

- It's the rift they don't like, I also don't recommend going astral while the aurora is at its strongest, or if it's in curtain form. It's like you're a dustball standing next to the biggest fraggin' Hoover you've ever seen in your life. Un-pleasant.

- Winter Warlock

The station's scientific mission concentrates on geospace research. They have a honking huge radar and satellite downlink about eight clicks from the site that is the center of their efforts to map and predict the activities of the auroras. They also maintain a small fleet of drones that can be sighted all over western Antarctica.

The station itself is also one of the few to be completely mobile. Building directly on the ice here is pointless, as the facilities would be crushed within a few years. Instead, all the buildings are either built on pilings or are equipped like giant

sleds that can be towed if any area becomes unsafe. The main research facility, the outlying radar array, station personnel living quarters and a landing pad are all on pilings that are jacked up each year to keep them clear of the snow. In an emergency, the buildings can be disassembled and each section towed to a new position for reassembly. The visitors' quarters, the pub, "general store" and all of the garages can be moved at any time.

- Halley has the only pub on the entire continent. Even if you don't drink, it's the only place to get a decent meal for thousands of miles. It's probably one of the few places you'll be able to find Isolates in a "civilized" area.

- Jack Frost

Showa Research Facility (Imperial Japan)

The Japanese have kept to themselves since establishing this arcology in 2050 on the site of an older station. At the same time, they also established a system of automated research stations around the continent. You have to give the Imperials some credit, at least they are honest about what they're doing. They do conduct honest-to-goodness basic research on the Antarctic and allow their scientists to participate in international forums and share information.

- Of course, a lot of their studies on marine biology and the new migration patterns of whales is primarily done to support the massive fleet of whaling vessels that roam the region strip-mining the seas of all life.

- Green Machine

- No. What we do is attempt communication with the whales, in an effort to gain the generous bequest left by Dunkelzahn. According to the Draco Foundation, whales are also considered suitable subjects for winning the reward. Your simple-minded assertions reveal just how much you don't know about the modern Imperial world.

- Jinjro

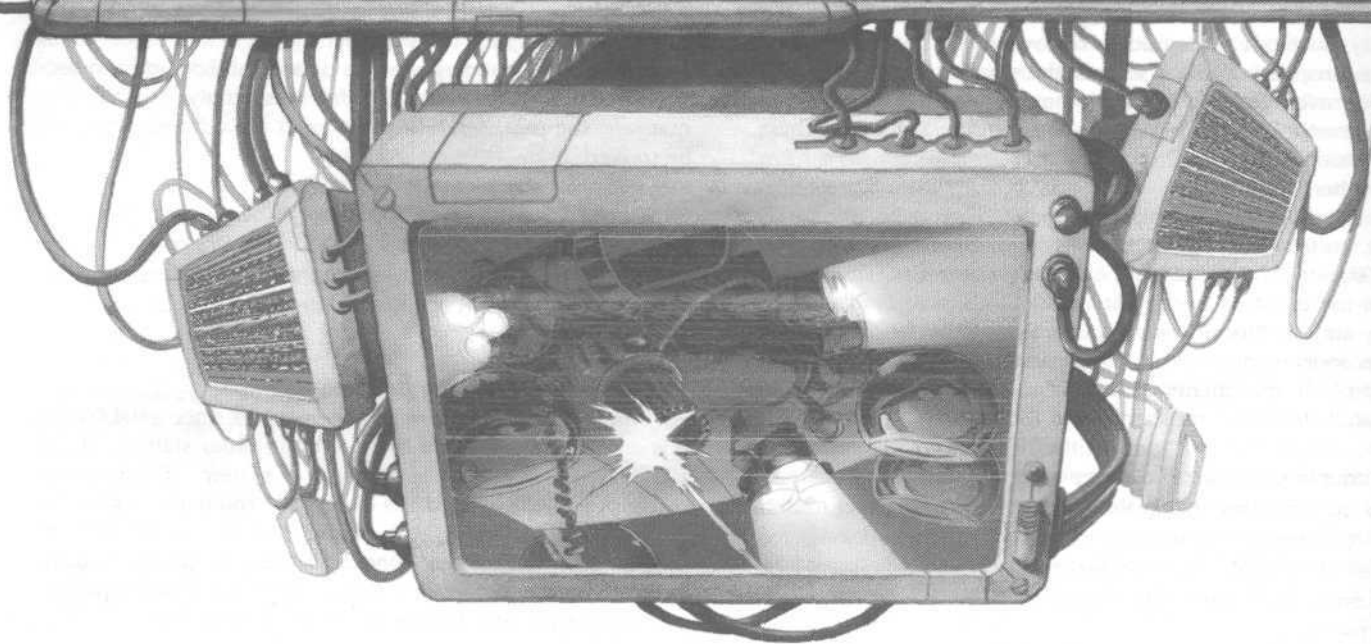
- A half dozen Japanese megacorps also run programs via the Showa facility and automated bases. Eco-activists seem to have chosen Showa and these bases as their primary target, though, so their operations sometimes need protection (hint hint).

- Southern Cross

- Nobody's mentioned S-K's base, although S-Kers seem to pop up everywhere in Antarctica. The reason is that it's underground, in ice tunnels and chambers far below the surface. God only knows what they do down there, but whatever it is, they sure don't want anyone to know.

- Dragonslayer

UP THE GRAVITY WELL



You can't find a more hostile environment than space. You go out of an airlock without a spacesuit; you die. Your suit gets a hole; you die. Your ship, station or pod loses life support; you die. Not much more to be said. The survival skills a shadowrunner needs in space are a different sort from surviving in a harsh wilderness. It's more about knowledge, knowing the players and having the right contacts. A healthy background in science won't hurt either.

To give you the data on shadowrunning opportunities far, far above, I've brought Kenzie onboard. Kenzie's an independent contractor who knows her way around up there. The intel is solid, so give it a scan if you decide to leave this rock we call home anytime soon.

• Captain Chaos

Transmitted: 16 September 2062 at 05:26:09 (PST)

by Kenzie

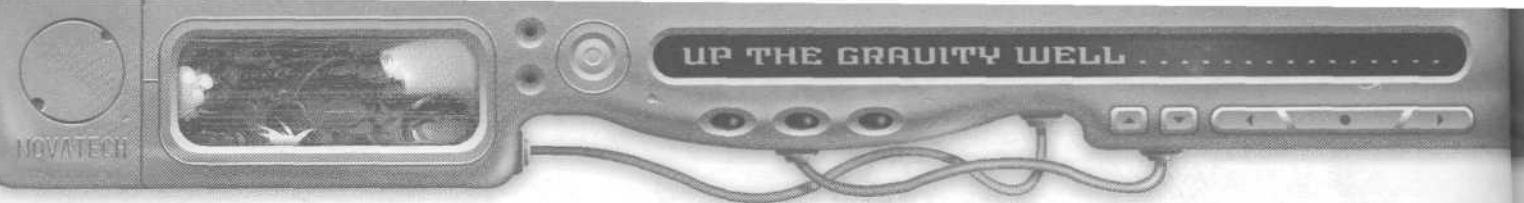
Beginning as it did in the Cold War, space exploration initially remained in the province of nations, as the United States and Soviet Union engaged in a game of one-upsmanship, trying to see who was first into space, who got the first person into orbit and who got to the moon first. Though the Soviets got the early lead, eventually the US became the dominant player in space. Meanwhile smaller players—the European Space Consortium, Japan, and China—trailed in the wake behind the two superpowers.

SPACE, INC.

But as the Cold War wound to a close, new players arose. Though it got off to an auspicious start, the international space station *Unity/Zarya* ended in disastrous failure after only a year in operation. Meanwhile the Russians, on the verge of bankruptcy, sold their station *Mir* to the Harris-3M consortium. It was the first time a corporation, rather than a country, owned and operated a manned space station in orbit.

Harris-3M used *Mir* (dubbed as *Wheelchair* by some sci-fi minded technicians) as the jumping-off point for extensive space research and training, discovering many of the principles necessary for conducting continuous, long-term space operations. The decrepit Russian station also gave them many problems, however, and after a meteoroid cored *Mir* in 2008, the conglomerate had no choice but to scuttle it.





For a while that left NASA's space station *Freedom* as the only manned station in orbit. But running the station was becoming problematic, as cutbacks and increasing conflicts with the SAIM forced the US to scale back their space operations. Eventually the US sold NASA and *Freedom* in 2016 to a budding industrial conglomerate known as Ares Macrotechnology. Though the ESA and Japan had a few ongoing projects in space, from that point on space exploration had essentially become a wholly-privatized operation.

SPACE RACE REDUX

Beginning in 2016 and lasting for the next thirteen years, a new space race began as various corps tried to outdo each other in their space developments. The first two years after the NASA buyout, Ares spent billions of dollars shoring up a space program fallen into neglect. In 2019, Ares unveiled its own space station, *Apollo*, which went into full operation in 2020. Ares then sold *Freedom* to the Inter-Corporate Council, which renamed the station Zurich-Orbital. Later in 2027, Ares began construction of the research station *Daedalus* at the L4 LaGrange point, though delays stalled development for several years (sparing it from events to come).

The LaGrange points are points where the gravitational pull of the earth, sun, and moon cancel each other out, creating a gravitationally neutral zone. These make them very suitable for building large space stations, particularly as staging areas for deep space launches. There are five LaGrange points, labeled from L1 to L5.

- The LaGrange points are prime orbital real estate. So far, they've been first come, first serve. But now that most of them have been taken, we may see some disputes develop as the orbital community expands.
- Vacuum Squatter

For all of Ares' developments, they were still a step behind space pioneer Harris-3M. The conglomerate had already unveiled the first corporate space station in 2017, called *Halo*, which hovered over the earth in geosynchronous orbit. By the time Ares began construction of *Daedalus* in 2027, Harris-3M already had two super-stations in operation at the LaGrange points, *Angel Station* at L5 and *Nerva* at L3.

Over in Europe, the ESA was starting to experience the same problems as NASA, as the EU had become preoccupied with other problems: a rash of ecological disasters springing throughout Europe, a military coup of the Federal Republic of Germany, civil war in the Benelux and many others. Eventually the EU privatized the ESA in 2025, selling it off to Saeder-Krupp. Meanwhile in Japan, a new spacefaring venture was getting off the ground as Shibata, then part of the Mitsuhamas keiretsu, began launching commercial satellites from the Japanese Empire's Kagoshima launch facility in 2023.

CRASH AND CONSOLIDATION

By the beginning of 2029, outer space had become a hot venture in the business world. Ares had turned around a fail-

ing government bureaucracy and was actually making a decent profit from its space ventures. Harris-3M, the original corporate pioneer, had accomplished feats that outdid the United States or Soviet Union, and it was well on the way to establishing a permanent colony at *Angel Station* and on the moon. Behind these two, Saeder-Krupp, Mitsuhamas and about a dozen other companies had already commercialized much of low earth and geosynchronous orbit.

And then it all came crashing down.

The Crash virus of 2029 proved to be as deadly as the two VITAS strains when it spread into orbit, causing critical life support and traffic computers to fail. Many stations simply blacked out, condemning their trapped inhabitants to a cold, dark, asphyxiating death. Less than half of the stations in orbit survived the computer plague to continue operating.

- In theory, these stations all had back-up life support systems and other redundancy features that the Crash virus shouldn't have touched. In reality, these back-up systems weren't up to code, so to speak, and they failed. That's Lesson Number One in space survival right there: always have a backup or three—and make sure they work.
- Orbital Bandit
- I've heard speculation that the Crash virus seemed intentionally tailored to infiltrate back-up systems and terminate orbital systems. Was someone trying to remove competition?
- Conspir-I-See

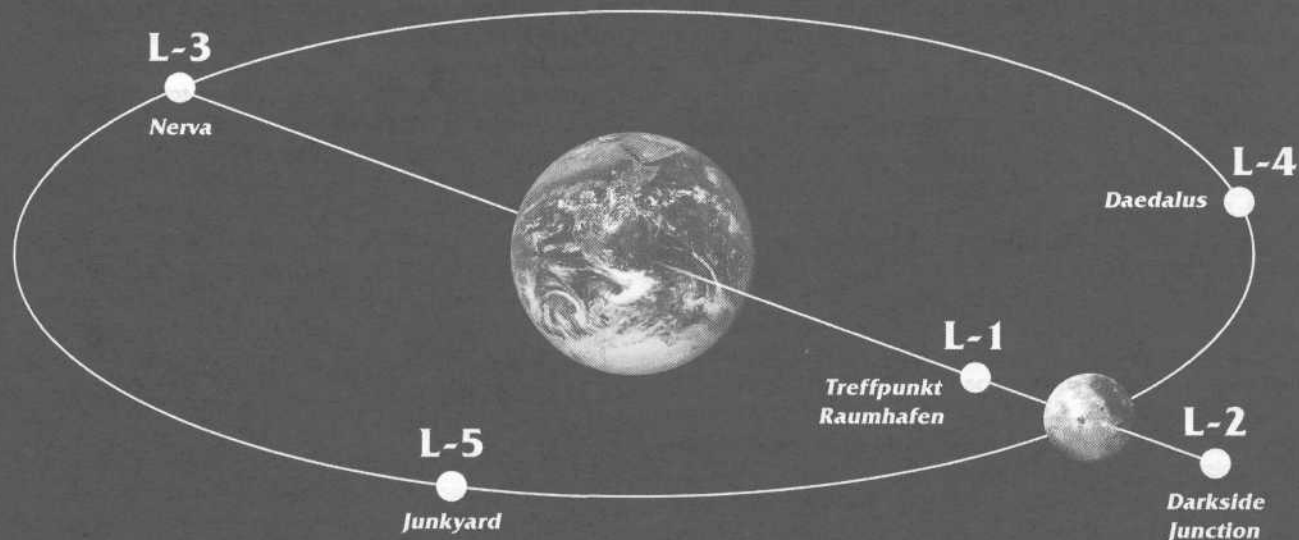
The Crash proved to be the death knell of many space companies. Only megacorps with diversified interests on Earth—such as Ares, Mitsuhamas, and Saeder-Krupp—lived to turn another nuyen, though the Crash had savaged them as well. Because of the losses sustained by Shibata during the Crash, Mitsuhamas was forced to sell off Shibata and withdraw from the aerospace industry; Shibata spent most of the 2030s and 2040s slowly recovering from bankruptcy. The biggest casualty of the Crash was Harris-3M, which saw *Halo*, *Angel Station*, and *Nerva* shut down permanently during the Crash. Subsequent lawsuits from families of personnel entombed in those stations ate at its revenues throughout the 2030s, and the conglomerate fragmented in 2038. Fuchi bought out most of Harris-3M's ground-based space assets, but they never recovered its three main space stations.

The few corporations that survived the Crash did so only by drastically scaling back their operations. Other than Ares's *Daedalus* station (which escaped the Crash mostly unscathed by still being under construction), development projects beyond geosynchronous orbit were cancelled in favor of orbital ventures—such as satellite development and orbital factories—that would render a profit in the short term.

CORP WAR

And so did it remain for the next few decades. In the fight against the Crash virus, a new discovery emerged: the cyberdeck. When Fuchi unveiled the first cyberdeck, the corps lost interest in outer space and cared more for cyberspace.

ORBITAL SPACE



Images from NASA and National Space Science Data Center

Meanwhile, changes in corporate politics kept the megacorps preoccupied. First Damien Knight pulled off his Nanosecond Buyout, then the dragon Lofwyr pulled a buyout of his own. Later Yamatetsu clawed and scratched its way up the corporate food chain to get its seat on the Corporate Court. And just when all that was over, Aztechnology got uppity, and the Court had to teach the Azzies a lesson at Ensenada.

- A lesson that included the threat of a "Thor shot"—projectiles dropped from orbit by Ares. Nice to know the big guys can always squish whole cities like bugs if they choose, eh?
- CorpBuster

It would take a dragon to re-awaken interest in space—and spark a war. When the dragon Dunkelzahn shuffled off the mortal coil, he upset the corporate balance of power by putting Miles Lanier, Fuchi's chief of security, on the Renraku Board of Directors, laying the straw that would break Fuchi's back. Fuchi, then the number two corp in the space race, broke into three pieces, one forming Novatech and the other two acquired by Renraku and Shiawase. The split also shattered Fuchi's assets three ways, taking its survivors out of the running and moving Saeder-Krupp ahead in the space race.

- Most of Fuchi's space division, Fuchi Orbital, went to Novatech, as that division had thrown its lot in with Villiers during Fuchi's three-way power struggle. Shiawase also inherited a significant share, however—mostly European aerospace subsidiaries, which it added to its own space assets. Renraku got the smallest share,

a few token companies that Shikel Nakatomi had managed to snatch before they went into Novatech. When the Seattle arcology shut down, Renraku sold off most of those assets to Shibata to offset the losses they were taking in Seattle.

- Tamino

At the same time, a couple of new faces and one old face reappeared on the space scene. Yamatetsu surprised the world by leaving Japan for Vladivostok, and the Russkies offered them a nice housewarming present: partnership in the Svobodny Cosmodrome. Meanwhile Proteus AG quietly built its own launch pad offshore from South America, drawing attention away from it by filing a claim with the Draco Foundation for an underwater arcology. While all this was going on, Shibata, Mitsuhamas's tax write-off, acquired from Renraku the space assets it had snatched from a dying Fuchi, which was enough to bring this has-been back from beyond.

THE PROBE RACE

The return of Halley's Comet renewed interest in space and also spurred a third space race as a swarm of corps struggled for the prestige of beating their competitors to the comet. The old faces were all involved, but several new ones arrived to compete as well. The hype and high stakes brought out the best and the worst in the corps. Some significant design and tech advancements were made, orbital tourism soared and spin-offs products cascaded down into the consumer sphere. But behind the scenes, the corps waged an intense low-level conflict of espionage, sabotage and media manipulation.



Though the first leg of the probe race (Halley's first pass by Earth) was a failure as none of the initial probes managed to reach the comet under full functionality, it was a success for the corps in terms of media sensationalism and marketing. Yamatetsu claimed a hollow victory since their probe actually reached the comet, though a system failure made the mission all but worthless. Round two was even more intense, as this was the last chance the corps would get. It was a tight race, with probes dropping left and right, but we all know who won, don't we?

ORBITAL BUZZ

With the comet on its way back out of the solar system and the probe race settled, public interest in space remains at an all-time high. The space corps are investing in new projects like crazy, and new corps are elbowing their way into the industry. The orbital and lunar populations (both permanent and transitory) are swelling to capacity, creating a demand for new stations and bases. At the current rate of expansion, the off-planet population will double within the next two years. Manned missions to other planets are openly being discussed, and if the rumors are to be believed, may already be underway.

- And with a boom like this, there's going to be plenty of opportunities for runners to maneuver between the cracks, taking advantage of incomplete security measures and the crowd anonymity of the immigration rush.
- Smith
- There's already a small but thriving shadow community in orbit, functioning as freelance operatives, salvaging junk and making use of abandoned bases—and it's only going to get larger. That means runners who are coming up from dirtside have a pool of locals to call upon for their expertise, influence and contacts. Every little bit helps, chummer.
- Shooting Star

RUNNING IN SPACE

Okay, Kenzie, you say, this is all very interesting, but so what? Space is the personal playground of the megacorps, you say. There's no way they'd let grubby shadowrunners spoil their sandbox, you say.

Bulldrek, I say.

Yes, the megacorps run the show out here. But then again, they run the show in Hong Kong, Seattle, and everywhere else on Earth, don't they? You all still make shadowruns there, don't you? Or are you all just figments of my imagination? Let's face it, wherever the corps go, there's going to be dirty work to be done, so who's going to do it? Yup, you, me and everyone else who works the shadows for a living.

INDEPENDENTS

So if there's dirty work to be done, who's going to do it? After all, everyone who's out there works for the big megacorps, right?

Wrong.

While the large majority of folks working out here belong to one of the big boys, there are still a sizeable number of smalltime corps and independents not affiliated with any of the bigshots. A lot of non-space corps, for example, have a presence in space. Universal Omnitech has a number of research pods free-floating in low orbit, conducting zero-gravity biotech research. Corps like this either own or lease pods or space on a station for their work, but they have to rely on one of the major carriers to bring their equipment and personnel into orbit on a suborbital or rocket launch.

- Many of these non-space corps can provide a ticket up the gravity well, even if you're not working for them at the moment. They won't fully disclose their bill of lading to the corp that's carrying it into orbit as a service, since they don't want to give up their secrets, even to a disinterested third party. Furthermore, while Matrix security zealously protects deckers from tampering with corp files, they aren't as vigilant about deckers inserting forged personnel records. Especially if you don't even show up at their security checkpoints.
- Theroux
- Any corp that's shipping something into orbit via another corp usually agrees not to ship certain hazardous materials—and we all know corps never lie about such things. Likewise, there's no guarantee that the carrier corp won't take a peek anyway.
- Setec Astronomy
- Ares is heavy into selling and leasing pod space to non-space corps. Though they've developed the technology to get into outer space, they aren't as sophisticated in the research fields that desire zero-gravity environments (such as nanotechnology and biotech). Mitsuhamma is a big client, as is Zeta-ImpChem; both are big competitors with Novatech and Saeder-Krupp respectively, so Ares plays the quid pro quo angle with them.
- Orbital Bandit

There are also a number of independent businesses that provide supply and maintenance services to the various stations. Since there are a significant number of non-space corps working in space, someone has to provide them food, fuel and oxygen. A large number of these stations are free-floating and not connected with the major stations, which means that someone has to take a shuttle out and bring it to them. The space corps usually don't find a big enough profit margin in space catering, so there are quite a few small carriers zipping about carrying dehydrated soy and oxygen cylinders.

- Some of these suppliers can be bribed to take along extra passengers or cargo, or to at least overlook shipment anomalies. Others take their role seriously and refuse such things, unwilling to risk their rep and job security. The usual blackmail or threats will work in situations like that.
- Rocket Cab

There's also a third job that independents provide in space: salvage and scrap recovery. Over the last hundred years of space exploration there's been a lot of junk that's been put into orbit. Even now we find the occasional Soviet satellite or US booster stage floating around, and there are still quite a few dead satellites left over from the Crash. All this debris provides a real hazard to navigation, so corps will pay for us to clean up. (Recycling the used material also helps save on raw material costs too.)

- There's another type of cleanup the corps also pay for: scooping up another corp's garbage. Competition is so cut-throat up here that the corps will hire freelancers to sift through a competitor's garbage ejections in search of discarded data, discarded research elements or other meaningful clues.

- Jago

- This type of garbage-sifting also takes place down here on Earth as well, usually by desperate SINless folk. The treasure these dumpster divers are after is paydata, and even the smallest clue can be valuable. A discarded fax-zine can tell someone what you like to read, for example, and if certain articles have been clipped out, it helps narrow down your special interests. Start collecting enough of these small clues, and the big picture falls into place eventually.

- Plutarch Graogrim

So as you can see, there's a legitimate place for independents out here in space. And if indies can find legitimate work out here, then there's certainly cover for any illegitimate work as well.

JOBS

A cop contact of mine likes to say, "Where there's living, there's police work." Or, in our case, where there's living, there's shadow work. No matter where people go, they always bring their bad habits with them. And, of course, we'll be there to cash in on it.

Industrial Espionage

Hey, the corps pay you big nuyen to uncover their competitors' secrets down on the ground, right? Why wouldn't they do it up here?

The big things in space research are actually rather small: nanotechnology, microtronics, chemical engineering and biotechnology. The zero gravity is suitable for these small-scale research projects since even the slightest distortions caused by gravitational pull are undesirable. Most of these fields are pretty hot right now, so competition is fierce. Any edge the corps can get—stolen prototypes, hacked data, experiment tampering and so on—can mean the difference between an innovator and an imitator.

- The recent Probe Race provided another target of opportunity: deep space launch schedules and cargo payloads. Not only did the corps want to know where and when a competi-

tors' probe was going, but they also wanted to know how the competition planned to gather data. The same strategies now apply to corp plans to expand outward into the solar system. A rival corp might not have the same exploration plans, but they can adapt the technology for their own expeditions.

- Shardovan

Ironically, most of the corps that specialize in such small-scale technology can't get into space, and most of the corps that can get into space don't specialize in those fields (though they may dabble). Just about the only corp that has expertise in both getting into space and doing zero-g research there is Yamatetsu. Recently, however, they've allocated more assets towards deep-space exploration.

- That just means most of Yamatetsu's zero-g research is "researching" what their competitors are doing in orbit.

- Spiderhawk

Meanwhile, AresSpace focuses on engineering, aerospace designs and weapons research, while Saeder-Krupp masters manufacturing, environmental systems and communications. The only other two Big Ten corps that focus on their own zero-g research are Shiawase and Novatech. Novatech delves into microtronics while Shiawase's weightless labs are dedicated mainly to nanotechnology. Interestingly enough, Novatech has more capability than interest, while Shiawase has more interest than capability, so neither side has been able to fully exploit their assets.

Corps often engage in joint ventures; for example, corps with the capability to get into orbit sell pod or station space to the bio, nano, or micro corps that need them. Universal Omnitech is a big client, hooking up with both Shibata and Shiawase for pod space. Cross Applied Technologies has also been getting into the scene by hooking up with Saeder-Krupp, Ares' main space rival.

- These shared ventures provide a good cover for runs against either the provider or the client. Though corps jealously protect their own secrets, more often than not they aren't as vigilant at protecting the secrets of their customers. It's easy for someone to infiltrate one of these corps by posing as an employee of the other partner.

- Prime Runner

There's one other type of research going on out here that you might be interested to know about: magic research. Yes, it's well known that magic of any sort doesn't work well in space—in fact, attempts to use magic or astral space is known to drive magicians insane and can be fatal. But it's not as well known *why* it doesn't work in space. Many corps are sending magicians, usually "involuntary" recruits convicted for serious crimes, up the well to explore this phenomenon. Additionally, the manaless environment provides a "safe" zone for theoretical magicians to work on thaumaturgical designs and algorithms without having to worry about mana fluctuations that could cause dangerous backlashes.



- Recently the Sioux Nation has been sponsoring runs up the well to spy on magical research the corps (particularly Ares) are conducting in space. Though the NAN was among the first to use magic, the Anglos have been catching up and the NAN's magical edge has severely diminished.

- Horo Mana

- The Pueblo also engages in some space research as well. Most of their research focuses on microtronic developments for their computer systems, but they've also launched a few probes from orbit into the Van Allen belts for radiological studies. Apparently Novatech provides launching service for the Pueblo, as a favor for the concessions and grants within Pueblo territory, not the least of which includes hosting a delta clinic somewhere in the eastern Pueblo deserts.

- Wawaru

Smuggling

I'm sure you've all heard the expression, "Time is money." Well, in space, weight is money. Sending a kilo of goods up even into low orbit costs the corps a large bundle of nuyen, so the corps slap on a whole load of regulations about what can and can't be brought—and how much.

Of course, human nature being what it is, if people want something badly enough, someone's going to figure out how to get it to them. Because space workers miss so many creature comforts, there's a high smuggling demand out here. Not only does your regular contraband like chips and drugs go out but so do a lot of otherwise legitimate goods: soda pop, steak, fresh fruit, alcohol and so on.

- In the past, space residents used to get their contraband through connections within the corp, such as cargo loaders or shuttle crews with groundside connections. The recent Corp War messed up the smuggling pipelines, though, as the internecline fighting within Ares and Fuchi resulted in smugglers getting arrested by corp security, defecting to the other side (Novatech, Renraku or Cross) or simply forcing them to go to ground (quite literally) to avoid the heat. So with the inside connection gone, whom do desperate space residents looking for their next fix turn to? You guessed it: shadowrunners.

- Theroux

The smuggling pipeline works both ways, of course. The big commodity coming down the well is space drugs: pharmaceutical compounds produced in space. The corps take advantage of the unique conditions in space—either the low gravity environment or the near absolute zero flash-freezing temperature—to produce these chemicals, so they sell at high rates dirtside. Other space drugs are the product of biotech gone bad: astrochemists, exobiologists or genengineers producing highly stimulating (and addictive) drugs, whether out of boredom, greed or curiosity—or a whole host of other factors.



- One of the more popular brands of designer drugs going down is a little concoction called Star Dust. Star Dust is derived from the byproducts of various organisms that are flash-frozen in the vacuum of space. Depending on the skill of the biochemist producing it, Star Dust can either be a powerful stimulant, an intense hallucinogenic or a deadly poison.

- Vraxoin

- The pipeline back to Earth usually isn't as tight as the one going out. The corps are more concerned with protecting their precious little space stations from grubby little groundsiders, so they may not notice a few extra kilos going back, especially if it doesn't smell like explosives.

- Shardovan

Vice

What does an orbital technician do on his Friday nights? Space is a high-stress environment, but there aren't all that many venues for blowing off steam. Legal venues, anyway. Gambling, chips and drugs are the most popular of the forbidden fruits out here. Gambling's the biggest one; after all, the slots who work out here are really well paid for their trouble, but they don't have anywhere to spend their nuyen. And day trading gets old after a while.

- Though station regulations outlaw this sort of behavior, most station managers turn a blind eye to such goings-on. Otherwise they'd have a riot on their hand, which at worst could kill everyone on board the station and at best could result in a black mark on his performance evaluation.

- SV7

Then there's prostitution. Hey, everyone has his or her needs, right? The streetwalkers out in space aren't the same as they are down the well; most streetwalkers on Earth don't have a master's degree in aeronautical engineering, after all. In fact, a lot of the call girls and boys are independents desperate for cred or fired corp personnel who either weren't given a ticket down or somehow lost it.

- Reputation is a thorny issue in the orbital prostitution trade. Space stations are small communities and can become rather close-knit. It's hard to hide a secret up here, and this sort of reputation isn't good for one's career track. Most of the joygirls and joyboys are found on the larger stations, and they go to great pains to keep their identities secret. Sometimes they need a little help to keep it that way, like a decker erasing records or a few legbreakers to encourage johns to shut up.

- Shelly

Since space stations aren't built with extra space, every aspect of a facility's real estate is important. This means that would-be dealers, pimps and prostitutes have to improvise locations. There's no such thing as a "red light district" out here, after all, so organizers often have to move their "businesses" around regularly, depending on station traffic. Most of

the illegal activities out here take place in out of the way places: maintenance tunnels, storage pods, even on docked shuttles or lunar crawlers out on "routine" patrols.

- Speaking of shady deals, do the syndicates have any presence in space?

- Stoner

- A little, but not very much. Both the Mafia and the Yakuza reputedly have some of their made men in orbit, but you could count the number of members they have on one hand each (and don't count the little pinkies the Yaks cut off for hosing up, either). Syndicate spacers generally act as go-betweens and arrangers; they really don't have the goons around to make an offer you can't refuse.

- Gag Helfrom

Network

Network, or any kind of violence, are the least common jobs in space. Space stations survive on a delicate balance of ecosystems, and one stray bullet or ill-timed explosion could bring the whole joint down. Such widespread destruction usually invites equally devastating reprisals from the target corp, so the threat of reprisals acts as a form of mutually-assured destruction that ensures all corps keep the peace.

That's not to say that wetwork or structural hits don't happen; it's just that they take more subtle forms. Instead of bullets, hit men out here rely on sabotage to take someone down. Instead of guns and grenades, the weapons of choice up here are faulty space suits, accidental radiation leaks, poisoning, and so on.

- During the Corp War, Shibata hired a couple of legbreakers to randomly ambush technicians making spacewalks around the Apollo Station. The two paid off the traffic controller to look the other way and carried along jammers to prevent the marked slot from radioing for help. Once the mark was far from the station, they jumped him and emptied his oxygen tank, making it look like his suit had failed. This shot the accidental death rate through the roof and brought intense pressure on the station manager to cancel their current spacesuit service contract with Fuchi and switch to Shibata, which had "coincidentally" proposed a quotation just before the suits started failing.

- Hendvorssen

SECURITY AND DEFENSES

Space stations represent a very expensive investment in materiel, expertise and capital, so corps will guard them more zealously than their Earth-bound facilities. The delicate balance required to maintain a habitable environment in space limits defensive measures to the least lethal forms available.

The most effective way the corps have found to maintain security of their space assets is to do it at the source: ground-based launch facilities. Once you're past groundside security, however, the paranoia level drops significantly. The corps still



maintain security assets in space, but they carry nonlethal tools that won't punch holes in the station wall, start fires, contaminate the atmosphere, etc. Firearms are rare, except for the lightest calibers, and explosives and poison gases are strictly verboten. To make up for this, however, tasers, dart pistols and stun batons are common and space stations are absolutely loaded with electronic surveillance measures and access-restrictive defenses (security doors, nets and the like).

- In other words, weapons are an issue in space. They're hard to get and even harder to smuggle up. Tussles tend to be close and personal.

- Mano

- Actually, space security forces make extensive use of flechette ammunition. Flechettes generally can't penetrate station hulls, so they don't pose a real risk of decompression. Also, flechettes shred space suits really well, so even if the flechettes don't kill you, the oxygen loss will.

- Callio

Matrix Security

Matrix security is tight—it has to be. The Crash of '29 taught the space community some hard lessons about computer security. Spacers don't think twice about putting heavy encryption and IC on the computers that handle life support and communications.

- On the other hand, there are a lot of backdoors scattered throughout orbital computers, put there by users. The main reason is isolation; for a spacer there's nowhere to go and nothing to do when you get there. For many spacers, cyberspace is the only escape from outer space, and sometimes they don't want to bother with the hassle of jumping through security hoops.

- Dillie

- There's another Matrix defense some space stations have: time lag. Because of the vast distance between the earth and the moon there's a two-second time delay; it takes one second for a signal traveling at the speed of light to get to the moon, and it takes another second for the response to get back. In routine communications two seconds is a small nuisance, but for deckers two seconds is all the difference between life and death. Fortunately, the time lag hurts the IC as much as it hurts the deckers.

- Micro Kid

LIFE SUPPORT

Keep in mind that whenever you enter a space station, you pay an access fee that includes life support fees (unless you're an employee or an invited guest, of course). All that breathable air, light and warmth cost some corp a pretty penny to put in place, and those costs get passed on to you. Usually these fees are incorporated into your docking fees or tourist vacation plan charges, otherwise you need to maintain an

account and pay up regularly. If you fail to pay and you don't have the means to leave of your own accord, the corp can just kick you out of the airlock if they choose. Usually, though, they'll either put you to work or stick you on a shuttle ground-side and then press you into indentured servitude until you pay off the travel charges. Of course, if they pick up that you have certain useful talents, who knows what schemes they might concoct.

- Adjusting life support fee records is another booming business for deckers in space, usually commissioned by shady independents.

- Orbital Bandit

BEYOND THE BLUE SKY

Well, that's a brief rundown on what goes on out here. So now here's a quick list of where these things are going on. Space exploration and development generally cluster around five distinct "regions": low earth orbit, geosynchronous orbit, the LaGrange points, the moon and deep space.

LOW EARTH ORBIT

Low Earth Orbit, or LEO, refers to anything orbiting between 150 and 2,000 kilometers altitude. It's relatively less expensive to boost something to LEO than elsewhere in space (you can hypothetically take a suborbital plane to LEO stations), so this is where the large majority of manned space stations congregate.

There are probably almost fifty manned stations in LEO, anything from small independent space labs to Saeder-Krupp's gigantic orbital factories. Most stations here tend to fall on the small side; the interior space is about the equivalent of a large house and supports a crew of about a dozen. Some of the really small ones are no bigger than a two-room apartment and house only one or two researchers. The large majority of the corps running these small stations are non-space corps who rely on the space corps to provide transportation and logistics to these stations.

Most of these small stations aren't self-sufficient and rely on regular shuttles or drone shipments from the larger "hub" stations to resupply them with food, power, and oxygen. Though the corps could theoretically launch a suborbital from Earth up to one of these stations, they don't have any refueling or resupply capabilities, so it would be a one way trip for the suborbital.

- The hub system of resupply also provides a means of protection to these small stations as well. Since everything that goes through these small stations has to pass through the hub, the corps put most of their security and defenses on the hub. The only defense the small stations have for themselves is their isolation.

- Spandrel

Most stations tend to be built from modular component pods; only the very large stations utilize a single-body construction. The hub of these modular assemblies is a central

junction pod that also doubles as the main airlock. Shooting off from the junction pod are the various functional pods; some serve as living quarters, others serve as work areas while still others are utility pods providing power or environmental regulation.

Apollo Station

As the first station to be completely built and operated by a corp, Apollo is still active in Ares' service. After completing construction of Daedalus and Icarus, Ares moved most of its space operations off Apollo and converted it into a supply center. Now Apollo serves as a transportation hub for cargo and passengers coming up from Earth en route to the various stations in space.

Apollo's layout is typical of most large stations in operation in orbit. The main structure consists of a vertical superstructure column aligned with various functionary modules and components. Along the length of the columns are multiple airlocks, which previously attached lab modules to the main structure but now serve as docking points for spacecraft.

Three long arms branch out from the column to the habitation modules clustered at the end. The station rotates along the vertical column, and the centripetal force provides artificial gravity for the habitation clusters. (Ever since Ares converted Apollo to a commercial station, they've connected the three clusters with structural braces that support open-space elevators.)

With most of its commercial operations relocated elsewhere, Ares leases out a lot of its pod space to other corps. Mitsuhama and Zeta-ImpChem are two of the larger clients who lease workpods from Ares, but there are several others, including UCAS Data Systems and Prometheus Engineering.

- With so many corps leasing space at Apollo, the station is a mosaic of extraterritorial jurisdictions. The common areas fall under Ares jurisdiction, but space leased to other corps falls within the jurisdiction of their respective company. Something to keep in mind if you ever go out there.

- LeRoi

As a central transportation hub for stations in low orbit, Apollo also acts as an orbital town center, providing various consumer services for space workers. Workers from various low orbit stations frequently travel to Apollo for a little rest and recreation. One group of space pods serves as an orbital mall offering space adapted household goods. There are also a number of space clubs that cater to space workers.

- As the place where spacers get away, Apollo is also LEO's vice capital. Chips and drugs frequently change hands at Apollo, both ordinary chips coming out from Earth as well as designer drugs heading back Earthside. There are also a couple of "service centers" where "service technicians" assist spacers with their "special needs."

- Shelly

- The Mafia have a rep at Apollo, Lee Calder, who runs a good share of the vice at Apollo and Icarus. Though Calder is practically in charge of syndicate activities in space, he's technically a sottocapo, or assistant flunky, reporting to Don Roland Stephanopolous of the Detroit Mafia.

- Hindle

- Calder may have some competition soon. Ares leases a lot of pod space to Mitsuhama, and their Yak connections have been itching to get a piece of the orbital pie. Recently Mitsuhama transferred one of their managers, Hiyoshi Uemura, up to Apollo to manage one of their research pods in space. Uemura has ties to the Kihara-gumi Yakuza gang in Japan, so it's likely Uemura's real job in space has nothing to do with managing inventory of mealpacks, if you know what I mean.

- Uvanov

- Because Apollo is a transportation hub, many freelance shuttle pilots congregate here to find work hauling goods to and from the various space stations. Similarly, a lot of independent contractors, both the legitimate and the shady kinds, hang out at Apollo looking for work.

- Toos

Camelot Research Platform

Camelot is Novatech's (technically, Fuchi Orbital's) primary research platform, where its leading aerospace subsidiary, Walker Aerodesign, cranks out the latest and greatest in space technology. Most of the research taking place at Camelot focuses on materials science and molecular engineering: metallic and crystal lattices, polymer chains and composite material formation, all free from the subtle distortions of gravity.

- Security in and around Camelot is naturally tight, so this is one place where scavengers have really scored with the garbage sifting biz. The other corps pay well to learn from Novatech's mistakes. In the field of material science, even failures can yield useful information; competitors can find clues to deduce Novatech's line of research or they might find inspiration for new ideas. After all, this was how penicillin was developed so many years ago.

- Burke

The other major function that Camelot provides is the launch and maintenance of satellites, both within LEO and geosynchronous orbit. Novatech launches the components up from Earth to Camelot, where they perform the final assembly before sending them into their final orbit. Camelot also regularly dispatches maintenance crews to perform routine maintenance and servicing, replacing critical electronic components or re-adjusting a satellite in danger of falling back to Earth.



- Camelot is probably the only major orbital in LEO that doesn't sublet work space to other corporations. It belongs entirely to Novatech. If it weren't for the fact that Fuchi Orbit contracts logistical services for the smaller orbitals, Camelot would be completely isolated from the rest of the space community.

- Rorvik

- In the past, when Novatech was still a part of Fuchi, Camelot provided orbital services for all divisions and subsidiaries of Fuchi, even those belonging to the Yamana and Nakatomi factions. But during the civil war when Fuchi split apart, Novatech revoked the leases for its former partners and kicked them off Camelot. The split with Nakatomi's factions was particularly bitter; from what I heard, Novatech security escorted Nakatomi-affiliated employees off the station at gunpoint and jettisoned their research modules toward the sun. I've heard that Renraku, where Nakatomi now works, is offering more than the conventional salvage rate for freelancers who manage to recover any of those jettisoned modules.

- Lon

Himmelsschmiede Orbital Factory

Himmelsschmiede ("Sky Forge") is the largest of Saeder-Krupp's orbital space factories. Unlike the other corps in space, Saeder-Krupp does very little zero-gravity research. Instead, they copycat most of their competitor's designs, refining and perfecting the production processes so as to offer a higher-quality product at reduced cost. Most of their space operations focus on manufacturing, particularly in the fields of electronics, microtronics and nanotechnology.

- Though copycatting allows Saeder-Krupp to ride the coat-tails of other corps' discoveries, this often means that Saeder-Krupp has to concede the initiative to its competitors. Sometimes playing catch-up isn't enough, particularly in the more mature technologies like electronics and microtronics, where all the major engineering pitfalls have already been mapped out and can be easily avoided. So in this case Saeder-Krupp has to get the jump on its competitors, either by "appropriating" their research or by "monkeywrenching" with their tests and prototypes.

- Gretchen

Even given the assorted layouts of the larger orbital stations, Himmelsschmiede's is most unusual. Most stations usually follow some sort of radial or linear layout, with either a central hub or column and peripheral work and habitation modules branching out from the center point or line. Himmelsschmiede, however, has a rectangular base, with modules rising upwards or downwards. In a way it almost looks like a city uprooted from Earth and hurtled into the space.

Like Apollo, Himmelsschmiede subcontracts logistical and transportation arrangements for some of the smaller stations run by corps with no space assets. Unlike Apollo, though, Himmelsschmiede rarely leases out space to other corps. The

only other corp on *Himmelsschmiede* other than Saeder-Krupp is Cross, which uses some of the orbital modules for their biotechnical research.

Shibanokuji Freefall Resort

As Yamatetsu's first major orbital station, the Shibanokuji resort is also the first station launched into space for the sake of commercial recreation. As the name implies, the freefall resort specializes in zero-gravity activities: weightless squash, sensory-deprivation simsense, spacewalk tours and so on. Shibanokuji also has a suite of rooms for people to experience (ahem) intimate freefall contact. Of course, given the sheer expense of maintaining a weightless resort, only the wealthy can afford to actually partake of the pleasures offered here.

- With all that money and that vice going up to Shibanokuji, you'd think the syndicates would be all over it, but so far it's been clean. Both the Mafia and the Yakuza have tried to get people on the inside, but they'd been sniffed out and sent back to Earth. I think the Vory may make a try, though. They've got connections way inside the Russian government, and Yamatetsu shares the Svobodny launch pad with the Russkies.

- Chival

- One interesting sidenote about Shibanokuji is that it's comfortable for trolls. Most other space stations economize their space, and accommodating the occasional troll that comes up just wasn't in the budget. As a result, trolls can have a really hard time in space, squeezing through airlocks and access tunnels, or just trying to get turned around in zero G.

- Poul

In addition to zero-gravity recreation, there's one other activity going on at Shibanokuji that could net Yamatetsu some really big nuyen: zero-gravity medicine and therapy. Most of the patients for these treatments are either undergoing extensive gene-treatment or are up there for extremely invasive surgery. To promote visibility in this new field of medicine, Yamatetsu has been sending up a lot of high-profile patients, such as Combat Biker Reno Rawhide of the Cleveland Commandos, who was practically ripped in half across his stomach towards the end of the 2060 season.

- There's word that Yamatetsu is applying its zero-g medicine toward the development of a delta clinic up in Shibanokuji. Of course, they can't perform cybermancy operations out there, but they can do a lot of the preparatory surgical work before the ritual phase of the operation. And they can always perform implantation of delta-grade cyberware and cultured bioware.

- Mawdryn

Of course, all play and no work makes Yamatetsu a poor megacorp, so Yamatetsu does conduct some research and development on the side. Most of the actual work takes place on smaller work stations separate from Shibanokuji (can't have

all those nasty biotoxins infecting paying guests, after all), but Shibanokuji provides supply and transportation arrangements for them, thus keeping them close to Yamatetsu.

- Yamatetsu also provides pod space and support for fellow members of the Pacific Prosperity Group as well. Kwonsham Industries, Monobe, and Tan Tien all have orbital facilities in low orbit, leased from and supplied by Yamatetsu. Kwonsham focuses on microtronic research, while Monobe focuses on diversified biotechnical research. Tan Tien's orbital research supports its development in cybernetic interfaces and protein data storage, working mostly with zero-gravity molecular engineering.

- Li Hsen Chang

- Though Yamatetsu provides orbital support for Monobe, the two corps aren't on friendly terms. When Yamatetsu moved from Kyoto to Vladivostok, Monobe used the opportunity to swipe some of Yamatetsu's Japanese subsidiaries. Yamatetsu hasn't forgotten that, so they give Monobe the farthest and least desirable orbital stations and also charge them higher lease rates.

- Metsuke

- There's one other member of the PPG out there that Li Hsen forgot about: Wuxing. Like its fellow members, Wuxing leases orbital pods from Yamatetsu for its research. Unlike the others, however, Wuxing's orbital platform is a magic lab! Obviously, they aren't really casting magic, but rumors suggest that they're studying methods of mana cultivation and the effects of space on alchemical processes.

- Lo Fu Chee

The Spindle

The Spindle is Aztechnology's sole attempt at establishing an orbital platform. Opened in 2048, the Spindle had major problems from the get-go and had to be evacuated in 2050 following a massive systems failure. Aztechnology had to contract several suborbital carriers out of SeaTac International to get its staff off the Spindle. The small flotilla assembled, augmented by booster rockets supplied by Federated Boeing, and made three lifts into orbit to evacuate the Spindle in a record twelve hours, thus limiting casualties to only forty-eight of the more than four hundred aboard.

- It's no surprise that the Spindle has had so many problems. The other corps, particularly Ares and Saeder-Krupp, were getting edgy about Aztechnology's increasingly aggressive behavior and wanted to take them down a few notches. Is it any surprise the Spindle started to have major problems three weeks after the Ensenada strike?

- Orboff

- Possible, but doubtful. While it's true the Azzies constructed the Spindle to make a statement, their aerospace divisions really weren't up to the task, either in terms of engineering or

resources. Aztechnology was in way over their heads, but no one had the guts to tell upper management. I don't doubt that either Ares or Saeder-Krupp may have helped things along, but the Spindle was doomed to fail sooner or later.

- Pyramid Watcher

Since then Aztechnology has drastically scaled back operations, operating the Spindle at a third of its originally intended capacity. Shibata now handles most of the station operations and provides the lift up to the Spindle. Aztechnology's own work in orbit focuses on developing hydroponic agriculture techniques for growing crops in low orbit. The only other corp with significant presence on the Spindle is Universal Omnitech, which performs a portion of its zero-gravity biotechnical research there.

- Shibata has been discussing plans with Aztechnology for converting the Spindle into a commercial distribution and transportation hub, in much the same manner as Apollo. Given the substandard engineering work that went into the Spindle, however, Shibata may have their work cut out for them. Also, since Yamatetsu, Novatech and Saeder-Krupp also provide these services to one degree or another, having another player only dilutes market share, something the other corps may not appreciate.

- Proton

- Part of Aztechnology's agricultural space research is directed toward claiming a 5 million nuyen prize in Dunkelzahn's will for being the first to raise a cactus underwater and an acre of wheat in low orbit. Aztechnology's hydroponic gardens on the Spindle are the largest in orbit to date, but their total garden space is only two-thirds of an acre, and all distributed across a variety of crops, not just wheat. Also, even if they do manage to expand their capacity to one acre or more, they still have to work on growing that cactus underwater.

- Denshi

- Word out of Vancouver is that UO is very dissatisfied with the facilities at the Spindle. Aztechnology and UO have a shared partnership in several biotech projects, so UO was able to get orbital space on the Spindle at reduced rates. Unfortunately for UO, they got what they paid for. Yamatetsu has tried to entice UO away from the Spindle, or at least get the service contract for UO's smaller stations. But Shibata, another PPG member, doesn't want UO to go, since the loss of revenue would hamper their own operations at the Spindle.

- Grid Reaper

Zurich Orbital

The latest incarnation of the *Freedom* space station, Zurich-Orbital looks like a demented tinkertoy set. Numerous modular cylinders, four meters in diameter and ten meters long, make up most of Z-O's structure. They revolve around two central dodecahedral hubs, one (called the Rotunda) serv-

ing as Z-O's orbital command center, the other as the convening hall for the Corporate Court. There are also six ten-meter diameter rotunda hubs that serve as meeting halls, community living areas and communication centers.

Security at Z-O is excessively tight. Passengers can only get to Zurich-Orbital from direct orbital flights from the ground; there's no orbital-to-orbital shuttle traffic between Z-O and any of the other stations. Security screening on all passenger flights is ridiculously paranoid; ID checks incorporate fingerprint check, retinal scan, voice scan, DNA match, and even a height/weight profile! Security guards check you and your baggage with every known scanning technology, and on the ground a wage mage conducts an astral scan to make sure you're not under the influence. They even cross-check your inventory down to the gram to make sure you're not smuggling anything you're not supposed to.

- It's only half true that Z-O doesn't have orbital-to-orbital flights. While there aren't any passenger flights connecting Z-O to the other habitats, Z-O does make regular supply runs to Apollo, Shibanojuji and Icarus. On all three stations Z-O has a staffed office to handle cargo purchases and oversee loading of supplies onto the shuttles. These offices, of course, fall under Z-O extraterritoriality, so if you cause them trouble, you'll have torqued off the entire Corporate Court!

- Toos

- The security checks are intimidating, but they only roll out the full battery for first-timers and complete strangers. These checks are very time- and labor-consuming, and the orbitals do have a schedule to keep, after all. After the fourth or fifth trip up without incident, the guards only give a cursory check before waving you through.

- Baxter

Communications with Z-O passes through dedicated, glaciated uplinks. Z-O initiates, times, prearranges and heavily encrypts all outside communications, and they employ all the vanishing and teleporting SAN tricks that are known in the Matrix. Even if you did manage to find an uplink node (buried in the blackest corporate host somewhere), you'd still be looking at a minimum Red-6 host, with little time, less options and lots of IC.

Out in the vacuum of space, Z-O sports a full array of killer satellites and weapons platforms floating in near vicinity of the station, eager to eliminate any would-be threat that wanders too close. In the unlikely event that something should happen to the habitat, the station carries a number of quick-inflating, solar-shielded life-support bubbles to allow the residents to escape, floating around in the black void until a scavenger homes in on their distress beacon to bail them out.

GEOSYNCHRONOUS ORBIT

Geosynchronous orbit (abbreviated as GEO) takes place at 37,000 kilometers altitude above sea level. At this height, the speed objects need to maintain orbital velocity matches the

rotational speed of the earth. From the earth's surface it appears as if the object is hovering directly over the same point on the ground continuously, hence the term "geosynchronous."

The overwhelming majority of all objects at this height are unmanned satellites handling communications, weather monitoring, surveillance and many other applications. There are few manned space stations in GEO; it's very expensive to boost something this high. Most of the manned stations in this orbit serve as refueling and transit points for orbital craft heading out to the moon or the LaGrange points. The others attend to the satellites in GEO, performing maintenance and service work.

Icarus Station

Owned and operated by Ares Macrotechnology, the Icarus space station is the largest toroidal-wheel station in operation to date. This means the station spins and so has limited gravity (about 0.5 G) on the toroid (which diminishes as you move up the spokes to zero gravity in the center).

Opened in 2060, Icarus primarily serves as a transit point between shuttles coming up from LEO and orbital craft heading out to Daedalus and the moon. Additionally, Ares is in the process of converting part of Icarus into a recreational habitat for tourists to compete with Yamatetsu. The completion date was originally slated for the end of this year, but construction setbacks have pushed the opening date back to early 2063.

- "Construction setbacks" my hoop. Yamatetsu has been hiring runners to sabotage Icarus' construction projects because they don't want direct competition with Shibanokuji. The freefall resort cost them a large bundle of nuyen, so they need to corner the market share for the next couple of years so the whole venture can be profitable.

- Toos

- As if Yamatetsu should worry. Quality control within Ares Space is notoriously shoddy; they have the highest mortality rate from space accidents. And I'm not even including those "technical failures" caused by shadowy gremlins. If you're running against Ares, it's really easy to make something "look like an accident;" most of their stations are already accidents waiting to happen!

- Inspector 12

- There's another function that Icarus performs, though Ares doesn't like it to be advertised. Icarus also oversees and maintains the Thor shots Ares has in orbit. They don't have the authority to launch, though; approval still has to come from Detroit for that. Icarus's job is to make sure that if Damien Knight presses the big red button, those killer satellites will respond when he wants and shoots where he wants.

- Webster

- Sigh. Well, since Webster brought them up, I might as well get a head start and de-bunk some of the myths about Thor shots.

First things first; they're not nukes. Thor shots are just mass drivers that send large amounts of material (mostly space junk welded together to form one big ball of slag) down to earth with so much force that the blast effects are comparable to a nuclear airburst (but without all that nasty firestorm, radiation or EMP). Second, the corps don't have many of them; Ares has the most—no more than eight according to the CAS' ERLA. All eight are spread for equal coverage around the globe. To get them ready for a strike, Ares has to maneuver them down into LEO until they're in the right position. That means it takes several hours just to get a Thor shot lined up for shooting, so they're not at all responsive.

- Skywarp

- How many corps actually have a Thor shot?

- Montreaux

- Not all that many. Only Ares and Saeder-Krupp are confirmed to have Thor shots for sure. Fuchi used to have a couple, but after the breakup it's believed they got decommissioned (a parting gift from Shikei Nakatomi). One for sure was knocked out of orbit and is drifting toward the sun.

- Skywarp

Echo Station

The station currently known as Echo Station used to be Harris-3M's *Halo* space station before the conglomerate went under after the Crash. Though Fuchi inherited most of Harris-3M's orbital assets, they were intent on consolidating their low orbit capabilities and had written off *Halo* as unsalvageable. For about twenty years *Halo* floated silently, an empty hulk adrift in space.

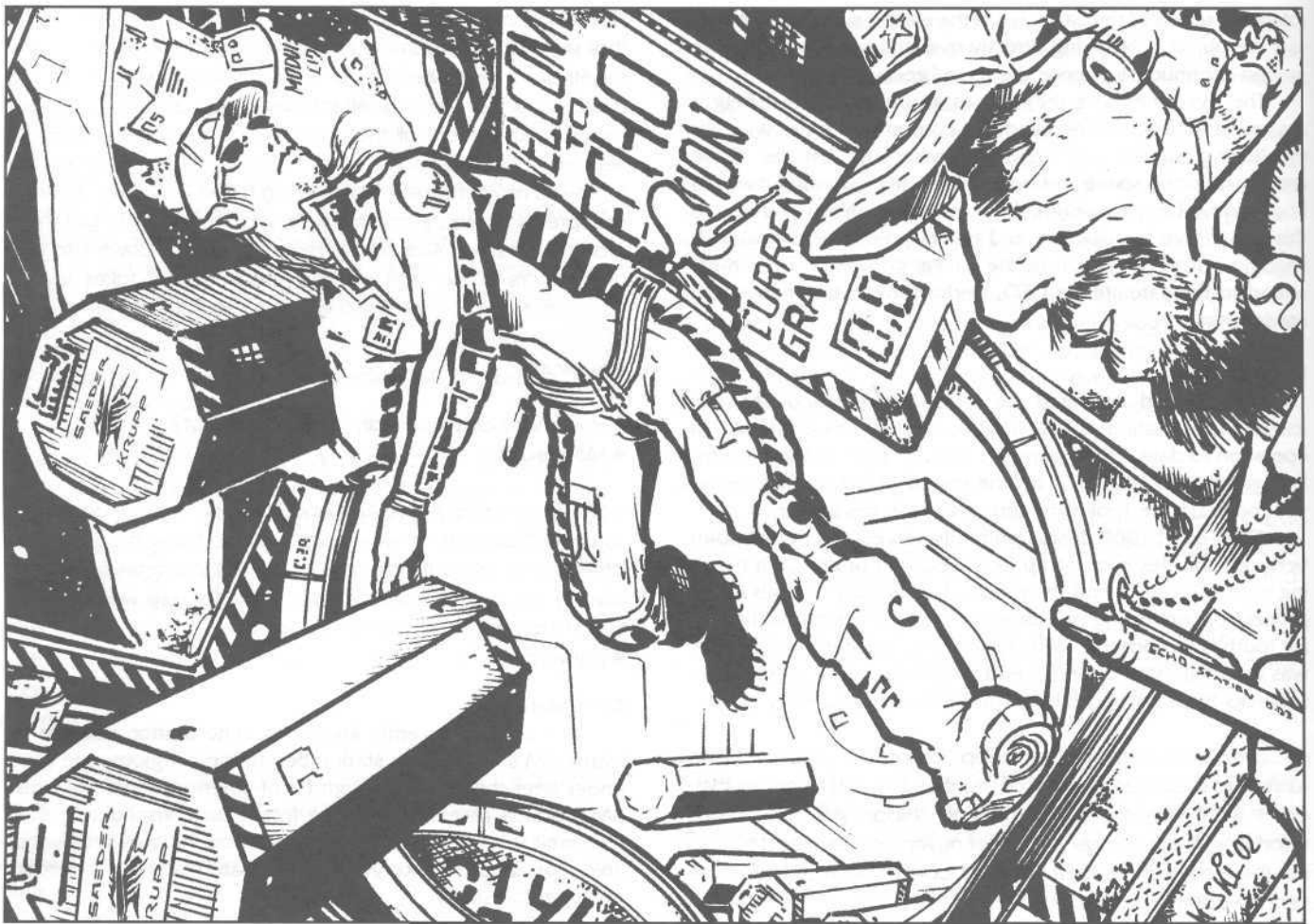
In 2054, a band of space freelancers boarded *Halo* as a neutral site to pass along some paydata they had nabbed from Camelot. They managed to get the station's life support and communications systems back on line. After passing on the goods, they struck on the idea to set up *Halo* as an independent station for freelancers. Using their payoffs from their last run and a few Earthside contacts, these freelancers reactivated the Harris-3M station, which they renamed as Echo Station.

Since then, Echo Station has grown as an independent station where freelancers can congregate and find work without fear of corporate reprisal. A lot of smuggling to and from the moon and LaGrange points passes through Echo Station, and some of the residents act as fixers, hiring space freelancers for corporate Johnsons in space. The station management takes a small cut out of all the shadowy revenue to pay for supply and upkeep.

- Sounds like an orbital version of the Free City of Kronstadt.

- Natasha

- More or less true. Unlike Kronstadt, Echo Station actually has some semblance of a central engineering staff, if for no other reason than to make sure the station stays running. Other than



that, central management tries to stay out of the factional politics that occurs throughout the station.

- Padll
- Of all the corps in space, the only one with any presence on Echo Station is Saeder-Krupp. Saeder-Krupp negotiated a deal with the station management to provide supplies and oxygen, if Echo Station would allow the Eurocorp to dock and refuel its shuttles heading out to the moon. Saeder-Krupp tends to keep to itself, so most inhabitants on Echo Station are satisfied with this arrangement.
- Shetani

The Obelisk

The Obelisk is a columnar space station belonging to the Hisato-Turner Broadcasting Corporation. Based in Atlanta and Osaka, HTB owns and operates many high-profile trid and Matrix channels, including NewsNet, Ancient Wisdom and NostalgiaVid. The Obelisk orbital station maintains the satellite constellations that HTB owns, such as NewsNet SatNet.

- HTB often gets into squabbles with other satellite constellation owners, particularly Saeder-Krupp and Ares. Every once in a while, the three hire runners to mess with the various satellite constellations they own. HTB tends to get picked on more, partly because they're smaller and partly because HTB owns NewsNet, which strikes many nerves with its holler-than-thou investigative reporting.

- Orbott
- HTB is remarkable among corps for their support of environmental issues. NewsNet in particular is fond of environmental exposés, and they don't hesitate to bring its media clout to bear on a corp caught despoiling the environment. Especially one that doesn't pay their over-inflated advertising rates.
- Icepick
- The suits at HTB are hypocrites. Not only are they selective in reporting of environmental issues, but they are also guilty of the crimes of which they accuse others. They have it coming, trust me.
- Deep Green

Silver Pinnacle (The Station House)

The Silver Pinnacle space station (commonly known among spacers as the "Station House") belongs to Trans-Orbital, a New York-based aerospace corporation. The Station House is Trans-Orbital's sole orbital station, but it performs one very important function: the launch and maintenance of satellites for companies with no space assets. Its most important clients are telecommunication companies and grid providers, such as PacRim Communications and Renraku. Additionally, Trans-Orbital maintains many other commercial satellites, such as weather and navigation constellations.

- Trans-Orbital supposedly also performs maintenance for spy satellites belonging to the CAS, Israel and the United Kingdom, though of course nobody says anything about it in public. This occasionally brings Trans-Orbital in conflict with Ares (who maintains spy satellites for the UCAS) and Shibata (who takes care of Japan's spy satellites).
- Marchand

Trans-Orbital also acts as a refueling and resupply station for spacecraft heading to the moon and LaGrange points. In the past, Trans-Orbital provided supply services to Fuchi. Those contracts carried over to Novatech when Fuchi broke up. Recently, however, Trans-Orbital also entered into a contract to provide resupply services to Proteus. (The contract had actually been signed in 2060, but Trans-Orbital kept it under wraps at Proteus' request while they were building their Treffpunkt station.) As part of their deals with Novatech and Proteus, Trans-Orbital shares some of the launch facilities at Formosa Bay and Devil's Island, respectively.

- Other than its Manhattan office and sharing launch space with Novatech and Proteus, Trans-Orbital doesn't have a lot of ground-based assets. They have a couple of aerospace factories in upstate New York near Schenectady and Syracuse as well as a development plant halfway between Topeka and Kansas City, but that's about it. Sharing launch facilities with Novatech and Proteus just barely qualifies it for A-level multinational status.
- The Scheming Dutchman

THE LAGRANGE POINTS

The LaGrange points are ideal for constructing large habitats since gravitational forces are neutralized. Expect to see more scuffling between corps that want to claim these orbital hot spots as their own.

L1: Treffpunkt Raumhafen

Treffpunkt Raumhafen is Proteus' primary space station. While the rest of the world was distracted by Proteus' unsuccessful claim for the first self-sufficient underwater arcology, the Eurocorp had been quietly sending up construction materials for building this station. When Halley's Comet started

coming into view, Proteus surprised the world by unveiling Treffpunkt Station.

- It was a good thing for Proteus that they kept it under wraps for this long. L1 is within spitting distance of the moon, so they could easily use it to stage a lunar colony. If Ares or Saeder-Krupp had gotten word of this earlier, they would have pulled out all the stops to halt Proteus in its tracks.
- Struwelpeter

Though operational for only six months, Proteus has already leased out work space on Treffpunkt to AG Chemie Europa, Transys Neuronet and ECC Eurotronics. Though they engage in some zero-gravity research and development, they also use it to conduct black research projects that they want to conceal from their competitors.

- Well, then they've certainly picked a good host. Proteus could probably teach Aztechnology a thing or two about being secretive.
- Sandmann

L2: Darkside Junction

Darkside Junction, located on the far side of the moon, is Novatech's deep space outpost. Originally construction began on it in 2055 while it was still a part of Fuchi, but it had been delayed for several years when Fuchi broke up. Novatech only resumed construction on Darkside Junction earlier this year.

Situated as it is over the dark side of the moon, Darkside Junction is intended to serve as Novatech's central hub for lunar operations. Though a work in progress, half of the station has already been completed and is already operational. Novatech has used Darkside Junction to launch several unmanned drones to the moon's surface for mining surveys. They also plan to set up an automated mining and refinery on the surface to provide raw materials for space construction projects.

- Though it's been three years since the Fuchi breakup, the repercussions are still being felt at Darkside Junction. Many of the electronics, particularly those used in the drones and slated for their automated lunar facility, were supplied by Fuchi Pan-Europa. Novatech considered tearing out those components and replacing them with in-house components, but the timetable was already way behind schedule. With the Probe Race underway, Novatech needed to see an immediate return. For the moment Novatech is continuing to buy components from Shiawase (which acquired Fuchi P-E), but Novatech technicians have been going over them with a fine-toothed comb to make sure Shiawase doesn't get a "back door" into their operations.
- Taren Capel

L3: Nerva

Nerva is one of the two space stations built by Harris-3M on the LaGrange points. While it was still operational, Nerva served as the location for many of Harris-3M's biotechnical projects. Some took advantage of the zero-gravity environment, but many believed that Harris-3M was using Nerva to conduct black projects they didn't want prying eyes to see.

When the Crash hit Harris-3M, they lost contact with Nerva for several months. When they finally did manage to re-establish contact, there was no reply, which presumably meant all aboard were lost. Before they were able to send a recovery mission to Nerva, however, Harris-3M went belly up and Fuchi bought most of its space assets. Fuchi decided to write Nerva off as a loss; sitting directly opposite from the moon in lunar orbit, Nerva offered no strategic value. And so even to this day Nerva remains a silent, lifeless hulk.

- Silent yes, but possibly not lifeless. There have been stories among some of the freelance scavengers that there may still be life aboard Nerva—and they're not talking about the crew. According to these stories, a few scavengers boarded Nerva after the Crash looking for salvage, but instead what they found were genetic monstrosities, products of Harris-3M's black projects that had escaped their confinement during the Crash, killed the crew and almost killed them. That's why no one's gone back to Nerva ever since.

- Padll

- Genetic monstrosities? Wait, let me guess: these monsters captured their victims, trapped them to the wall with sticky goo, and inserted their larvae inside, where they would tear through their victims' stomachs when they hatched. Anything else I missed from the flatvids?

- D. Bunker

L4: Daedalus

Daedalus is Ares' primary research habitat in outer space. Bigger than several hundred-thousand ton supercarriers combined together, Daedalus is the center for the large majority of Ares's research projects and orbital factories. Daedalus also acts as the main staging area for Ares's other deep space facilities, such as their Artemis lunar arcology or the Helios station in solar orbit.

- This station holds more secrets than you can imagine: ultra-secret magical research, space weapons projects, genetic experimentation. It's said that an entire section of Daedalus is populated by metahumans who have been genetically modified for zero-g habitats. Damien Knight even makes regular personal visits up here to keep an eye on his top secret projects. Scary drek, but top cred if you manage to get any paydata.

- Shrike

L5: Junkyard

The L5 LaGrange point was the site of Harris-3M's other major deep space station, Angel Station. When Harris-3M was still in business, Angel Station served as Harris-3M's central orbital factory for microtronics and material engineering. Like its other counterpart, Nerva, Angel Station was abandoned when Harris-3M went under. Fuchi chose to write it off as a loss when the corp consolidated its space operations around low orbit.

Since then, Angel Station has gotten the unflattering label of "Junkyard" by most space pilots. L5, as well as L4, are stable LaGrange points, which means that matter within the vicinity of L5 will tend to drift toward the LaGrange point. Consequently L5 has attracted a lot of space junk, most of it from the previous century, which drifted toward L5 and aggregated there.

Currently the Corporate Court is hearing a case between Novatech and Yamatetsu over Junkyard. Earlier this year Yamatetsu announced plans to build a space station at L5, but Novatech has blocked the project, claiming that rights to L5 go to them. Yamatetsu countered that since Fuchi Orbital wrote off L5 and hasn't done anything with it since acquiring Harris-3M, it's public domain. Both sides have gone to Court, and it may be a while before they sort anything out.

- Meanwhile, it's been open season for scavengers picking at the remains of Angel Station. Regardless of who wins the case, they get the rights to the pile of junk floating at L5. Both Yamatetsu and Novatech have tried to drive them off, but they've been fighting each other as much as the scavengers.

- Rorvik

THE MOON

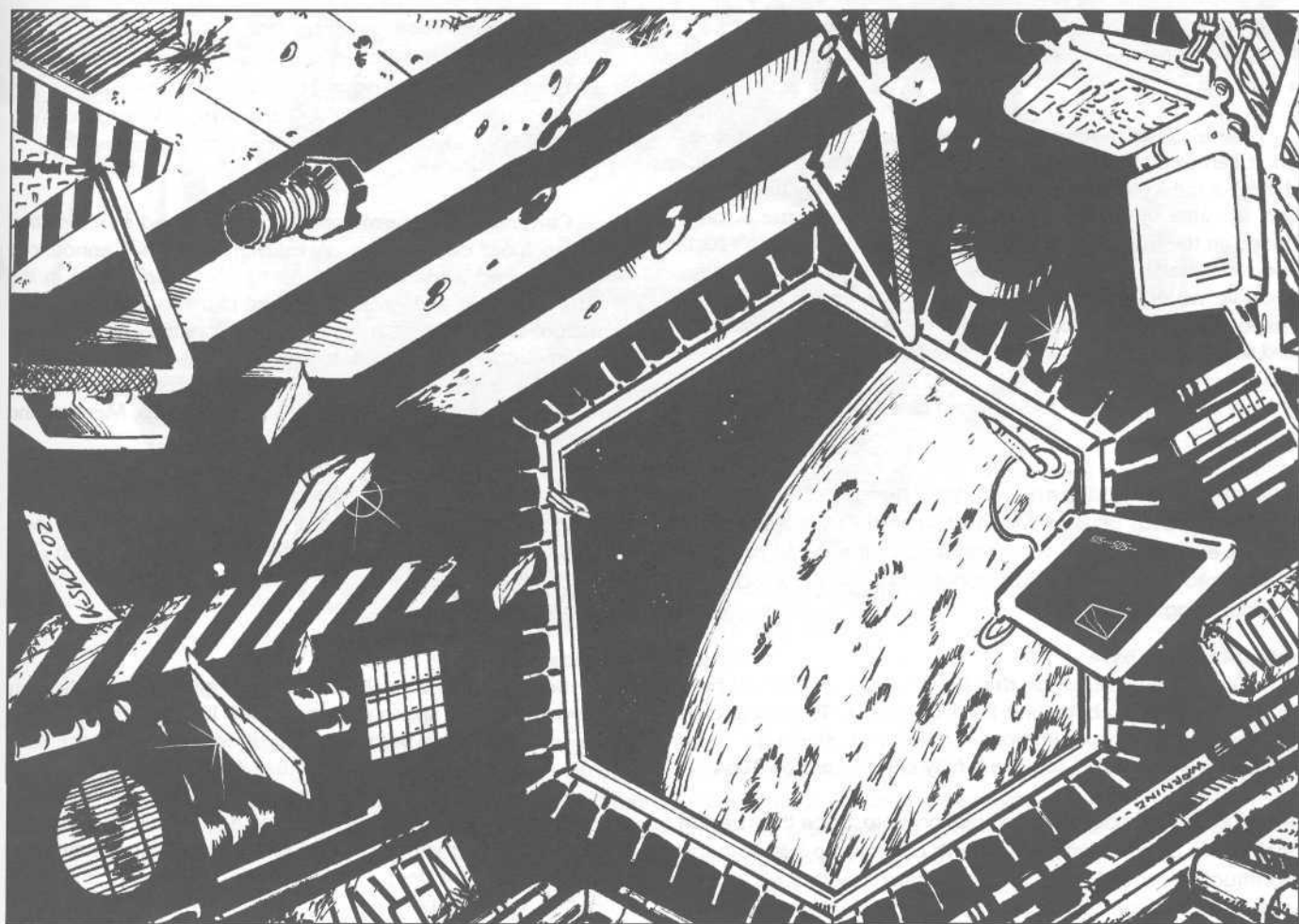
There hasn't been a lot of development on the moon since Neil Armstrong made his first small step. Saeder-Krupp set up the first lunar settlement towards the end of the 2050s, with Ares following suit in 2055. Novatech just recently got into the act, though their base is only one-third complete at this point.

Artemis Lunar Arcology

Artemis is Ares's lunar base. Situated near the original Apollo 11 landing site, the 150-person base maintains laboratories researching subjects from medicine to geology. They also engage in minor mining operations, though they are currently undertaking major surveys before establishing more thorough mining projects.

- I heard that Ares discovered orichalcum on the Moon when Halley's Comet went past. The haul was shipped back to Earth for study and refining, though someone managed to steal a good portion of it. Now there's "moon orichalcum" circulating among tallsmongers, and it's supposed to be significantly more potent for enchanting purposes.

- Tranquillity



• That's urban legend. Or rather, it's a clever marketing scheme that some tallsmongers in Atlanta cooked together.

• Eli

• Well, I don't know anything about this orichalcum stuff, but I do know that several of the mining surveyors who frequently go out on the moon's surface have reported seeing ghosts out there. There's no particular place they've seen these "ghosts," and they've never been witnessed by more than one person at a time. (In other words, the guys who saw them were all alone when they did.) Some people think they are ghosts or spirits of some sort, but some people think these guys need to go back to Earth for a vacation.

• Krivenko

• I know of one research project Ares is engaged in at Artemis: casting spells from the Earth to the Moon, and vice versa. With a good optical telescope you have line of sight—the problem

is the mana warp. Anyone know the results?

• Monty

Fernseit Lunar Station

Fernseit is the Lunar Mining Corp's (a Saeder-Krupp subsidiary) lunar colony, situated within the vicinity of the moon's polar ice caps. Fernseit's major function is resource mining on the moon's surface; calcium and titanium ores are the main minerals extracted, though surveys have also revealed traces of iron, quartz and certain rare elements.

• Fernseit is the central station, but S-K has mining operations all over the Lunar map. Some are so far away that it takes the drone convoy trains over a day to make the haul back and forth. It's also said that one of the stations is mobile and that it keeps on the dark side of the moon, away from prying eyes—in which case, it's probably not a mining station at all.

• Crescent Wrench



- Mining stations, eh? Can anyone tell me why some of S-K's Fernseit staff are experienced archaeologists, then?
- Elijah

There's also another form of mineral extraction that goes on at Fernseit: telesma extraction. It's kind of hard for a mundane like me to explain, but moon rocks apparently have some sort of value in alchemical processes. Don't get me wrong, magic on the moon is just like magic in space—it doesn't happen. I've made a couple of trips to Fernseit hauling salvage, and I've never seen any kind of magic going on there. I've talked to a couple of chummers who've also been to the moon, and they've never seen anything like spellcasting either.

- What? Magical moon rocks? What gives?
- Skeptic
- Sometimes magical formulae call for materials that can only be described as unusual. Moon rocks definitely qualify in this regard, especially when you consider that the moon has a lot of symbolic significance in just about every culture on Earth.
- Silicon Mage

Olympia Lunar Base

Construction began on this Novatech (Fuchi Orbital) base in 2061, and it's about one-third complete. The completed portion is already operational, run by a skeleton crew. Novatech is scheduled to have it fully constructed by 2064.

- I doubt they'll make that completion date. Since they began there have been a rash of accidents and system failures in the construction zones. Rumors at Echo Station say that either Ares or Proteus may be sending "deconstruction workers" to delay their schedule and run up construction costs.
- Callio

DEEP SPACE

There really haven't been all that many expeditions beyond the moon, other than unmanned probes sent out by NASA, Ares and other assorted space agencies. NASA tried to send a manned expedition to Mars in 2011, but it ended disastrously and never reached its goal. Only three of the original eight astronauts managed to make it back home.

- Huh? What about Ares's Project: Cydonia?
- Bellorophon

- Project Cydonia was an unmanned mission. From my understanding, the footage was tampered with and the project was ruled as a failure. AresSpace investigators pinned the blame on a Houston MUFON (Mutual UFO Network) organization, most of whom were killed in "random gang violence."
- Orbital Bandit

Currently there's only one known manned space station beyond lunar orbit, run by Ares. Yamatetsu has announced plans to send a manned mission to Mars some time in the middle of 2063, and Ares announced plans to send a manned mission to Europa, a moon orbiting Jupiter, around 2064. Saeder-Krupp is believed to be planning a mining survey expedition in the asteroid belt. Dozens of deep space probes are in the works, with destinations such as Pluto, Mercury and the Oort Cloud.

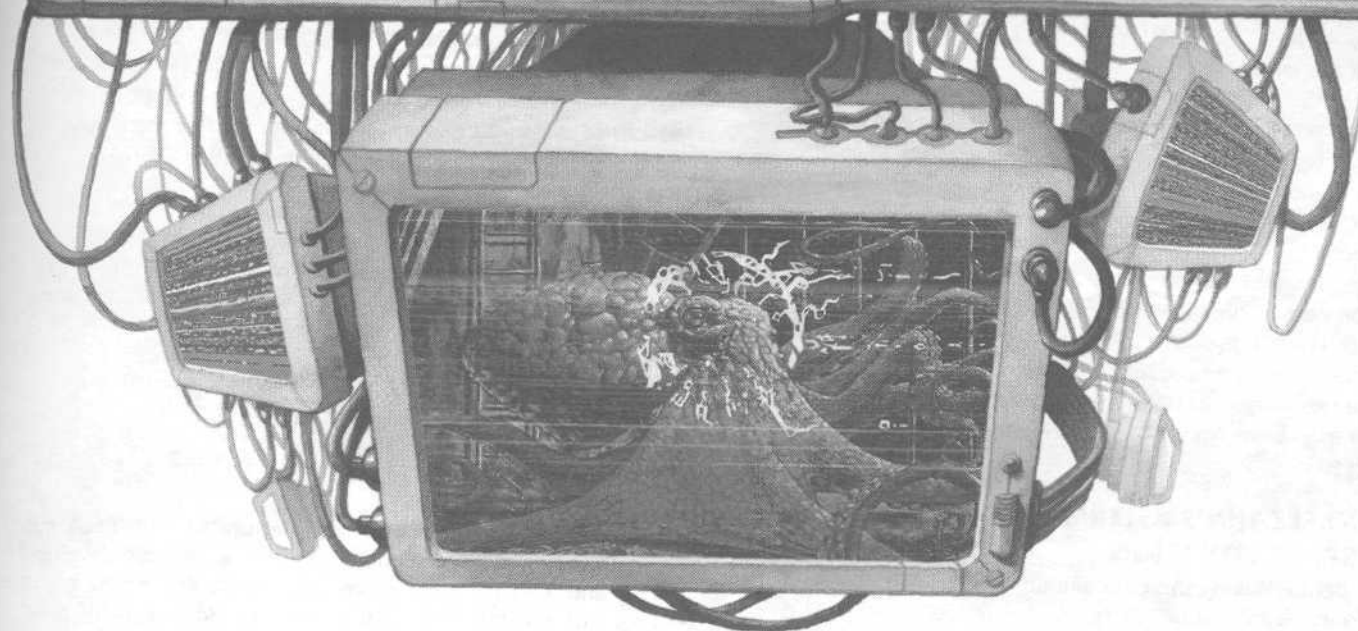
- Doesn't anyone know? Ares already has a manned station on Mars. They even have plans to terraform it. Their next manned mission is to Europa because they hope to get samples of alien lifeforms from Europa's trapped seas.
- Marvin

Helios

Belonging to Ares Macrotechnology, Helios is the only (known) manned space station beyond lunar orbit. Helios sits at a solar LaGrange point, located directly opposite the earth in its solar orbit. So far, Ares has kept this project under wraps, but from information I've garnered (mostly by buying Ares techs a few too many drinks at Apollo), Helios provides long-range observation of the solar system. It also may act as a staging area for deep space expeditions to Mars, the asteroid belt and beyond.

- And you can forget about trying any monkey business out there. Launches to Helios only depart from Daedalus, and the security they keep on those launches are as hideous as getting to Zurich-Orbital. If you've been hired to do anything with Helios, your best bet is to either mess with pre-launch operations at Daedalus or intercept returning personnel or equipment upon their return.
- Orbital Bandit

RIPTIDES



Welcome to what's becoming a regular "wet & wild" feature here at Shadowland. We've seen a lot of events rush by since I posted the previous two file collections on piracy and smuggling, respectively. Back then, Yamatetsu and Proteus AG were on everyone's lips like they were the new messiahs of the high seas. But for the past year everyone's eyes have been on space, or on the natural disasters and border conflicts that are shaking the world. Meanwhile, while no one was looking, the underwater land grab turned really interesting.

The Deep Sea is a lot like space—metahumans simply can't survive there without the proper gear. It's especially enticing to the corps, not only for the extra privacy and security, but also for the research prospects and possibilities of mining, farming or generating power.

The following info is courtesy of Big Blue, a troll decker many of us know and love. I'll let her do the talking, but needless to say, her data's sure to cause some flame wars and debate. Much has changed in the submerged domains following our spotlight on smuggler havens—and nothing for the good.

• Captain Chaos

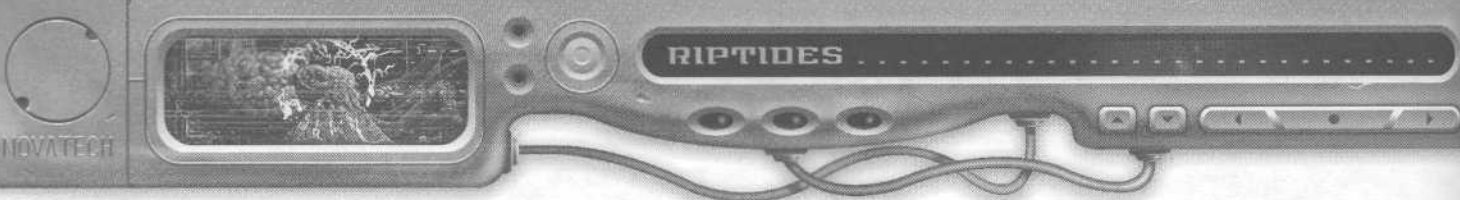
Transmitted: 16 September 2062 at 05:41:52 (PST)

by Big Blue

Some of you know me and I don't care to know the rest. Problem is, I don't like being double-crossed, so when somebody deals me a crooked hand, I bite back. Long and short of it is what you're about to read is partly to save my ass as much as it is for your benefit. The big pay-off for me is I piss off the Johnson who was supposedly outsourcing for Yamatetsu ... the one who hired me for an open-ended datasteal contract. It was mostly data-recon work, a sit-rep on various megacorps and their progress in underwater tech.

For the past few months, I did what I had to do like a good, well-paid troll. Then I discovered I wasn't actually dealing with Yamatetsu (don't ask how, I ain't telling). Someone was in business to frame me or frag me.

I'm downloading the crunchier bits of data-jacked information into this file collection to devalue whatever I've stolen and to protect myself as a "loose end." After all, Mr. Johnson, whoever the hell you really are, killing me confirms my reports. For the rest of



you fraggers, I hope you enjoy this deluge of company memos, operating journals and even reconnaissance reports talking about the other side of that great big wet mirror we know so little about. Well, you're about to learn more, so thank me later.

- Not that I'm complaining about this drekload of intelligence, Big Blue, but aren't you blasting your own foot off with a particularly big cannon? Half the companies in here aren't going to be happy you aired their dirty laundry.
- Doc

• Damned if I do, shot if I don't! Besides, the corps should be happy I didn't give full disclosure here for half the drek I pulled off their sites. Some are even offering me some shiny nuyen for what I know and to help tighten their security access. Seems safer than swimming with the sharks here.

- Big Blue

DUNKELZAHN'S AFTERMATH: CURRENT SITUATION

Before kicking this data-shindig off, I think a little refresher course is in order.

Back when the Big Wyrms went to sleep with the fishes, he threw out a five million nuyen brass ring in his will to the first corp to build a self-sustained, fully-functional, underwater aquacology. When both Yamatetsu and Proteus jumped for it, everyone suddenly noticed oceanic development was in full swing, and that somehow, supposedly second-tier corps were building secured habitats. "If they could do it," people wondered, "then why were the AAA boys and gals so quiet?" The only explanation was that they were keeping low profiles about their assets. For most of the Big Ten, Dunkelzahn's endowment wasn't worth the spotlight.

Fortunately, Yamatetsu nailed the piñata and everyone figured it was back to same old same old. After all, what earthly horizons were left to conquer? The public returned to its regularly-scheduled distractions, ignoring the seas and allowing the corps to continue their exploitation.

My datatheft spree just uncovered a new can of worms, and I'm pretty sure the corps are peeved. Not only did I compromise their key installations, but I also secured data on pivotal research projects and new tech. That said, the first piece you're about to read was courtesy of a negligent Shiawase MIFD exec who failed to encrypt her trash properly. I call them as I see them, and this was a lucky grab. Still, I don't expect Shiawase to make these mistakes often.

- That's fishy (no pun), BB. Shiawase may make those kinds of mistakes, but MIFD does not. Ichiro Kiyomoto knows his business, and his business is intelligence gathering and redirection ... which leads me to believe you found that information because he wanted somebody retrieving it. You're probably the victim of misinformation.
- Belladonna

- Give me some credit, Belladonna. I ain't wet behind the ears and I know more tricks than a circus pony. MIFD's system was heavily protected, but the trick in circumventing chaos theory encryption is stepping far enough back to see the whole picture. Chaos theory is nothing more than elaborate patterns, and the way around them is finding a mathematical savant to steer you through the loopholes. Besides, I get the contracts because I double-check my sources.

- Big Blue

Of course, I couldn't allow Shiawase to escape the spotlight either, so immediately following their report, I've appended a Yamatetsu file on Shiawase's activities. I am, after all, an equal opportunity whistleblower.

//Begin File Attachment// SHIAWASE MIFD REPORT

From: Collin Staedler

To: Ichiro Kiyomoto

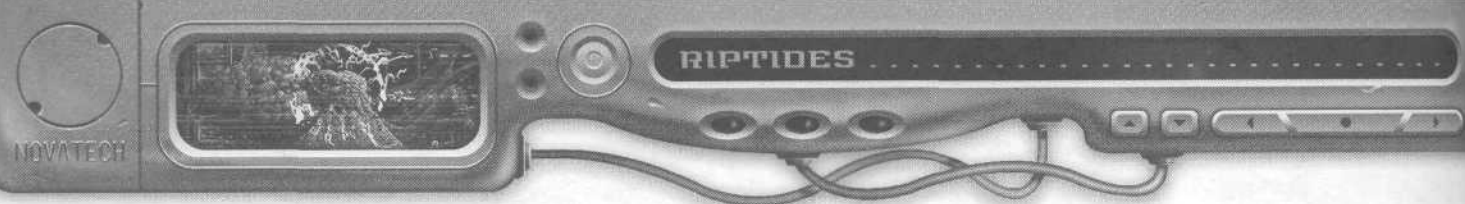
Re: Target Opportunities

Following Yamatetsu's completion of the Saotome AquaDomes, we have seen competition in oceanic development and harvesting blossom. This feasibility report highlights our greatest potential adversaries in this field, their activities once Saotome went on-line and soft-probe intelligence for new technology and magic-development projects.

Oceanic development and technology interests suffer from sporadic periods of intense activity. Many thought this was the case with the race to establish the first aquacology and the Draco Foundation endowment, but they were wrong. Over the last three decades, technology has finally allowed for proper oceanic farming at reduced operating expenses with such techniques as magnetic dredging and metalliferous mud siphoning. The public assumed the Saotome AquaDomes and Proteus AG arkoblocks were a renewed push into oceanic interests without realizing these were merely the first publicized instances. Many megacorporations were already years into undersea development; the Draco Foundation prize scramble merely brought these companies to the fore of public attention.

- Has everyone missed the fact that these aquacologies stayed hidden because they never came close to meeting the Foundation's basic parameter of "self-sufficient?" The major problem with ambient pressure environments is you can't grow crops for fresh foods (a key ingredient to self-sufficiency). Saotome, for example, uses indoor parks and crop fields to help purify the air. They're not as effective as carbon scrubbers are, but it's a psychological boon to aquacology residents who can tell the difference between recycled and natural air. Deep-ocean habitats, however, prefer multiple-pressure and exotic-gas atmospheres. Try growing crops in that environment. The other problem is that deep-sea habitats are tight on space, so the ones that are pressurized to one atmosphere don't have the luxury of creating crop fields.





Yamatetsu had it right. Build something far enough down so it doesn't break the surface, but not so deep that pressure prohibits building cost expenses.

• Metsuke

Fortunately for us, most of the attention has fallen on the shoulders of our competitors. We can expect that to change, however, and we must prepare for it. To do so requires an understanding of our competition well beyond the soft-probe intelligence data we've harvested thus far. Unfortunately, as much as Dunkelzahn's endowment unveiled the opposition, the effect was like a tide that has rushed back in to hide the beach. With the endowment settled, most corporations are running silent again. Unless we act now, it may be impossible to determine who poses the greatest threat.

We do know that all AAA corps have some involvement along the various continental shelves. Relatively shallow waters allow for easy access to mining operations through jack-up and tension-leg platforms. It's where the continental shelf drops off into the deeper plateaus that remain a concern. Any facility this far off the shoreline will be as far underwater as technology allows. Depth is currently our best security measure against pirate gangs and shadowrunners, though the risk of encountering paranormal sea life increases substantially.

Ares Macrotechnology

Ares's chief public installations are surface stations; mostly rigs scattered across the Great Lakes and down the Eastern Seaboard. Few of these installations are oriented towards mining, with the exception of a fleet of seven semi-submersible rig-refineries and their support fleet that troll the Eastern UCAS and Quebec Seaboard for oil deposits.

• Trolling? More like piracy. Without groups like the old International Seabed Mining Authority to enforce territorial rights, no corporation can claim exclusivity over any portion of the ocean. It's a free-for-all and Ares knows it. Their so-called fleet specializes in slant-drilling; they enter contested areas and pump oil from the near-virgin fields, regardless of other claims. If anyone bitches, they open fire with their heavily armed support ships "to protect their interests."

• WereGuppy

• Well, firefights and oilrigs don't make for good bedmates. Ares preys mostly on wildcatter (independent miner) platforms that can't match Ares's firepower. So they shut up and drill as fast as possible to recoup their losses.

• Yondaso

• And if anyone's interested, a group of Quebec wildcatters are tired of Ares's strong-arm tactic. They're pooling their resources to hire shadowrunners for a structure hit against the Ares fleet. Anyone want in?

• Killshark

Ares Macrotechnology instead uses heavily armed platforms to conduct high-hazard research. A key installation in this network is the Sigsbee Plain Platforms west of Florida in the deepest part of the Gulf. Under the aegis of AresSpace, Sigsbee uses the deep water to construct heavy module units for space habitats as well as to test the integrity of equipment and units through high-pressure immersion before shipping them off to Florida. Of course, there are also rumors that Sigsbee Plain mines the local seabed for oil, placing them in contention with a New Orleans-based corporation named Gulfstar.

• Gulfstar isn't even a concern for Ares. They're a small fish compared to the big shark in the Gulf of Aztlan: Aztechnology. Last I heard was some scary drek saying Aztlan (thanks to Marine Technologies and Maritech Enterprises) had a small fleet of subs "protecting" their shipments to Borinquen. One Carib pirate outfit, Les Gris Fra', tried "appropriating" the contents of an Azzie shipment, only to watch two ships fall to torpedo hits. Adding insult to injury, the survivors got savaged by a pack of megalodons. Turns out the Azzies equipped their torpedoes with explosives and highly concentrated blood-spoor that attracts megas from as far as ten clicks away.

• Wide Bertha

While Ares does not currently present a high-profile concern for Shiawase in this area, there is a 90 percent probability they are building a deep sea aquacology. A Shiawase Envirotech ship was tracking Leviathan pods along the Equatorial Current with acoustic devices when they registered a series of hydrostatic explosions in the Guiana Basin, just east of the Greater Antilles and Caribbean League. A second Shiawase ship later dropped explosives into Guiana waters for seismic soundings and came back with odd signature profiles, indicating pyramid-like structures at the bottom. We've since determined that Ares supply ships leaving from Guantanamo Bay in Cuba make a run for Guiana waters before returning. Our field observers report the ships return with a higher waterline than when they left, indicating they've dropped their cargo elsewhere.

Kvaerner-Maersk/Proteus AG

Thanks to appropriated data caches and intercepted satellite pulse fragments, we believe shipbuilding monolith Kvaerner-Maersk may have entered into contracts with Proteus AG for an exchange of services.

• This is interesting considering that Proteus normally plays its cards close to its chest, whereas Kvaerner-Maersk is looking to make a big splash media-wise.

• Pander

• Proteus is master of the redirection. Show the public the arkoblocks so they don't notice Treffpunkt Raumhafen Space Station until too late. This little coup has left the big boys wondering what new trick they have up their sleeve.

• Hoyle

Proteus AG, well known for its arkoblocks, still lags behind most first-tier corporations when it comes to ship-building technology. Meanwhile, K-M is looking to construct its first arkoblock shipyard in the North Sea without any prior experience. We suspect the contract would facilitate an exchange of scientists and engineers between the two corps to help one another develop their own technologies in-house.

- Proteus doesn't just want to build ships, they want to construct a mobile arkoblock. In order to even approach such a project, they need to call upon K-M's supertanker and war-ship-building experience.

- Titanic Panic

Mitsuhama

Initially, we believed Mitsuhama's oceanic interests were limited to Mitsuhama-Benguet Mining operations in the Sea of Japan and along the Tsimshian and Athabaskan shelf. Mitsuhama Automatronics has developed a line of deep sea exploration and work drones while subsidiary Astin Remote Systems is also developing tethered drones for subsurface-tow deep-sea mining. Supposedly the riggers control the drones from a submersible or even JIM suit, ensuring zero-hazard metahuman factor. The vehicles are still in the prototype phase and we have yet to secure operating schematics.

- Sorry Big Blue, but this data's inaccurate. The subsurface-tow-mining drones were predictable developments for the corporation's robotics division ages ago, but the report underestimated their development time. Mitsuhama-Benguet is already field-testing prototype drones on titanium-mining fields off Sri Lanka's coast, with two designs ready for mass-production. I should know, since S-K hired me to land the schematics.

- Tempestuous

A recent incident near the Cape Verde Islands off Africa's Dakar coast indicates that Mitsuhama has other projects in the works. Mitsuhama hired shadowrunners to clear out pirates from an abandoned Mitsuhama-Benguet Mining platform, then airlifted in heavy equipment and expanded the platform's base. A source we inserted on site reported that staff from Pentacle (a Mitsuhama magic research subsidiary) and Atlantean Foundation representatives were involved. She disappeared before we learned any more.

- It was my team who cleared out Mitsuhama-Benguet Mining Platform 17. Some suit paid solid nuyen for the run, but it was a bugged-fest from word-go. The so-called pirates were well-armed talksmongers, and they threw some pretty arcane drek our way. No sooner do we finish the job with two mates deeper-than-six when tentacles explode from the water on all sides of the platform. Another dead mate later and we've got a ton of kraken stew polluting the waters. We bugged out on an airlift, but not before spotting a megalodon fin cracking the waves. I've never been so soiled-in-the-pants scared in all my miserable life.

- Hoyle

- I'm not surprised. I heard growing kraken attacks forced Mitsuhama-Benguet to abandon several mining platforms off Dakar's coast.

- Thrift

- I can speculate why the AF is involved—they're looking for the Lost Continent. According to legend, that region was once called the Tritonyde Lake, though it was more like a sea. It separated Atlantis from Africa's West Coast until the continent sank and the Tritonyde became part of the Atlantic Ocean. In fact the Cape Verde Isles were reputedly part of the Lost Continent's southern mountain chain. From recent reports, that region has had no end of trouble from awakened paranimals lurking beneath the waves.

- Elijah

- I suspect they're going to have trouble from another kind of animal: Humanis. A few months back, Humanis murdered Dylan Hardbrow, a troll scholar working for the Atlantean Foundation. Dylan was working on what the Atlantean Foundation believed was the original parchment that Solon of Sais, an Athenian lawgiver, had discovered. According to Plato, Solon found this parchment concerning the original Atlantean legend before passing it on to Plato. A few months ago, a mercenary archeological dig in the Mediterranean's Levantine Basin (between Crete and Egypt) discovered the parchment perfectly preserved in a sealed amphora jug. They sold it to the Atlantean Foundation for some decent cred. When Humanis Policlub murdered Dylan, however, they stole the parchment and his research files as well. The Atlantean Foundation made copies, but they're looking for runners to retrieve the original along with Dylan's files.

- The Theosophist

- What the hell would Humanis Policlub want with maps of Atlantis?

- Sheh@sova.sc.co.uk

- It wouldn't be the first time some racist slag tried linking their cause to ancient societies. Pre-WWII Bavarians founded the Thule Gesellschaft based on a belief in the legendary North Sea island of Thule as the originators of Nordic civilization. After that, the Nazis supported archeological digs that tried proving the "German" people had evolved from a race of superior tribesmen, but everything they uncovered pointed to barbaric and possibly even cannibalistic behavior. No offense to my human friends, but I hope Humanis Policlub finds much of the same.

- Matrixide

- Atlantis wouldn't be the first pseudo-occult cause they chased. Some African Humanis groups claim Atlantis was actually the Algerian Ahaggar Peaks when the surrounding



region was supposedly the Tyconis Sea in prehistory. Another group out in India is looking for Meru, India's forgotten mountain where the Ariol race originated (Ariol as in the entomology of the word Aryan).

• Devinder

• Humanis Polclub thinks that if they prove humanity was once "perfect" in the way these various legends say, they can prove metahumans are "tainted." Tying this back to oceans, though, Humanis Polclub was shopping around for sea transport among the North Sea port-of-calls a few weeks back. Folks realized their affiliation when they insisted on all-human crews for the expeditions. Last I heard, their convoy captain betrayed them to the pirate Morgana and the Midnight Marauders out of Hamburg—who keelhauls the lot of them.

Shortly afterwards, the expedition's valuable equipment goes up for e-auction on some Hamburg site with prize water-gear and authentic maps verifying Thule's submerged location for sale. No sooner does "Item #19: Thule Maps" pop up when a private bid blows away the competition. A few deckers try tracing the signal back, but it bounces off too many ghost hosts. Finally a couple deckers hang on long enough to hit a PLTG grid with enough black sheaves to call it a night. Through some quick-thinking decrypt work, a decker chum of mine bugs out with a private name. A little more legwork and my friend ties the name to the Arcanum, a subsidiary of Saeder-Krupp. That's when someone black hammers his brains on the Matrix, then sends in a sparky for good measure.

• Tasugare

• Sorry to hear about your friend Tasugare, but you can bet Morgana got a good look at the maps as well. At the very least she would have scanned them. If she put them up for grabs, then either the maps didn't interest her, or she wiped some pertinent information from them through acid treatment or laser abrasion. Either way, the North Sea situation should be interesting with the Midnight Marauders out treasure hunting and Saeder-Krupp's ships doing the same.

• Devinder

Renraku

Shiawase would be negligent to ignore this corporation despite its recent problems. Renraku's Underwater Living suffered heavy losses following the comet's shakeup of the Philippines and the revolution that followed in the wake of the Japanese pullout. Underwater Living ran a string of submerged fisheries in the Philippines off Luzon and Negros and their 25-kilometer-squared dome city was expected to go on-line in '65.

• According to original plans, this Underwater Domed City was going to be managed by an expert system modeled on Renraku's SCIRE arcology. Following the SCIRE shutdown in Seattle, however, the Japanese Imperial Government ordered Underwater Living to stop construction until inspectors could



verify its safety. Renraku lost a year of progress, then right as they got back on track, Halley's Comet ripped the Pacific Rim apart—damaging the Underwater City.

- Renraku Fox

- I heard the Negros facility was full of illegal pesticides and fertilizers, and that the storm damage leaked some of those stockpiles, poisoning the surrounding waters.

- Sea-Green Thumb

The Imperial Governor had also contracted Renraku to build the first in a series of offshore arkoblock complexes to help the island with overcrowding.

- They claimed the Underwater City and proposed arkoblocks were "for the Filipino peoples." The general consensus, however, was that these aquacologies were nothing more than havens for the rich seeking an escape from the crowded mainland.

- Remy

- Supposedly, the reason the Imperial Government supported the project so quickly was because it included a five-star half-submerged resort hotel. This monster was supposed to house nearly 10,000 guests with top-of-the-line services and activities. It even had an artificial beach that washed through the sea-level floor of the fraggin hotel. When the drek hit the fan, though, Renraku's security teams pulled back and took up position in the partially constructed habitat (it's like a sea skeleton from what I hear, with rib-like towers breaking the surface). There's major pressure being placed on the Japanese Diet to bring the troops back to the Phillippines, and Renraku has offered the resort as a base of operation to eventually retake the islands.

- Poyo

- And they're arming the damn thing to the gills. You think the Huks are going to sit by and do nothing?

- Eager Beaver

- Even though it's incomplete, that resort is fortified like a medieval castle. Renraku calls them "storm walls" (to deflect the brunt of violent weather patterns), but storm walls don't need naval guns, ASROCs and SSAMs. Those were the first things that went up. I'm not sure the Huks have the seapower to take this place yet, especially since the last storms devastated some decent nuyen in harbored ships.

- Poyo

We have also learned that Underwater Living maintains a facility deep in the Java Trench (south of Indonesia) whose function remains unknown. A recent emergency forced the evacuation of the facility, betraying its presence. According to the rescue ship that arrived on the scene, half the survivors died from rapid ascent embolisms to the brain and heart. The

facility, located an estimated 1,500 meters down, is currently abandoned. Two Harland & Wolff submarines patrol the area, however, preventing any ships from approaching the site. This alone warrants further investigation.

Saeder-Krupp

We currently have little additional information concerning Saeder-Krupp, given its reinforced Matrix security. We've been unable to access their PLTG dedicated hosts and remain unfamiliar with their long-term goals for deep-sea exploitation. S-K already maintains two underwater training facilities for their aerospace program and dozens of mining platforms in the heavily polluted but mineral-rich Baltic Sea. With the dragon's talons already in the ocean, we must face the likelihood that Saeder-Krupp is hiding more beneath the waves than we can account for.

Yamatetsu

Over the past few years, Yamatetsu has been rising steadily in popularity and challenging the other major corporations with no signs of abating. The completion of the Saotome AquaDomes propelled Yamatetsu Asia's Mochikune Mibu to the front of his pack, earning praise from both within and outside the corporation. Though Yamatetsu has recently established a new focus on space operations, Mibu's division continues to expand, running the gamut of oceanic exploration from offshore power plants and underwater farms to deep-sea mining operations. They should remain our top concern—especially since the Draco Foundation endowment accelerated their Kuorshio Offshore Power Plant to completion, posing a threat to our own business concerns.

- This station could definitely put a crimp on Shiawase's monopoly over the regional power grid. The facility is a submerged dam west of Japan that intercepts the Kuorshio Extension current that moves up Japan's Eastern coast. The new dam supposedly draws on renewable energy source generators to divert power, the first of which uses the Kuorshio flow itself to push through the ocean vents, compressing the air pumps in the dam to fuel the gas-powered generators. The second set of generators is straightforward and uses the current's speed to propel a wall of submerged turbines.

- Metsuke

- Why doesn't Kuorshio also use wave generators like Shiawase's operation across the Tsugaru Strait?

- Alain

- Simple physics actually. The station is near the continental shelf drop point and too deep to capitalize on wave motion that barely stirs the surface. Besides, I heard the Kuorshio Dam was also an elaborate Neo-Claude Condensator and Filter system to desalinate seawater and provide Japan's coast with a steady supply of fresh water.

- Hiroshi



• I don't see how this one station could threaten Shiawase. The Kuorshio current travels over 145 kilometers a day, which is fairly impressive, but it's a trickle of energy compared to a nuclear facility. Sure, they'll nibble on Shiawase's butt and profit margin, but not enough to concern them.

• Bambi the Troll

"I dare you to laugh!"

Yamatetsu's most ambitious undertaking is their Drake Passage project, which is still in the planning stages. Their prime concern in this venture remains Aztechnology; Yamatetsu knows the Drake Passage Dam will encroach on Aztechnology's interests and fears their reprisals. Our data nets have caught information that indicates Yamatetsu is approaching shadowrunners to conduct datasteals against Aztechnology to determine that corporation's current standing.

• What's the Drake Passage?

• Devilin

• The Drake Passage rests between the southern tip of South America (Tierra del Fuego) and the Antarctic Continent. There's a three-kilometer deep Antarctic Circumpolar Current that moves 165 million tons of water per day, and pushes through the Drake Passage like a funnel. With that much power, Yamatetsu could light up South America like a burning Christmas tree. Naturally, one of their main clients would be Amazonia, assuming Yamatetsu passes the Amazonian environmental demands.

• Orkney

• Yamatetsu's asking for it on both ends with this one. Aztechnology's a bad enemy to have, but the Amazonians are a friggin' force of nature. If they don't live up to standards, we may see some gentle undines pass through their precious turbines and break all that sophisticated technology with nothing more than a thought.

• Hoodoo

• Yeah, right! Shiawase, Yamatetsu and most other underwater corps use wage mages to protect their facilities with astral and spirit barriers, polarized wards and even elemental guards. Drek, everyone knows Yamatetsu and other corps train paracriffters to patrol their waters in case of trouble. Just wait till they bioengineer Guardian Vines for water duty.

• Elothos

Yamatetsu's primary surface-related technology rests in its Vladivostok shipyards, its shallow-water mining operations and its power plants. While Yamatetsu initially concentrated its efforts on the Sea of Japan, new mobile deep-sea mining platforms have emerged across the Pacific. These facilities may be the first in a coordinated mineral harvesting push to claim the vast fields of polymetallic nodules scattered across the Pacific Ocean. Currently, the mobile platforms are

exploiting the South Honshu Ridge (south of Honshu and our own network of facilities) and the Marcus Necker Ridge to the east (a submerged ridge west of Hawaii). Satellite intelligence confirms at least three Yamatetsu platforms are siphoning the mineral-rich concentrated metalliferous muds of the East Pacific Ridge between Australia and South America.

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YAMATETSU NAVAL INTELLIGENCE REPORT

Subject: Shiawase Undersea Evaluation 2062

The last few years have seen an upturn in Shiawase ventures, especially within the European theatre. Their acquisition of Pan-Europa's infrastructure has allowed them to penetrate the Western Hemisphere market with enough presence to threaten many AA Corporations, including Proteus AG. Their largest growth-potential frontier, however, remains underwater resources, with Shiawase Atomics holding the strongest underwater presence by far. The hydroelectric and geothermal facilities scattered across the Sea of Japan's seabed make it PacRim's primary power supplier. Working in tandem with nuclear plants, these facilities protect Shiawase like a network of redundant systems. Should any one facility go off-line, the remainder handle the workload at slightly reduced efficiency to the consumer. This means Shiawase is protected from all but coordinated strikes against its facilities.

• I've heard that there's some major internal hoop-chewing going on between Shiawase Atomics and Shiawase Envirotech. Since Yamatetsu is giving them a run for their money, Atomics has been rushing into building new power plants and hydrodams, trying to capitalize on warm currents and temperature variant waters as renewable sources of energy. These new power stations are disrupting the nutrient-rich currents feeding the vast fields of phytoplankton that help keep the local ecology alive. Shiawase Envirotech is screaming at Atomic's Christopher Keratsu to slow construction down until Envirotech can help build an ecology-safe facility that doesn't hinder nutrient dispersion. Keratsu, however, ain't listening.

• Zaibatsu Sinkers

• This is exactly what Save our Seas is talking about, folks, and their argument makes sense. Phytoplankton fields have already dropped 13 percent in the last decade, and we wonder why sea-life is hostile towards metahumanity. Oceanic pollution is killing off krill, plankton and other sea-life staples. With them vanish the larger ocean creatures, leaving behind all the predators who're going to see us as the next source of food.

• Sea-Green Thumb

Subsidiary Kuroyama Minerals represents the other arm of Shiawase offshore development, though their presence and financial returns are far less than Shiawase Atomics'. Because platform mining is fiercely competitive in the mineral-rich zones of the Pacific and the North Sea, Kuroyama's slice of mineral profits grows slim. Unless they can harvest the vastly

untapped fields beyond the continental shelves and elevated ridges, or Atomic surrenders their right to mine uranium deposits in Australia and elsewhere, Kuroyama's chance of becoming Shiawase's fourth division remains unlikely.

That being said, there has been unaccounted and elevated productivity in Shiawase Biotech's aquatic divisions. While we expected some movement here, we did not anticipate this level of activity. We believe this is because Shiawase Biotech is locked in a corporate struggle with Cross Applied Technologies' biomedical division and Universal Omnitech to purchase Aquapothecary, a small corporation with offices across North America. Aquapothecary specializes in identifying the medicinal and magical properties of sea life and flora. They maintain a sizable aquatic research station (purchased from a now defunct Fuchi subsidiary) on the Cocos Ridge, off the Galapagos Islands in the Pacific. Reports that we've acquired also claim they've made breakthroughs in deciphering the language of the merrow and have brought on paranaturalist Meridith Perkins as an advisor.

- If Aquapothecary has actually managed to establish communication with the merrow, it opens up entirely new venues. Can you imagine having the merrow as your underwater eyes, or using them as operatives? Submarines and torpedoes may be faster than they are, but nothing we got is more maneuverable.

- Becker@talisman.na.cas

- Slag, what's the big 911 for a bunch of tuna posers with thumbs? So they talk in bubble; am I supposed to pause in appreciation? What in wet-hell can they do that technology can't?

- Trickle

- Both you reprobates seem to have missed the point. These creatures aren't like metahumans that emerged from humans, and they aren't trained seals. They evolved and developed within the oceans, and that means there is intelligent life in the seas. They could answer questions we haven't even asked yet, and teach us about their style of magic. The merrow, the closest sea-going mammals we have to our physiology, have also proven an excellent donor species with less than a 1.2 percent threat of rejection. I pilfered a report from Aztechnology's Genetique that states:

"Using merrow cell samples, we believe we can grow dermal plating on metahumans under controlled conditions. Using merrow gum tissue, we can dissect the samples and grow them in cultures. We then administer a trimethylamine oxide-treated protein (to allow for proper protein binding under high pressure and to protect the metahuman body from the effect of high salinity) to spur bone growth, and inject the culture into DNA-enriched hydrogel nanite packs. The packs, made from biodegradable polylactides or water-soluble polypropylene glycol gel, serves as rich-culture medium that should allow the bone tissue to grow and attach itself to

the flesh through nanite threaders. The application of hydrogel packs controls the spread of dermal bone growth."

In layman terms it means they can probably grow organic dermal plating on people that's lightweight and soluble. Hell, they might even be able to use micro-hydrogel implants along the skeletal structure to increase, strengthen or even grow new bone tissue without relying on foreign inorganic elements like plastics and metals. This may be particularly useful for bone necrosis.

- Doc

If Aquapothecary has discovered a means of communicating with these aquatic metahumans, this could turn over a new leaf in ocean development. Any corporation allied to the merrow can easily rocket past their competition and assume primacy in underwater pioneering. From bio-engineering to exploration, the possibilities are endless. We must ensure that nobody but Yamatetsu assumes this role, even if that means acquiring Aquapothecary before Cross, Shiawase or Universal Omnitech can. First, however, we must verify their claims and ensure it isn't a hoax to attract investors or a buyout.

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DIRTY POOL

Shiawase's MIFD report does a good job updating the ocean-development situation, but it still left me with large holes ... holes that I had to fill with hard data. My next research topic was underwater security and technology, but there were a million leads to track down. So I farmed out portions of my contract to runners who were willing to do my legwork. After the better part of a few months, my team put together a list of operational technology and magic developed by various corps to protect their assets.

The primo concern for any deep sea facility is its atmospheric integrity, since it presents the biggest target of opportunity. Different corps have different solutions to this problem, but the following Mitsuhamas report sums the risks up nicely. Pay attention wetrunkers, because understanding a facility's approach to atmosphere integrity opens up new avenues of attack.

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EXOTIC ATMOSPHERES AND MAGIC

From: Andy Kraskow, Team Leader for Parashield

Most underwater facilities currently suffer from an overwhelming Achilles Heel in their atmospheric pressure integrity. If a deep facility pressurizes the interior to match the exterior deep water pressure, it likely uses exotic-gases for breathing. This means most alteration spells that affect the oxygen-helium-nitrogen ratio could easily poison the entire complex before anyone can react. If the internal pressure remains below eighteen atmospheres, however, and the facility relies on standard air, rapidly increasing or decreasing the pressure will have equally devastating results on human physiology because of expanding gas bubbles or toxified oxygen. In either case, the weak link is pressure.

After extensive testing using Unit 4's resources, we've come to the conclusion that there are two viable alternatives to



this situation. The first is the simplest, but easiest to sabotage. Most modern alloys and metals are strong enough to maintain an interior of one atmosphere regardless of the exterior's ambient pressure. In this fashion, it is easier to evacuate personnel to the surface without fear of the bends, and it prevents magicians from altering the air to toxic levels. In all tests to alter sea-level pressure with spells or elementals, facilities with expert system and rigger monitored life-support systems could easily increase or decrease pressure to ensure personnel never suffer from toxicity due to the magic. Safety systems can also add specific amounts of gases to combat toxicity. Unfortunately, extensive damage to a station's infrastructure could cause it to crush like an aluminum can due to the pressure differential.

The second option is costly, but far more secure. Rather than relying on standard life-support to maintain atmospheric integrity, we can employ magicians or bound air elementals to create non-toxic, oxygenated atmospheres at any depth without worrying about toxicity or pressure differential. We maintain the facility at ambient pressure, but use barriers, elementals and transformation-manipulative spells to protect the air from magical intrusion (alongside technology to back the systems up). An on-site mage acts as environmental engineer and works in tandem with maintenance and life-support to ensure integrity. Additionally, the mage can directly counter any attacks that could potentially breach the astral barriers nearly instantly.

There is a secondary consideration to using magically altered air, and that is the problem stemming from exotic-gas atmospheres that use helium. Because helium is a better thermal conductor than nitrogen, exotic environments are much colder, and prone to condensation. This means that the equipment must be protected from moisture buildup and purchased specifically to work in exotic gas environments. By using magically affected atmospheres, however, we can improve employee moral and productivity as a side effect, and protect equipment from potential mishaps.

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MAGICAL COUNTERMEASURES

Well, magic's always been the great, big variable, and several companies are using that to their advantage. Now most facilities rely on old standards including elemental guards, wards and punch-clock mages. Others, like Ingersoll Aquaculture's research facilities in the Atlantic, use unique and perfectly viable security measures like FAB bulkheads (the structure's walls contain a dead-space filled with a nutrient-rich liquid and strain-II fluorescing astral bacteria to act as an astral barrier) or trained paracritters to patrol the exterior.

- True Big Blue, but you're forgetting FAB is only viable for sea-level environments. Most FAB bulkheads also use fluorescent sensors to detect astral forms passing through the bacterial suspension. Fluorescent sensors, however, don't function in the helium atmospheres or high-pressure environments used for ambient facilities. Likewise, FAB isn't engineered to survive beyond 10 atmospheres (I believe that's their threshold, but don't quote me on that depth).

- Zydeco

The problem with using magic to secure a facility is that there's always a better mage out there than the one you've hired (and you can bet your rival's shelling out the nuyen for her services). Case in point was that Java Trench incident that the Shiawase report mentioned earlier. Underwater Living does maintain a research base in the Java Trench to study the potential for krill harvesting. That's the official story anyway, but I heard some drek that they're actually studying carnivorous plankton (don't laugh) in the hopes of creating clouds of microscopic "piranhas." Makes sense if you want to sabotage fisheries run by other corps. Doesn't make sense if these things escape into the open ocean and run amok. Anyway, I'm meandering ... the Java Trench incident proved that no matter what magical steps you take to protect your property, somebody else is more arcane-savvy than you are. The report speaks for itself.

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Renraku Damage Assessment: Java Trench Facility Incident
From: Matsuma Hame

... with minimal damage to the facility's superstructure. The interior, however, requires a refit of the primary and secondary vital systems. Hardest hit was the environment filtration system; a quick assessment revealed that all carbon dioxide scrubbers, oxygen injectors, and adjacent systems suffered extensive damage after the pressure differential burst some water pipes. Fortunately the medical bays and bio-containment units sealed in time, preventing contamination of growth cultures and maturation tubes.

It is safe to send in structural engineers and clean-up crews to repair the facility, though we cannot guarantee their safety. The Java Facility did not suffer environmental integrity loss. The disaster was in fact arcane sabotage, engineered from an exterior source. We have constructed the following information based on internal sensors, biomonitors, life-support data and security recordings that were immediately housed in the facility's black box.

- I heard from a source that the culprits who attacked Renraku's Java Trench Facility were Mitsuhama's Research Unit 13. Mitsuhama sanctioned the attack for two reasons. First, Renraku was gaining tremendous influence in the region through their underwater ventures, and Mitsuhama wanted to stop them before they challenged its position among the islands. Secondly, Java Trench was a target of opportunity to test Unit 13's theories on affecting underwater environments.

- Navarice

- Like hell it was! I'm getting tired of everybody crediting Unit 13 for every mysterious black op that happens. Offer proof beyond hearsay or shut up! Stop bolstering their fraggin' rep.
- Night Templar

At 14:08:16 Java Time, internal sensors registered a drop in ambient pressure and rapid-motion displacement of air particles in several sectors. The facility catalogued the anomalies as multiple integrity breaches, but could not locate the

exact sectors where the hull ruptures had occurred. Safety protocols activated and shut the entire facility down in a matter of seconds. The problem, however, was that there were no actual breaches. Survivors report there were three different atmospheric anomalies within the facility that siphoned out air quicker than life-support could compensate. The occurrences manifested in the two key labs and the animal pens. Ambient pressure dropped from nine atmospheres down to three in a matter of seconds, affecting three-quarters of the personnel. The six-atmosphere plunge expanded nitrogen bubbles within their already saturated blood.

After the anomalies disappeared, life support equalized the station and lifted the emergency bulkheads. Several pipes had snapped from the sudden pressure differential and were leaking water and other fluids, adding to the confusion. The personnel believed the station was breached and flooding, so they escaped. Many who made it to the escape sub were dead before they hit the surface.

Fifteen deaths are attributed to brain embolisms after expanding nitrogen bubbles blocked their carotid arteries; another five drowned after ruptured alveoli filled their lungs with blood, while eight are blind or paralyzed thanks to spinal embolisms. They're still undergoing treatment in hyperbaric chambers, though recovery might only come after bio-regenerative treatments or implants. Only eight personnel survived the incident.

It is because someone used magic to sabotage the facility that we cannot recommend its safety. Whatever happened may happen again unless Renraku finds some way of shielding the facility from future arcane-espionage.

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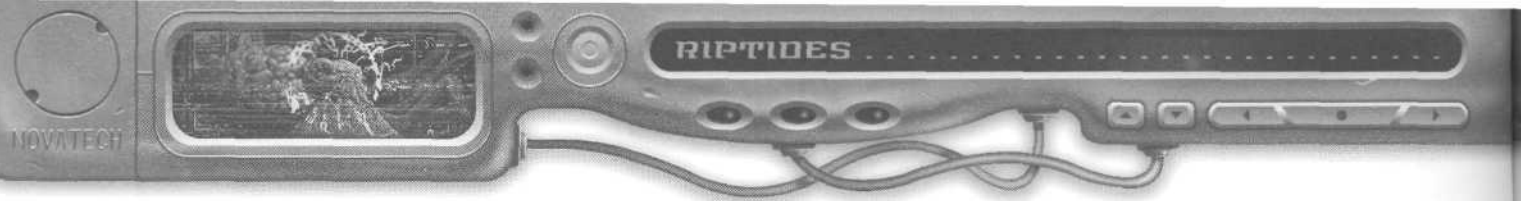
- Templar's right to be annoyed. The attack on the Renraku facility was not Unit 13's or Mitsuhama's fault. It was a successful test run for someone, and you can expect to see more of the same. Given the particulars of this incident (manifesting in the two labs and animal pens), I'd say the culprits bribed a supply boat crewmember to include three lab mice (or some other test vermin) in the next shipment, while keeping the tips of their tails or claws as DNA samples. They then coordinated the attack using three separate ritual teams in an abandoned location, pooled their efforts and used the mice-tails/claws as their material link to Java Trench. When the spell manifested, it attacked the mice who had no chance of resisting the ritual, and affected all personnel near the animal pens and laboratories.

- Orpheus

- Your information matches mine. You seem to know a lot about this situation, Orpheus. Care to say how?

- Big Blue

- I'm the one who sold the spell formula and advised the client on using it best (and the Java Trench incident followed that advice to the letter). I won't reveal any identities, but let's



just say my client wished to extract its revenge underwater where the ocean leaves few witnesses.

- Orpheus

WEAPONTECH

The major aggravation with sneaking into underwater facilities is reaching them. As part of my research, I subcontracted a few runs to make noisy approaches to deep sea stations using dog-brain drones or even, in one case, dropping depth charges filled with compressed air on the facility to scare them into acting. The resulting responses were interesting, to say the least.

Face it, any team that uses finesse to breach an installation will sneak onboard using supply vessels or low-cavitation crafts. If they're there for datatheft or personnel acquisition, they'll take the silent way in and out to avoid pursuit. It's the structure hits and sabotage contracts that require the heavy hand—and even then it's still better to sneak in. The lure of the ocean, though, is that we think we can strike from a distance and avoid getting our feet wet. Maybe that was true when torpedoes were the only bullets of the day. Now, thanks to Ares, Saeder-Krupp, Bathotech, and even JHIH's wet division, corporations are hiring imaginative engineers and scientists to form the backbone of new underwater defense technology. Many are using fuzzy-logic strategies to their designs and creating security systems that make it damn hard to get anywhere near these facilities.

- Heh, it's like Bathotech's shallow-water facility in the Bay of Bengal. Some local pirates calling themselves the Martaban Marauders decided to crash in on the research station, but they hit Bathotech's microwave emitter towers. Short-range weapon, but it boiled the divers and created enough turbulence through cold water displacement (hot water rises) to buck the accompanying sub and throw off their targeting sensors. By the time they steadied themselves, Bathotech had enough time to launch two fish and blow them out of the water.

- Grid Iron

While current trends emphasize technology over magic or bio-research (as you'll see from Ares's defense capabilities further down), you can bet the virtual farm that biotechnology will be the next big "thing." It's already started, as these next two reports indicate. The first I found floating in four different hosts. The original source is unknown, but someone either sold the same info to different parties, or the corps are datajacking the same file from one another. The second comes from Ares, who in my opinion is leading the pack in underwater defense measures.

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OLFACTORY DEFENSE

Source Unknown

Olfactory Defense is a recent chemtech development that has cleared the testing phase and is ready for approval. It is a

defense method for divers and undersea vessels to frighten off or fool hostile marine life. The principle behind this measure is simple. Hydrogel is stored in thermal containers or even skin flap pouches (like a venom sac) since body heat is enough to keep it in gel form or hydrophobic (repelling water). Once released into the colder water, however, the hydrogel reverts to a liquid state and alters properties, becoming hydrodegradable. This in itself is not unusual, but the hydrogel is in fact a vector, able to carry and keep any number of bioactive agents alive and thriving like portable culture cells. The simplest components hydrogel carries are both trimethylamine and trimethylamine oxide, both of which are responsible for a fish's smell (in addition to other properties). By bioengineering TMA and TMAO to match the specific scent properties exhibited by various aquatic creatures, and controlling its release through the thermal pack, we can disguise a diver's scent from creatures such as megalodons. Additionally, we can equip drones to act as decoys in high-threat areas.

- Damn, I wouldn't be surprised if Aztechnology was using this for their "blood torpedoes."

- Sirraught

- The applications are actually far wider. Universal Omnitech's on the verge of licensing a line of hydrogel packs to "paint" the enemy. They include smells to drive larger sea creatures into a blood-frenzy, tracking spoors so domesticated paracritters can follow vessels back to their base of operations, drugs to inhibit animal ferocity, etc. Gaeatronics' facility north of Molokai, Hawaii uses hydrogel packs attached to dolphins to patrol the local ocean and spread non-toxic chemicals into the water. The chemicals are addictive to specific species, and they keep three or four domesticated kraken in the area, protecting the facility. Don't ask me how they trained them, but I heard they got the kraken to distinguish between Gaeatronics's ships and other vessels by the smell of their paint job.

- Doc

- Just a quick aside on dolphins (thanks for the reminder, Doc). Many shallow water facilities are now using a passive alarm web involving acoustic transponders. The transponder's only function is to sound a series of loud pings when they hear a specific frequency (which in turn alerts the nearby base of potential trouble). The frequency trigger, however, is a dolphin chirp. Explorers discovered this trick when they used multiple transponders to triangulate the position of exploration vessels. Dolphins were excellent mimics, and learned to imitate the frequency that triggered the transponder's response. Since then, corps have trained dolphins to act as their eyes and ears in the ocean. If the domesticated dolphin spots a predator, vessel or diver, it chirps at a specified frequency that activates local transponders and warns the base.

- Big Blue



Another technique is to keep a small colony of toxic algae (responsible for phenomena like the poisonous Red Tide) active within the hydrogel. Once released in the water, the phytoplankton contaminates the water with traces of neurotoxin; not enough to harm the diver, but enough to frighten predators off. We're currently using dinoflagellates of the order *Alexandrium tamarense* (which generate deadly poisons when eaten) to ward away other fish. A potential offshoot of this technique is to use *Chertoceros*, a species with a serrated body that lodges in gill membranes and acts as an irritant. The gill produces mucous and eventually suffocates the animal by inhibiting its ability to extract oxygen from the water. Initially this might serve to drive the troublesome marine animal off, but it could also proactively protect future divers from the same creature.

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ARES TRIDENT REPORT: HYDROWEAPONS

From: Viktor Eli, Project Leader, Ares Arms

Mines, depth charges and torpedoes. These are the swords of our twentieth century predecessors. In light of increased threats to our alpha-level underwater facilities, however, we can no longer rely on these archaic methods. It

is time to implement new defensive protocols based on research conducted at Ares Arms' Trident Aquacology in the Guiana Basin. Of the projects currently under review, we deemed the following of the highest potential.

- FYI, I edited this list of weapons, only including those that my allies managed to verify actually existed and were not just planted information. That being said, the larger list of weapons included technology I couldn't confirm was real or which was still on the drawing board. The nastiest was nanite juicer needle guns (pilfered tech from some sort of "bee" drones used in the Renraku Arcology, Ares calls them Universal Disassemblers) that are hidden in airlock vents and that shoot anyone who enters a facility illegally. Once injected, the juicers cut apart adversaries from the inside. Other favorites were caterpillar-drive torpedoes coated with ruthenium polymers to make them completely invisible to visual or acoustic sensors and gel mines that coagulated the water around the explosion into a thick substance (gumming up the ship propellers, vents and sensors). What you see here is just the tip of the IC-berg.

- Big Blue



Hydrostatic Pulse Bafflers

This is a purely defensive weapon, usable as a short-range deterrent for ships penetrating our own torpedo safety-minimums. The HPB is a reinforced cannon that detonates a chemical charge in the barrel while forcing out the flooded chamber with an air blast. Reinforced bafflers around the cannon's lip shunts and directs the concussive blast towards the enemy sub and away from the facility. While the range is admittedly limited, it does damage any nearby vessels and will deafen their sensors and hydrophone operators.

Snake-Spine Whips

The feasibility of creating open air, hydraulic tentacles proved difficult initially because the devices lacked a proper support structure to make them truly autonomous. At best they were glorified and costly flails. AresSpace, however, realized that both vacuum and water could offer enough resistance and support to give the tentacles controlled movement.

The tentacles are called snake spines because like a snake, each segment has overlapping and interlocking "arms" that prevent the chain from over-contorting its frame and twist-squeezing the bio-neural bundles. Additionally, each segment contains a layer of syntactic foam, a material that cannot be crushed because it's saturated with hollow glass microspheres capable of withstanding excessive pressures. Fifty pounds of syntactic foam can also support a ton of submerged weight. This way, the tentacles have the added advantage of being neutrally buoyant. Thus they can be of any length because the water, and not the tentacle's infrastructure and hydraulics, supports the weight.

We can equip facilities with 100-meter tentacles on a spool to deal with incoming divers and even vessels. The tentacles are strong enough to entangle divers and most fish, but not vessels. Conversely, conductive rings covering the tentacle can kill metahumans and fish through electric pulses, and fry a ship's onboard systems through the hull (not to mention stunning or even killing the crew). We can equip other tentacles with hull-cutters and drills, and even cover the segments with mini-chainsaw rotor blades.

- Buddha on a diet! Suddenly shadowliving don't seem that fun to me.
- Kriekor

- Yeah, but I wouldn't want to be in that facility after the megalodons smell the blood and frenzy over their heads. Ingenious little weapon, but they should find some way of neutralizing the blood in the water.
- Saladin 13

Screaming Mimi

This intelligent ambush mine lies hidden on the seabed floor (when deposited from a ship, it uses tiny thrusters after it lands to disturb the surrounding sediment and cover itself). It then employs passive sonar to detect large-scale water displacement from moving ships and creatures (obviously veri-

fying the target's signature to ensure it isn't a pod of whales). Once something large enters its range, it calculates the enemy's intended course and waits for when it is closest. It then activates a built-in propulsion system that sends the mimi rocketing toward the target. Rather than detonating, the mimi attaches itself to the ship's hull or creature's flank and generates a series of overlapping pressure pulses between 10 and 60,000 hertz directly against the surface. The rapidly oscillating pressure pulses erupt as a form of white noise that drives ocean creatures away. On a ship, however, the sound travels along the hull's entirety and echoes throughout the interior. In addition to scrambling acoustic sensors, it agitates the canal fluid of a metahuman's inner ear through confusing signals that target the sensory cell wave hairs. This induces confusion, dizziness and nausea, thus rendering the crew inoperative. Additionally, the mimi's scream serves as an early-warning signal and allows the facility to target the vessel's location.

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UNDERWATER INSTALLATIONS

Well chummers, here's what everyone's been eager to read—underwater facilities and specifically, who has what. The ones I've discussed are the ones you don't know about, or those that didn't earn much attention. We already know about Proteus' arkoblocks and Yamatetsu's aquacologies. There's more out there, though, and these facilities are just the tip of the credstick.

- Impel and I were discussing the logistics and safety of various installations, and realized there wasn't a single one we'd want to live in aside from mining platforms. Now I'll admit that from a company standpoint, rigs are cheaper to manufacture because you can rely on standard, tried and true engineering techniques and not worry about the integrity of the platform's atmosphere. My biggest problem, though, is that they're open targets for anyone with a raff. Sure, some platforms are defensible; they have to be given they're the biggest targets out there. Not only that, but they're also easily sabotaged below the waterline. Secondly, because they're relatively cheap to manufacture compared to other enterprises out there, corps normally abandon them when they've dried up. It's a waste of resources and it pollutes the ocean.
- Zydeco

- What about arkoblocks then?
- Slim Chance

- I'll take the pros on this one. Arkoblocks are the most viable habitats because they break the waterline. That way you can keep the entire facility at one atmosphere, allowing people to go topside to enjoy sunlight at their leisure. Proteus, for example, built several dome-enclosed rooftop gardens for their employees, cutting down on clinical depression and providing



fresh, non-recycled air. Below the surface, huge polyacrylic bay windows provide a scenic view of the artificially lit exterior. It's like living in a giant aquarium.

- Impel
- Yeah, only you're the fish. Most shallow-water stations use them because it makes their employees happy. The problem is that polyacrylic is so damn clear that you can also see the bright shiny lights coming from the windows if you're outside. It's like a Christmas tree for fish, and we know how much kraken like light. Proteus may pat themselves on the back for their accomplishments, but they haven't told the media about the storm dolphin attacks. Polyacrylic and other shallow-water habitat windows may be strong, but they're still "standard issue." That makes them the weak link in an arkoblock's armor.

- Zydeco
- What about completely submerged facilities then, the ones lying too far down for most pirates to reach?
- Ballast

- To start with, they're expensive as hell to make. The costs to fashion pressure-resistant materials alone are enough to sink most companies. For argument's sake though, let's say a company can afford the nuyen to build and staff these facilities properly. You've now got several considerations to make and the first is, is it an ambient or a one-atmosphere pressure facility. Ambient facilities are a pain because most are so far down they require an exotic-gas environment ranging from the standards like nitrox, heliox and trimix, or the truly bizarre neon and argon mixes. That means some electronic components and power sources have to be custom-made, checked or fitted because of condensation and because elements like helium have different properties than oxygen. Notice how some ambient-level habitats have few, if any cyber-implemented employees? There's a reason for it. Helium, for example, plays havoc with cybernetic ears, kicking up the rate of infection and the threat of equipment failure. Hell, even just normal pressure can damage equipment through squeeze. The body is full of empty cavities, so what happens when you descend? Gas volume shrinks, and air pockets in your body contract along with them. I've heard of datajack components snapping and cybereyes cracking because of pressure. If you can afford alphasware, then you're laughing because that drek's built to outlast your children. If you're going standard, though, better check your equipment before running those ambient pressure facilities.

- Zydeco
- Not to mention all the regular problems with deep pressure environments like nitrogen narcosis, bone necrosis, etc. Because nitrox uses a 36 to 64 percent oxygen to nitrogen ratio to circumvent nitrogen narcosis and lessen the chance

of the bends, it's useless below five atmospheres because of oxygen toxicity. Heliox is only good up to 200 meters, after which you've got high pressure nervous syndrome to worry about, not to mention helium's thermal conductivity is six times greater than nitrogen (and the damn high-pitched voice that requires you to wear vocal unscramblers). After that, you're left with trimix and some military-grade gases. The problem with those is they increase the duration of decompression. After serving in an ambient pressure facility, would you like to spend a week in a hyperbaric chamber just so you don't rupture every blood vessel in your body?

- Impel
- Which brings me to the lesser of two evils, one atmosphere facilities. Now you're talking one serious skeleton and skin to withstand the pressure differentials, but it can be done. Should it be though? Deep pressure with one-atmosphere facilities is a zero-mistake tolerance environment. One crack in the hull, and the whole operation folds because the entire ocean's pushing to get in. Most places are trying a variety of engineering techniques, but the smartest ones follow pyramid or spherical designs because they use equal-pressure distribution to their advantage. I heard Saotome AquaDomes, the best example of a one-atmosphere environment, uses a technique called pressure lattice scales. Essentially, the dome's overlapping plates or scales have enough give that the more pressure the ocean exerts against them, the harder the plates push against the under-scales, thus creating a water-tight seal.
- Zydeco

ARBORITECH VANGUARD STATION (SHIAWASE)
Habitat Type: Mobile
Location: Varies but currently the Catham Rise east of New Zealand
Project Director: Dr. Madonna Iko
Facility Function: Mobile Aquaculture Research Station
Personnel: 30

Shiawase is up to its ears with facilities and agendas, but something about their Arboritech Vanguard project spoke to me. It's purely research oriented and one of the few subsidiaries anywhere that earned a nod of respect from Save Our Seas. Owned by Shiawase Envirotech, Vanguard Station represents the best in the division's gung-ho attitude to protect the oceans, and Shiawase's proud of the project because it looks good for public relations.

Vanguard is also safe by virtue of its size and available technology. It's nearly impossible to attack her without destroying the entire complex, and there's no state-of-the-art tech to attract pirates. It's safe by being innocuous.

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Arboritech Vanguard Station Prospectus
Arboritech Vanguard Station is property of Shiawase Corporation, in cooperation with subsidiary Imperial Tech



Services. Shiawase purchased this fully transportable and modular underwater facility from the Japanese Navy. After Hephaestus Technologies tested the facility's infrastructure, Vanguard Station was refitted for defensive capabilities at Shiawase Armament shipyards. While the facility's technology is "old" by conventional standards, it still uses viable, easily improved hardware given its modular nature. Engineers can transport the facility anywhere in the world and have it ready for operations within two weeks.

Vanguard Station is an old-style facility comprised of six cylindrical and modular sections. It is capable of operating at any depth, though the interior is pressurized up to ten atmospheres using a nitrox-derived environment. While current technology permits the creation of angular-shaped buildings, spheres and cylinders possess the dual advantage of having equal-pressure distribution over every inch of the hull (therefore there are no weak points), as well as preventing bacterial and algae growth from hiding in nooks and crannies.

- You should have heard the stink metahuman activist groups raised when they learned Arboritech was only assigning humans to this project. Shiawase claimed group dynamics and cited studies, but the whole thing smacked of racism.
- Metahumanis

- If you're going to gripe, then don't give half facts. They only employed female humans because we adapt better to high-pressure situations, our air and resource consumption is less, and we operate better in confined spaces (as women, not humans). To put it simply, we don't have this testosterone-driven need for personal space that men exhibit, meaning it's less likely we'll crack in places like Vanguard. Comprehensive studies over the last century proved this time and time again. I also agree with their decision to use one metahuman species, because of familiarity and comfort levels. Besides, do you really think orcs, elves and trolls will be comfortable in a place barely big enough for a human? The next facility is in cooperation with various activist groups, and not only built to handle metahuman frames, but the crew is entirely made up of non-human species.

- Valkyrie

Each facility cylinder or section serves a specific purpose. The first cylinder is the airlock, docking and maintenance facilities. It also holds a pressurization chamber to acclimate visitors to Vanguard and to lower gas saturation in the blood for anyone traveling to the surface. The second cylinder contains the station's heart: its life support systems, generators, and supply rooms. Adjacent to it and the docking facilities are crew habitats and recreational facilities. After that is the control operation and medical bay cylinder, the laboratories and research station cylinder, and finally sample and documentation cold storage. While the accommodations are narrow, a surface vessel accompanies Vanguard for weekly retrieval of acquired data and as an emergency lifeline and available "resort spa." Vanguard's

crew earns three weeks every two months for fresh air, medical checkups and psychological evaluations.

Serving Arboritech in the role of aquaculture research, Vanguard's tour of duty is six months to one year. During this time, the onsite researchers study the ecosystem of various locales through the four seasons (with approval of local governments since they operate on the continental shelf), as well as monitoring the impact of regional pollution. Additionally, they procure genetic samples from endangered plant and animal life in the hopes of protecting the species from eventual extinction. Due to the station's excellent service record, Arboritech has received enough funds from Shiawase Envirotech to build two similar state-of-the-art mobile facilities.

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ARES TRIDENT AQUACOLOGY

Habitat Type: Research Aquacology

Location: Guiana Basin, east of the Greater Antilles and Caribbean Sea

Project Director: Fortuna Dey

Facility Function: Oceanic Weapon Development

Personnel: 3,000

Ares pulled out all the stops on this base, turning her into an underwater fortress. What surprises me, though, is that when Ares was building this place, nobody in the Caribbean League noticed the fleet of ships dropping supplies in their backyard. This means Ares either bribed folks to look the other way, or more likely, they built this place slowly. One trick I know they used for sure was to coincide major shipments of parts and building sections with the launches in Florida (Proteus would be proud). While folks wondered what Ares was sending up next, they never saw what they were dropping below.

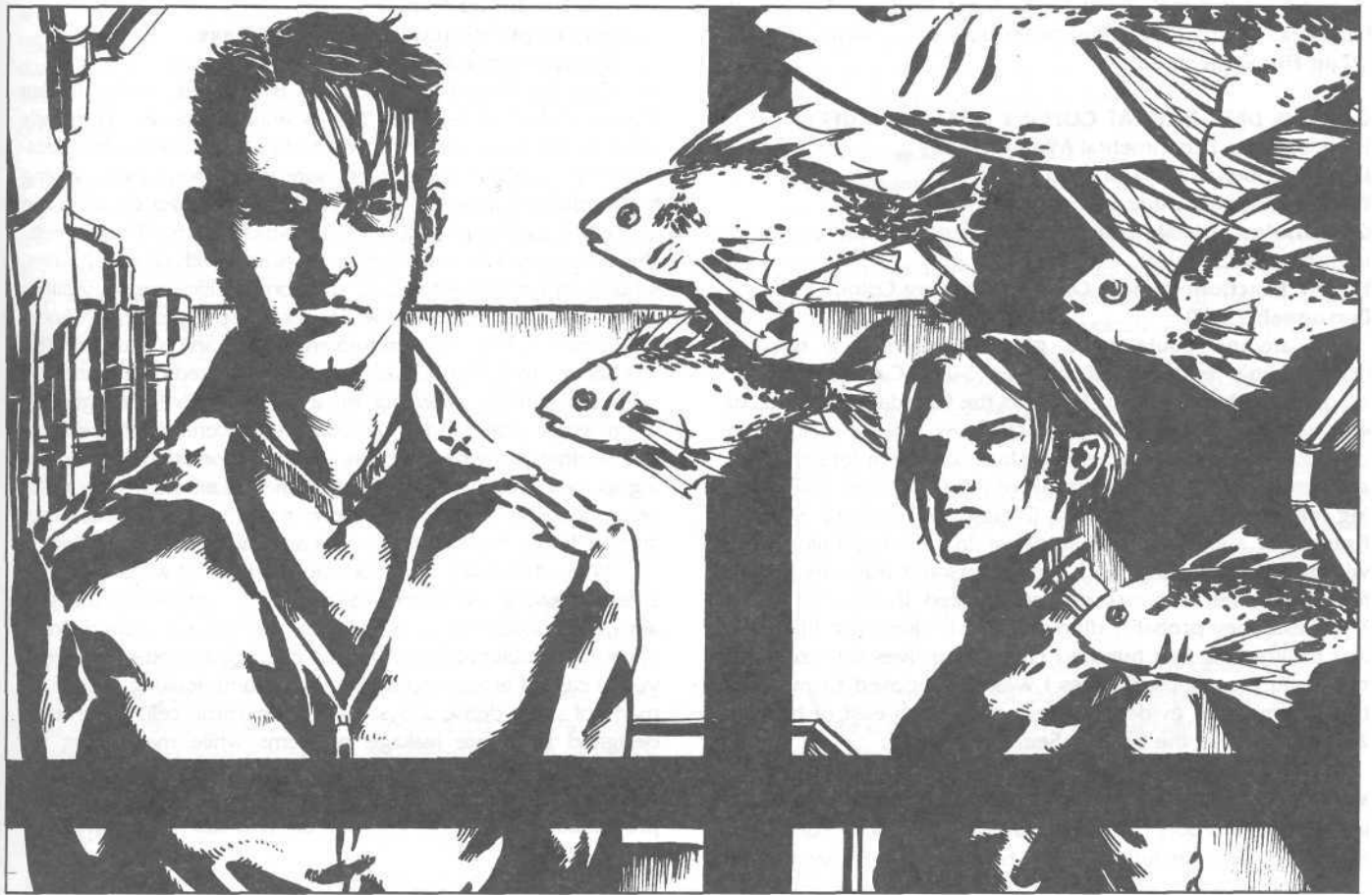
The Trident Aquacology is the largest military installation/R&D complex currently below the waves. If there's any new wet-tech being developed by Ares, you can bet it's being done there. In addition to developing underwater technology and weapons, rumor has it Ares trains some Knight Errant Firewatch teams in Trident ... and why not? Trident is an ambient pressure facility that taxes its personnel mentally and physically. Everyone there is in prime shape thanks to Ares's regimented employee physical training program, and the base is run with clockwork efficiency.

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Source Unknown

Hey [name deleted],

Take a gander at this, it might interest you. I recently intercepted a Shiawase encoded transmission from a sounding ship in the Atlantic out to Osaka headquarters confirming a possible base in the Guiana Basin. After a couple of weeks of trolling the region, I encountered a transmission buoy coming up from the deep for a satellite link-up. I managed to tap the data pulse and rode it all the way home to Ares Macrotechnology. They've got an aquacology called Trident, and there's some weird dreck going on down there. Here's what I retrieved before the satellite link ended.



- This brings up a major problem with running datathefts against these facilities. Most of them aren't even connected to local networks, but that doesn't mean they aren't vulnerable. None of these facilities can survive without some contact with the outside world. That means they'll either rely on burst transmissions to corp satellites using signal buoys like Ares here, or they'll use a dedicated cable line tied directly to the corp's PLTG. If you want to break into underwater facilities through the Matrix, either piggy-back on their satellites or break into the central host and locate the backdoor link from there.

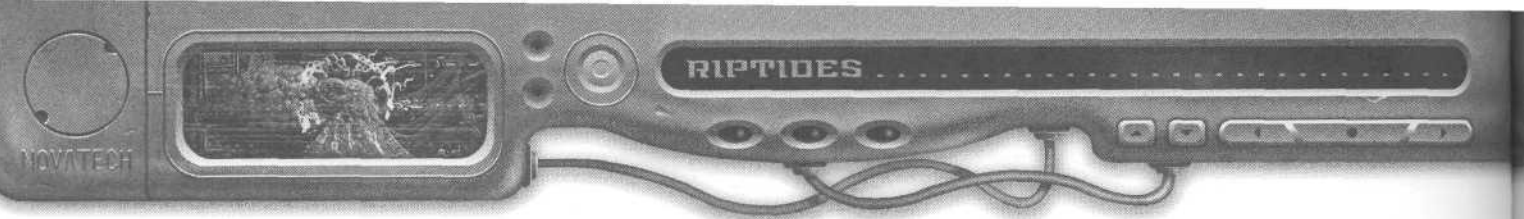
- Grid Reaper

Ares Trident aquacology predates Yamatetsu's Saotome AquaDomes by a good two years. They never bothered going for the five-million nuyen prize because they didn't want land lubbers figuring out they were down there (and they're not viable under the self-sufficient clause). Now, calling Trident an aquacology is like calling a tank a car. The facility is more like a top-notch military grade compound. Knight Errant's elite handles internal security—Damien Knight just can't seem to get enough of those boys. The reason for KE's presence is because Ares Arms carries out some high-grade testing of miltech. What Shiawase's ship heard was field-testing for the facility's now on-line Hydrostatic Pulse Cannons.

Trident consists of three major buildings all dolled up like Egyptian-style pyramids and all interconnected. Each tops off at 70 stories. The first 10 are high-ceiling work bays and the mechanical guts of the station including power generators, massive air filtration units and at least two redundant systems for every vital operation mechanism. The next 20 floors are work areas, research labs and weapon development. Five stories of dead space rest between the weapon research floors and the sections above and below. In actuality these floors contain a variety of explosive-retardant materials including kinetic gel inhibitors to lessen the severity of lab accidents on the adjoining sections (life support and the habitat levels).

After the labs are 30 floors for the residential flats and living districts including small plazas and entertainment arcades complete with "entertainers" (gotta love Ares). The remaining floors seem to be offices and standard facility drek for running the base.

The facility superstructure appears to be titanium-based alloy with mixed percentages of aluminum, vanadium and a drek load of other metals. The exact sequence is still vaulted behind a really big door and some nasty-looking IC constructs, but I did learn that molecular-metallurgists engineered the alloy into a complex latticework from the elec-



trons up. Unfortunately, that's all I got for now. I'm going back in later when the buoy comes back up ... wish me luck.
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CADMUS DEEP-HABITAT COLONY (SAEDER-KRUPP)

Habitat Type: Experimental Mining Colony

Location: Iberian Abyssal Plain

Project Director: Uther Blue-Tongue

Corporation Division/Subsidiary: Saeder-Krupp's Heavy Industries & Chemicals

Facility Function: Remote Operating Mining Colony

Personnel: 2,000

If anyone could have given Yamatetsu a run for Dunkelzahn's endowment, it was S-K's Cadmus facility. Ignoring the hype, it actually meets the Foundation's terms of eligibility including self-sufficiency. Now I heard that some corp out there offered a healthy chunk of nuyen for my head, and I'm betting it was either S-K or Ares. I'm personally voting for the former (good luck finding me, though). Saeder-Krupp put some impressive sweat in building this facility without folks noticing, so I can understand how my recent foray into their network probably ticked them off royally. Even less, they probably didn't want folks knowing that their first facility cost four hundred civies their lives due to structural failure ... oops, I guess I wasn't supposed to mention that (if you want evidence, check the trench east of Novaya Zemlya Island in the Barents Sea).

- No need. I was already out there some months back, scouting out safe harbors for some sea-faring friends. On dry land, Novaya's a quaint fishing island half covered in Arctic permafrost. Below sea-level, though, there's a black sub or two keeping folks to a respectable depth. Couldn't figure out why until now, but it makes sense.

- Krasnoselkup Sally

Despite their record, Cadmus is an impressive accomplishment for Saeder-Krupp barring any crush-depth mishaps. The facility sells itself to hardcore S-K employees and their families who've proven their loyalty to Lofwyr. It's a top-notch research facility with enough vanguard tech to make a rigger and her drones wet themselves. Unfortunately, Cadmus sells itself as a settlement and pioneer paradise—after all, calling their employees prisoners doesn't inspire the lemmings. Saeder-Krupp doesn't want people coming and going as they please (and selling company secrets), which is why they made it self-sufficient. I managed to look at a standard Cadmus work contract and it's scary. Employees essentially indenture themselves and their families for ten-year tours (for bucket loads of nuyen and corp privileges, mind you), meaning it's hard for other corps to kidnap them topside. The facility went online four years ago, which means the first generation of "settlers" are still down there for another six years. Let's just say the suicide rate is pretty impressive.

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Cadmus Employee Indoctrination Package

Welcome to your new life, Settler.

Cadmus Deep-Habitat Colony is situated in the Iberian Abyssal Plain, between the Mid-Atlantic Ridge and Portugal's coast, some 3200 meters down. Unlike most underwater habitats, CDHC operates at a one-pressure atmosphere, thus allowing for unrestricted travel to the surface, warm interior climates and agricultural landscaping in our open parks and tree-lined streets. The colony is a suburban-style environment with streets, houses, schools, entertainment plazas, autonomous life-support facilities for different sections and the Saeder-Krupp Operations Center. Each district houses five hundred employees and is situated within a hollow, monolith-bunker with a high-vaulted ceiling and full-spectrum lighting operating on a standard daylight/nighttime progression cycle. In turn, the bunkers are connected directly to one another in a wheel pattern, with the Operations Center acting as hub. Three additional monolith-bunkers hold our on-site heavy industries factory for drone repair and production, our farming fields, and submarine bays and maintenance facilities.

While these neighborhood shells can easily withstand pressures in excess of double their capacity, employee safety is always a concern for Saeder-Krupp. Therefore a second dome covers each neighborhood bunker, creating a dead-space reservoir in case of emergencies. The honeycomb-looking domes are made of super-dense alloys. Each honeycomb cell, however, is designed to isolate leakage problems while maintaining the integrity of the superstructure. Additionally, sentry-drones, state-of-the-art mines, torpedo racks and ascending depth charges all protect the facility in tandem with our two-submarine navy.

- The problem with this facility is that it's a coffin with amenities and ceiling space. Why is it when somebody creates a one-atmosphere station, they feel this need to make it open and spacious? The facility should be sectioned into floors and corridors to isolate internal flooding.

- Pixie Electron

- It won't make a difference. The honeycomb cell idea works, but at shallower depths. That far down, the dead space reservoir would fill up in a minute and punch the monolith-bunker with enough directed force to crack it. No facility could handle a flood of that power, so you might as well give them a pretty view, cause when their time's up, it's up.

- Zydeco

Cadmus Deep-Habitat Colony is an experiment in automated mining. All our personnel are qualified heavy industry and chemical engineers, mechanics, geologists and riggers (in addition to the hundreds of support-staff personnel and, of course, your family). Rather than risking metahuman life in the pursuit of deep-sea mining, we are supporting ambitious programs that use new-generation heavy industry drones to operate as mining proxies. Riggers housed in the safety of the Operations Center or a mini-submarine use pressure-resistant cables to send orders to



and manipulate the vehicles into extracting ore, drilling, planting explosives or any number of hazardous chores normally too dangerous for metahumans at this depth. Saeder-Krupp isn't just building a better tomorrow; we're saving lives.

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- Cough! Sputter! What! I dare this slag to drink desalinated water from the North Sea and repeat what he or she just said with a straight face. Before you S-K lovers start talking about eco-shamans, bio-friendly spells and frickin stuffed animals with googly eyes, you can't tell me that Lofwyr gives a damn about the ecology. Hell, I bet he didn't bother with an environment-impact study on the local ecosystem before he built Cadmus or sent his riggers to field test new equipment.

- Deep Green

- What ecosystem, Deep Green? They're so far down, even God's forgot about them already.

- Sub-Hunter

- Here we go again with that technological arrogance. Say Sub-Hunter, I suppose you've never been astral diving, have you? So you haven't seen the explosion of life-auras from the billions of living particles down there. I did, and it was like swimming in stars. But hey, I know you like hard facts, so here's some numbers for you. Sure, the ocean covers three quarters of the world's surface, but when you take the volume of inhabitable water and compare it against the volume of land surface, 99 percent of the Earth's biosphere is in her oceans. Still not convinced? Here's something else to consider. One percent of all life is on land; two to three percent lives in the water's upper sunlit regions. Do you know where the remaining 96 to 97 percent are? In the deepest, can't-see-my-hands, layers of ocean dark ... the deep under. Now tell me they aren't gacking the ecology.

- Mean Thumb

MITSUHAMA AQUALOGICAL PLATFORM

Habitat Type: Partially Submerged Mining Platform

Location: Cape Verde Shelf

Project Director: Cornelius Hito

Facility Function: Refitted Mining Platform

Personnel: 500

Here's a location that screams "pirate target, pirate target, frag me." Most corps consider this dig a joke, much like the search for Atlantis itself. The rumors that Atlantis sank off Africa's coast is old, and plenty of teams have searched the Cape Verde and Canary Islands for signs of the lost continent over the last century without finding a damn thing. Now people expect this kind of behavior from the Atlantis Foundation, but Pentacle had to call in some big favors to involve Mitsuhamas. That leaves people wondering why MCT is even bothering. Now it's true that it didn't cost them much to bring

an old mining platform back online. Still, they must expect something in return, and Atlantis Foundation must be pretty sure of themselves to enter a deal with a corp that could buy and sell their assets in a stock market second.

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Mitsuhamas Aqualogical Report

Initially abandoned due to increased danger from local sea-life and piracy, Mitsuhamas-Benguet Mining Platform #17 was recently re-acquired from pirates and refitted for its new duties. It now conducts aqualogical digs in tandem with expert research by Pentacle Research and the Atlantean Foundation.

This facility is semi-submerged with two distinct sections. The first is the elevated platform, which serves as the operation's heart for administration and support staff, as well as providing docking for surface ships, landing pads for vector-thrust/rotor craft and surface-defense measures against regional pirates. The second portion of the facility is fully submerged at 1700 meters with ambient pressure to match exterior conditions as well as a trimix-gas environment. This segment is the operation's workhorse.

- That's one reason I think ambient-pressure facilities went the way of leeches and Dodos. Just the thought that sustained high pressure is disintegrating my joints slowly, bugs me out.

- Mathais

- Actually, few divers suffer from it so bone necrosis isn't a certainty.

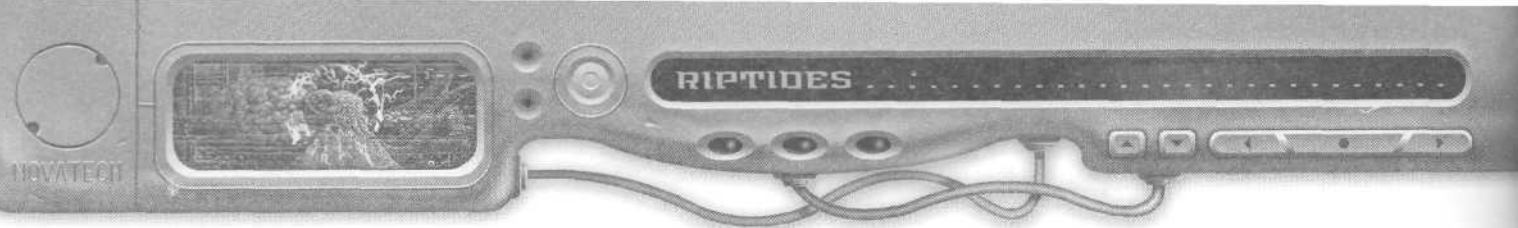
- Metahumanis

- Yeah, well neither's Russian Roulette at first. Eventually, though, the odds just aren't in your favor. Sure, most surface divers probably won't get bone necrosis, but high-pressure divers and station crews up their chance of developing the condition with each jaunt. Now before you say I'm blowing bubbles down your blowhole, here's a hard fact or two. Studies found that divers who stayed near the surface (say 30 meters) did not develop joint disintegration. Out of those diving beyond 200 meters, the rate jumped to 15.8 percent. Now we got the technological know-how to maintain facilities several thousand meters down, and you don't think that affects the body something silly? Just wait a few years and see what happens to these high-pressure environment bozos ... if the corps don't cover it up first.

- Foreign Lesion

- This is where weird-science genetics steps in. I hear some corps are experimenting with genetically adapting humans to live in high-pressure environments like this.

- Bottled Gene



The two industrial strength elevators (with multi-staged shafts to maintain autonomous atmospheric conditions) connect both facilities, though these are only used for the transfer of equipment and dig finds. Most personnel prefer traveling through the facility's mini-sub. Unfortunately, archeologists and the facility crew cannot transfer easily between the two atmospheric differentials. Decompression procedure requires personnel from the lower facility to spend a minimum of five days in a hyperbaric chamber to acclimate fully. Therefore, travel is kept to a minimum as stipulated in work contracts, with service tours of one year, plus two weeks vacation every three months at a nearby Cape Verde Island resort.

While the platform is similar to most production facilities, its submerged half is markedly different. The deep habitat is sectioned to minimize internal flooding and pressure loss, but spacious enough to accommodate all metahuman types. Built on a platform anchored to the ground, it rises up thirty stories like the bottom half of a pyramid. The platform's superstructure and first floor are fifty meters off the seabed, allowing mini-sub unrestricted access to the underside moon pool and hangar. The facility beds four hundred miners and support staff, and contains all the necessary amenities for prolonged stays under water. This includes thermal clothing to protect against trimix chills, satellite feeds for Matrix access and finally, full-entertainment benefits thanks to the protected cables linked to the surface platform. The facility uses full-spectrum lighting to mimic sunlight, while the crew receives vitamin D shots to combat Seasonal Affective Disorder (depression from lack of sunlight). Additionally, we removed all heavy-processing equipment from the two plants to provide the archeologists a work area, and crewmembers with an open field (where they play soccer and basketball).

Currently, a team of elementalists and conjurers are protecting the facility from magical intrusion, while diviners are helping Pentacle and Atlantean archeologists study the seismic profiles to locate regional seabed anomalies. Most of the field-work requires submarine transport to research sites far from the facilities. Thanks to the recent acquisition of copies of Solon at Sais' Atlantean parchment and the Foundation's help with Dylan Hardbrow's translations, we believe we have a firm starting point for our investigations. To prevent any future hacking of relevant data through the Matrix, however, all information and maps are stored on an independent network that can only be accessed directly from the submerged station.

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- Avoid Mitsuhamas-Benguet Mining Platform #17! It's a fraggin' red herring armed with throat-ripping teeth. The Atlantean dig might exist, but it ain't happening there. My contractor sent me to hack Platform 17's independent network and make off with copies of the Atlantean map. First

thing we realized was that a dozen personnel ran the platform itself to make it look busy. Their computer systems, however, were not connected to the network in the submerged half. After capturing the platform's crew, we decided to take the elevator down, but they were offline. Instead, each section of sealed shaft had industrial-powered fans pointing down to create a powerful draft. The crew claimed there was a power problem below and that the cars were stuck downstairs. They also said the fans were for emergency pressurization in case the facility lost atmospheric integrity. Like drek they were. I almost fragged the lying bastards right there, but I eventually convinced them to spill the truth.

It seems Mitsuhamas is using Platform 17 to deal with shadowrunners while they conduct the dig elsewhere. Mitsuhamas Research Unit 4, which tests out parabiological viruses and diseases like vampirism, uses 17 to dump fragging vampires and infected metahumans! The fans in the elevator shaft prevents the vampires from wafting up in mist form, while the pressure bulkheads at each section are strong enough to resist their strength. The only escape is through the airlocks (if they somehow get them open), which lead out into the ocean, but the lack of air knocks vampires into sleep.

The metahuman staff on the platform lowers live meals down the shaft (one bulkhead section at a time to prevent the vampires from escaping) to feed their "guests." Sometimes runners or pirates infiltrate the mining facility itself and serve as special treats. Nobody's escaped this trap yet because the areas around the airlock and elevator shafts retain partial power and are well-maintained enough to draw victims further into the submerged facility. Along the way, however, power flickers and eventually fades to black corridors that hide the blood-streaked walls and half-devoured corpses.

Needless to say, we were the first fraggers not to fall for the trap. Oh, and as far as the platform's crew is concerned, they're enjoying a nice vacation down below.

- Derek

- Hmm. This begs the question: where is the actual dig occurring then? Information concerning the discovery of the "Atlantis parchment" at the Mediterranean undersea dig was true, according to my sources. If the Pentacle-Atlantean duo isn't investigating the Cape Verde Islands, they could be in the Canary Islands to the north (legends say this was Atlantis' northern mountain chain), where Mitsuhamas-Benguet has other mining platforms. Now whether the map is accurate is another matter.

- The Theosophist

GAME INFORMATION



This chapter provides information on using toxic zones, deserts, the Polar Regions, space habitats and deep-sea aquacologies in your *Shadowrun* campaign.

In addition to the core *Shadowrun, Third Edition (SR3)* rules, gamemasters will find the magic rules presented in *Magic in the Shadows (MITS)* and the critters rules presented in the *Critters* book (accompanying the *SR3 Gamemaster's Screen*) necessary to use this section. Gamemasters may also need the *Rigger 3 (R3)* vehicle rules and the underwater rules presented in the *Cannon Companion (CC)*. The rules for toxins and damage in *Man & Machine (M&M)* may also be helpful.

BRAVING THE OUTDOORS

Surviving in the wilderness can be challenging enough, much less surviving in a dangerous environment such as a desert or the Arctic. This is partly due to the increasing urbanization of *Shadowrun's* postmodern society, but part of it is simply because survival is a demanding task. Failure leads to fatigue, which causes bad judgment, mistakes, injury and sometimes death.

NEW SKILLS

The following new skills can be used to help characters survive in extreme environments.

Wilderness Survival (Willpower)

This Active skill governs a character's proficiency in surviving outdoors for an extended period of time. This skill determines a character's proficiency with various outdoor camping and survival gear, as well as his ability to scrounge for food and water, create makeshift shelters and adapt to harsh natural conditions.

Default: Willpower Attribute

Specializations: Forest, Mountain, Desert, Jungle, Polar or other appropriate wilderness terrain type.

Navigation (Intelligence)

This Knowledge skill indicates a character's expertise at plotting a course between two points based on map reading, using navigation equipment and identifying key terrain landmarks.

SURVIVAL TEST TABLE

Wilderness Terrain	Base Target Number
Arctic or Antarctic	8
Desert	6
Forest	4
Jungle	5
Low mountains or foothills	5
High mountains	6
Plains	4
Swamp	5
Tundra	5

Situation	Target Number Modifiers
Camping/survival gear on hand	
Full set	-2
Partial set	-1
Rations available	-2
No food or water	+1
Heat/climate control available	-1
Inappropriate clothing/armor	+1 to +4
Extended travel or exertion	+1 to +4
Toxic terrain	+2 to +4
Weather Conditions	
Poor	+1
Terrible	+2
Extreme	+4
Unfavorable season	+2
Character's Body attribute*	
1-5	—
6-12	-1
13+	-2
Character injured	+Wound Modifier

* Modifier does not apply for group tests.

Default: Intelligence, appropriate area Knowledge skills
Specializations: Land, sea, flight

USING SURVIVAL SKILL

Whenever characters spend several consecutive days out in the wilderness, the gamemaster may call for a Survival Test to simulate this. Characters use the Wilderness Survival skill to determine the outcome and results of this test.

The Survival Test

Each day a character is out in the wilderness, she must make a Survival Test. The base target number for this test is determined by the wilderness terrain, as listed on the Survival Test Table. Weather conditions and other factors may modify the target number, as listed on the same table.

After counting the number of successes, roll 1D6; if the environment is extremely hazardous (blazing desert heat with-

out water, winter storm in the Arctic), roll 2D6 instead and add the results. Subtract from this result the total number of successes from the Survival Test. The result is the number of boxes of Stun damage the character takes as a result of fatigue, wear and tear and other factors. This Stun damage may not be healed until the character reaches civilization (or at least a situation where she is not forced to rely on survival skills) and is able to rest for an 8-hour period.

If a character reaches Deadly Stun damage, she collapses from exposure and fatigue and can no longer make Survival Tests. Unless helped by others, she will continue to rack up damage from exposure each day, overflowing from Stun to Physical, until dead.

Group Tests: If a group of characters is in the wilderness, they can make individual Survival Tests or do it as a group. Any test for more than one character at a time is called a group test. Certain modifiers do not apply to group tests, as listed. For a group Survival Test, only a single character makes the test (usually the character with the highest Wilderness Survival skill, or the least wounded), but other characters with the Wilderness Survival skill may make Complementary Tests against the same target number, with half their successes (round down) applying.

For group tests, add 1 to the 1D6 (or 2D6) roll for each additional character in the group past the first. The Stun damage boxes received in a group tests are divided evenly among the group (with the remainder assigned evenly, starting with the character with the lowest Body attribute and moving up; roll randomly if Body attributes are tied).

Optional Stress Rule: Rather than inflicting Stun damage, the result from the Survival Test can be the number of Stress Points the character (or each character in the group) takes. (See *Damage and Healing*, pp. 124-131, *Man & Machine*, for more information on Stress Points). Apply the Stress randomly per the Wound Effect Table, p. 127, *Man & Machine*. If any characters incur Stress from the Survival Test, make the appropriate Stress Test.

Survival Table Notes

Camping gear on hand: This modifier applies if the character has camping gear appropriate to the climate (tent and sleeping bag at a minimum). For group tests, at least half of the group must be so equipped. If the majority only has a partial set, only a -1 modifier applies.

Rations and water available: This modifier applies if the character has enough rations and water, or if the group has enough rations available to feed at least half the characters for that day.

No food or water: This modifier applies if the character (or at least half the characters in a group) goes through the day without eating or drinking water.

Heat/climate control available: This modifier applies if the character/group has or can create a heating or cooling source for the appropriate climate (heat for mild and cold climates, cooling for hot climates). This includes fires, gas or electric heaters, fans, and also vehicles (assuming the appropriate climate control is functional).



Inappropriate clothing/armor: This modifier applies if the character (or at least half the group) is improperly dressed. Base the severity of the modifier on the situation. For example, not wearing head covering in the desert adds +1, wearing armor clothing in a jungle adds +2, wearing light clothing in the Antarctic adds +4.

Extended travel or exertion: This modifier applies if the character (or group) overextends herself through sustained travel (more than 8 hours, or traveling during the day in the desert) or heavy physical activity (digging a latrine, operating without sleep, carrying a wounded comrade).

Toxic terrain: Any area that is heavily polluted or environmentally scarred will have this modifier.

Weather: Inclement weather imposes a modifier dependent on the circumstances. In mild or cold climates, normal rain or snow or winds constitute Poor weather, thunderstorms or gale force winds constitute Terrible weather while major blizzards or white outs would be Extreme. In hot climates, an unusually hot day constitutes Poor weather, an excessively hot day (one that would trigger a heat alert) constitutes Terrible weather and a cyclone or sandstorm constitutes Extreme weather.

Unfavorable Season: The Unfavorable Season modifier applies if the character/group is outdoors during a season that would exacerbate bad conditions (winter for mild or cold climates, summer for hot climates).

Tony Two-Chins, Maga and Fast Freddie are stranded in the jungle when their smuggler's plane is shot down. As they make their way towards civilization, they must roll Survival Tests each day. Tony has Wilderness Survival at 5 and Maga has Wilderness Survival 3, but Freddie is a city rat and doesn't have any such skill at all. They decide to make a group test. They are traveling through the jungle (base target number 5), with no food or water (+1), during monsoon season (Poor weather, +1). Paranoid of jungle critters, the runners refuse to take off their armor jackets (+2), and they have to carry Fast Freddie, whose leg was broken in the crash (+1, Lucky Tony's a troll). Tony rolls 5 dice against a final Target Number 10; Maga adds 3 complementary dice to this test. Not surprisingly, they only get 1 success. The gamemaster rolls 1D6 and gets a 3, then adds +2 to account for each additional member in the group. That means the group receives 4 boxes (3 + 2 = 5, 5 - 1 = 4) of Stun damage the first day. Each of them gets 1 box, and Freddie, who has the lowest Body, gets an extra box. After one day of trekking through the jungle, the entire group is tired, suffering at least Light Stun—they better hope civilization isn't far.

USING NAVIGATION

Navigation is how to find your way from point A to point B. Even with GPS and other advanced navigation technology, finding your way through the wilderness is a tricky skill to master. Without such technology, it can be very difficult. Characters attempting to navigate their way across the wilderness make a Navigation Test each day they are traveling.

NAVIGATION MODIFIERS TABLE

Situation	Modifier
GPS present*	-2
Compass present*	-1
Vehicle Autonav*	-(Autonav - 1)
Map or mapsofts available	-1
Familiar terrain	-1
Weather Conditions	
Clear	-1
Overcast	0
Bad	+2
Terrible	+4

*Only one of these modifiers may be applied.

Navigation Tests

First, determine scatter distance and direction from the destination using the Scatter Rules on p. 118 of SR3. The scatter distance is equal to 10 percent of the travel distance multiplied by 1D6.

Second, the characters make a Navigation Success Test. For a group, use the highest Navigation skill of all the characters in the group. The base target number is 4, subject to the modifiers on the Navigation Modifiers Table. Each success reduces the scatter distance by 5 percent of the travel distance per success. If the scatter distance is 0 or less, the characters arrive exactly at their destination.

If the scatter distance is greater than 0, the characters have wandered off target and arrive at another location. Once they realize they are lost, make another Navigation (4) Test, applying the appropriate modifiers from the Navigation Modifiers Table. If the characters gain at least one success, they have figured out their location and can navigate a new course to where they need to go. Note that they must still make additional Navigation Tests if the rest of the journey takes more than one day. (Gamemasters may also choose to repeat the Navigation Test procedure when trying to get back on track, to add extra challenge).

If any Navigation Test results in all 1s, the characters are totally lost and cannot figure out where they are or how to get to their destination for 24 hours. The gamemaster should feel free to locate them anywhere desired within reason.

THE POISONED EARTH

Pollution is a fact of life in the Sixth World, and shadowrunners often have to go into some desolate and polluted places in pursuit of their missions. Toxic areas have become pervasive, found near almost any large urban area. From Glow City in the Seattle Barrens to the Stinkfens in Britain to the radioactive Libyan Desert, toxic zones are everywhere.

USING TOXIC ZONES

Toxic zones offer a unique sort of "wilderness" challenge for shadowrunners because the environment itself is dangerous along with whatever the characters might encounter there. Toxic zones are the closest things most shadowrunners will ever see to visiting a hostile, alien world (other than visiting certain metaplanes). The zones can have a bleak, post-holocaust feel to them, for gamemasters who want to emphasize the desolation of parts of the Sixth World in true cyberpunk style.

Shadowrunners can undertake many runs that involve toxic zones in one way or another, including the following:

Bring 'Em Back Alive

The shadowrunners are hired to go into a toxic zone to locate and capture (or kill) a particular mutant critter. Their employer may want the critter for scientific research, as proof of the ecological damage the zone is causing, as a guard animal or addition to a personal menagerie, for a unique enchantment or for some other reason. The run is considerably more difficult if the runners are expected to bring back their quarry alive and (reasonably) intact, since the critter isn't likely to cooperate.

Hide and Seek

Toxic zones make perfect hideouts for people who don't want a lot of people bothering them. Runners tracking a fugitive might have to go into a toxic zone looking for their quarry. Toxic zones are also good places to hide secret corporate labs and research centers, government installations, or other places people don't want found but that runners are often hired to break into.

Recover the Goods

The runners are hired to recover something from inside the toxic zone including (but not limited to) samples of contaminated air, soil and water; dangerous (but potentially valuable) chemicals or other contaminants; items lost or smuggled out in a corporation's waste shipment and so forth. Of course, it's possible that other inhabitants of the toxic zone have already found whatever it is the runners are looking for and aren't willing to part with it, at least not for free.

Survey the Damage

This is a simple run to go into a toxic zone and discover just how bad things are there. Unfortunately, that means dealing with whatever hazards the zone has to offer while the runners gather information for their client. The client may be an ecological group, government or a corporation looking to get some dirt on a rival company.

Toxic Hunt

Toxic zones often become home to magical threats like toxic shamans and spirits (p. 124, *MITS*) and shadowrunners may have to brave the zone to face the threat in its own lair. They have to overcome the hazards of the environment and deal with the toxic threat at its most powerful (in an environment that probably limits or weakens the magical abilities of the player characters).

BIOHAZARDS

Toxic zones offer a variety of biological hazards that are difficult to combat because they are often invisible, undetected until it's too late to do anything about them. For basic information about diseases and toxins, see pp. 249-251, *SR3*. This material expands on the basic information, providing more detailed rules for gamemasters using toxic zones.

Acid Rain

All creatures not specifically immune to toxins or corrosives are assumed to have the equivalent of a Mild allergy to acid rain (see p. 15, *Critters*, for more information). Normal acid rain causes discomfort (in the form of painful itching on exposed skin) and imposes a +1 penalty on all target numbers while the characters are exposed to it. Protective clothing can eliminate this penalty. Cases of "hard" acid rain may increase the TN penalty to +2, and long-term exposure can cause skin damage.

Air Pollution

Treat excessive air pollution as a toxin with a Power of 1D6, base damage of Moderate Stun and a Speed of 30 minutes. Breathing masks and air filters reduce the Power of the pollution by their rating, while respirators and self-contained air supplies negate it entirely. The Stun damage caused by air pollution heals slowly, at the rate of healing Physical damage (see p. 126, *SR3*), and only when the character is breathing clean air.

Disease

Characters can be exposed to infectious diseases in a number of ways, including contact with infected individuals, contaminated materials or even breathing air contaminated with a pathogen. Whenever the gamemaster feels there is a chance of a character becoming infected (or once per day in ongoing infectious conditions), the character must make a Body Test with a base target number of 4, modified according to the Contagion Table (p. 110). One or more successes mean the character is not infected with the disease. A failure means the character is infected and suffers from the disease's normal effects. A character immunized against a particular disease does not have to make a test for infection. Dwarfs get +2 dice on their Body Tests to resist infection.

Filtration systems (see p. 300, *SR3*) do not reduce the chances of infection, but they do reduce the Power of any applicable pathogen by their rating, making it easier to resist the effects. Gamemaster's may rule that if the filters reduce a pathogen's Power below 0, it does not infect the character at all.

Once infected, the character is contagious at least until the onset of the disease and possibly afterward as well, depending on the pathogen. After the disease's initial onset time (depending on its Speed) the infected character begins to show symptoms and possibly suffer damage from the disease. After the disease's initial onset time and for every like amount of time thereafter, the character must make a Body Test against the Power of the disease, reducing its damage by one level for every two successes. A Body Test that reduces a disease's damage to nothing eliminates it from the character's system,

CONTAGION TABLE

Condition	TN Modifier
No contact with possible victims	-2
Physical contact with victim	
Brief	+1
Prolonged	+2
Intimate	+4
Unsanitary conditions	+2
Airborne pathogen	+4
Virulent pathogen	+1 or more
Weak pathogen	-1 or more

allowing for a complete recovery within 24 hours. Until the character successfully overcomes the disease, he does not heal any damage caused by it (though magic can still heal disease-related damage).

Magical Diseases

The Awakening has led to the development of several different magical pathogens, diseases that only develop and thrive in the presence of certain levels of magical energy. Many magical diseases are retroviruses, viruses that incorporate into the DNA of their host organism and cause changes in the genetic code. These changes can lead to the gradual transformation of the host organism over time. Perhaps the most famous of these viruses is the Human-Metahuman Vampiric Virus (HMHVV) and its many variants. These viruses (and other magical diseases) are most often transmitted by a critter with the Infection or Pestilence powers (see p. 11 and 13, *Critters*).

A few other magical diseases are described here. Gamemasters should feel free to create others that might show up in a toxic zone, particularly one contaminated with mutagens, medical waste or radiation in conjunction with a high background count.

Aura Deficiency Syndrome (ADS): This viral infection is spread by physical contact and symptoms first manifest 24 hours after infection. Every 24 hours, the infected character must make a Body Success Contest against the disease's Power. If the character gains three or more net successes, the disease is eliminated from his system. Fewer successes result in no effect but require another Body-Power Contest 24 hours later. If the infection scores more net successes, the infected character suffers a -1 die penalty to all Resistance Tests against magic for every two net successes scored by the infection. If this lowers the character's dice available for a Resistance Test to 0 or less, the infected character doesn't get any Resistance Test against magic at all. If the infection achieves a total of 15 net successes, the victim loses the ability to make magical Resistance Tests *permanently*.

ADS is extremely difficult to cure magically, since it draws off energy from the victim. Double the infection's Power rating for the purposes of spells like Cure Disease and

Prophylaxis used against it. Aura Deficiency Syndrome is clearly visible in the aura of the victim, requiring only 1 success on an Astral Perception Test to notice it and 3 or more successes it diagnose it as ADS. The infection has a Power rating ranging from 2 for a weak infection to 6 or possibly more.

Mana-Active Aura Deficiency Syndrome (MADS): This is a viral infection similar to ADS but spread only through direct contact between dual-natured beings, including Awakened characters using astral perception. The infection weakens the magical abilities of the host. Symptoms first appear 24 hours after infection. At that time, and every 24 hours thereafter, the victim must make an Essence Success Contest against the Power of the infection. Three or more net successes on the part of the victim purge the illness while lesser levels of success have no effect. Two or more net successes on the part of the infection begin reducing the victim's ability to use magic. Every two net successes by the infection impose a -1 modifier to the character's Essence or Magic for the purposes of using Magical Skills, adept powers, and critter powers. Note that the character's actual Essence or Magic rating does not change, only the character's ability to make full use of it. If the infection's modifier lowers the character's Essence or Magic to 0 or less, he loses use of all magical abilities. If the infection accumulates a total of 20 net successes, the character loses all magical abilities *permanently* and becomes a mundane. Paranormal critters that reach this stage of the disease sicken and die.

Toxins

Toxins are rated with damage codes much like weapons, since they attack the body. A toxin's Power measures its strength and its damage level measures its potential harm.

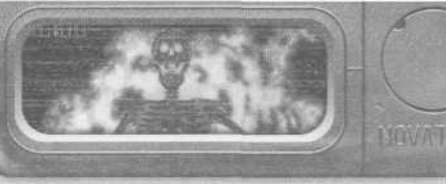
Characters can be exposed to toxins in a variety of ways. They can be ingested, injected into the body through a cut or puncture, breathed, or even absorbed through the skin. Certain equipment (see pp. 105-106, *M&M*) may limit the ways a toxin can enter the character's system.

Once in the victim's body, toxins have a Speed determining how quickly they affect the victim. Some toxins (like narcotect) take effect immediately, while others take time. After the onset time elapses, the victim must make a Body Test against the Power of the toxin. Dwarfs get +2 dice for this test, and characters with blood or toxin filters reduce the power of the toxin by the filter's rating. Spells like Antidote can also reduce the Power of a toxin. For toxins that inflict damage, every two successes on the Body Test reduce the toxin's damage by one level.

For more information on toxins and other chemical compounds, see pp. 101-122, *M&M*.

RADIATION

Radiation is a serious hazard to any living creature. Radiation exposure is measured in units called *rads*. A person can absorb rads over time by being exposed to a radioactive environment, while short bursts of radiation from "hot" sources apply a dose of rads all at once (see the Radiation Table, p. 112). The more rads someone absorbs, the greater



the short- and long-term injury. Characters reduce their rad total by 10 percent of the original dosage they received per day, but 10 percent of the original dosage is *permanent* and can't be reduced by any means other than extensive gene-therapy. For example, a character absorbs 200 rads. Each day the character heals 20 rads of exposure, but the last 20 rads is permanent and does not heal.

Radiation Shielding

Certain materials can limit radiation exposure. The Earth's atmosphere, for example, provides shielding against a variety of cosmic rays in space. Dense materials, like lead, are commonly used in radiation shielding. Portable radiation shielding of a kind that can be worn is limited in how much radiation it can protect against. A rad-suit (see *Biohazard Equipment*, p. 113) provides protection against all radiation output of less than 1 rad per minute, but provides no real protection for higher levels of radiation. Long-term exposure to radiation sources, even in a rad-suit, may result in slight irradiation.

Magic is also capable of shielding against radiation. Normal barrier spells provide no protection against radiation, but there are specific spells that do, developed by magicians working in conjunction with radioactive materials.

Radiation Shield (Transformation Manipulation Spell)

Type: P • Target: 6 • Duration: S • Drain: +1(M)

Radiation Barrier (Transformation Manipulation Spell)

Type: P • Target: 6 • Duration: S • Drain: +1(S)

This spell creates a faintly visible bluish glow around the subject. It absorbs harmful radiation equal to (successes x 10) rads per hour, with a maximum number of successes equal to the spell's force. Radiation over the shield's limit "leaks" through it, affecting the subject normally. Radiation Barrier is an area-effect version of Radiation Shield, creating a dome that screens out radiation with a base radius in meters equal to the caster's Magic attribute.

Effects of Radiation

Radiation has a number of potentially deadly effects, based on the amount of exposure. It also has effects on the surrounding environment, particularly the mana field and the astral plane.

Radiation Burns: Exposure to radiation can cause painful burns on all exposed areas of skin. After exposure (or after every 6 hours if a character suffers prolonged exposure), characters must make a Damage Resistance Test against a target number of (total rads ÷ 200) with a minimum target number of 2. So a dose of 400 rads or less has a Target Number 2, 800 rads a Target Number 4, 1,200 rads a Target Number 6, and so forth. Base damage is determined from the Radiation Table. Every two successes on the Damage Resistance Test reduce the damage normally. Dermal armor and related forms of protection do not aid this Damage Resistance Test.

Radiation Sickness: Radiation exposure can also cause long-term health problems. Treat radiation sickness as a disease (p. 249, SR3) with a Speed of 24 hours and damage based on the amount of exposure: Power of (rads ÷ 50) and damage

RADIATION TABLE

Radiation Sources

Source	Radiation Exposure (in rads)
Fission reactor room (while in operation)	400 per hour
Fallout after a fission bomb explosion:	
One day after	7 per hour
Five hours after	36 per hour
One hour after	5 per minute
Leaking nuclear waste	1-10 rads per hour
Contaminated nuclear waste dump	10 per year
One gram of ingested plutonium	1 per second
Plutonium dust	2 per day
if inhaled	1 per hour
Irradiated area	1 per week
Fission plant meltdown	1,000 per hour or more
One-megaton fission bomb airburst	6,600
Outer edge of the Cermak Blast	2 per day
Center of the Cermak Blast	50 per minute

Radiation Burns

Exposure	Damage
10-799 rads	Light
800-1,199 rads	Moderate
1,200-1,999 rads	Serious
2,000+ rads	Deadly

Radiation Sickness

Exposure	Damage
10-400 rads	Light Stun
401-800 rads	Moderate Stun
801-1,000 rads	Serious Stun
1,001+ rads	Deadly Stun

from the Radiation Table. The character must make a Resistance Test 24 hours after exposure and every 24 hours thereafter. If any test succeeds in reducing the damage to nothing, the character recovers completely. Otherwise the victim must continue making Resistance Tests. Once the victim's Stun Damage track is filled, damage from the sickness becomes Physical. The character cannot recover from damage caused by radiation sickness so long as the condition persists. Spells like Heal and Treat can cure the Physical damage caused by radiation sickness, but magic cannot cure the sickness itself. Characters with radiation sickness suffer from skin sores, loss of body hair, pain, tremors and drowsiness, nausea and vomiting and diarrhea.

Blindness and Sterility: A single dose of 200 or more rads causes temporary blindness and sterility, lasting a base time of

120 days. Make a Body (4) Test for the character and divide this base time by the successes to determine the exact duration. No successes on the Body Test or a single dose of 500 or more rads makes both effects permanent.

Cancer and Mutation: Exposure to radiation can cause various forms of cancer. Once per year, a character exposed to radiation rolls an Essence (round up) Test against a target number equal to the number of rads the character has been exposed to divided by 50 (total rads ÷ 50, round up). If the test fails, the character develops cancer within the year. Treat cancer as a disease with damage like radiation sickness (above) and a Speed of 30 days.

Characters exposed to large doses of radiation (100+ rads) may also suffer genetic mutations, causing birth defects in any offspring they might have. These effects are left largely up to the gamemaster, though radiation exposure in animals may lead to mutant critters (see p. 113 and the *Critters* sourcebook for details).

Background Count: Radiation has no direct effect on spirits, whether in physical or astral form. Radiation *does*, however, have a significant effect on the currents of magical power. A radioactive area has a background count equal to its rad output per hour divided by 100, with a minimum of 1. So a nuclear waste dump has a background count of 1, while the heart of a fission reactor has a background count of 4. Any site where a fission bomb has been detonated has a permanent background count of 5, tapering off by 1 point for every 100 meters from ground zero. Additionally, any area

exhibiting background count because of radiation is considered a toxic domain, meaning only toxic shamans can summon nature spirits there (see p. 126, *MITS*). Though magical theorists are working on it, there's currently no magical means for reducing or eliminating radioactivity from an area.

BIOHAZARD EQUIPMENT

In addition to the survival gear described on pp. 293-294, *SR3*, there are various pieces of equipment that can improve characters' chances of survival in hostile environments. Some can also be found in *Man & Machine* (p. 116)

Air Filter: Breathers filter particulates out of the air, protecting the wearer from smog and air pollution. Air filters stick right to the skin over the mouth and nose and come in a vari-

ety of styles and colors. They have no effect against gas compounds such as Neuro-Stun. Extra filters cost (Rating x 10¥).

Bio-Analyzer: A small, hand-held device consisting of a dedicated computer and bio-sampling sensors, capable of picking up most known biohazards within a scanning radius of 50 meters. Gives the user a readout indicating things like radiation level, any airborne toxins or pathogens, and so forth. It can also be used to analyze biological samples (like a few drops of blood) for any signs of pathogens or toxins, much like a medkit (see p. 304, SR3).

Film Badge: A specially treated square of chemical film that can be pinned or clipped to clothing. It changes color in the presence of hazardous levels of radiation, alerting the wearer to the danger. A film badge is good for one use, then it must be replaced.

Geiger Counter: A hand-held device that picks up levels of radioactivity within 10 meters and accurately measures them.

Rad-Suit: A heavy, full body garment that provides protection against harmful radiation up to 1 rad per minute. Against more intense radiation sources, rad suits only provide minimal protection (reduce the rad count by an amount of 1 per minute). Rad suits have a limited armor value (Ballistic 1, Impact 1) and any attack that damages the wearer breaches the suit. Rad-suits are bulky and difficult to move around in. They reduce the wearer's Quickness by 1 for all actions (including manual dexterity because of bulky gloves).

MUTANT AND TOXIC CRITTERS

The mutant and toxic critter rules from the *Critters* sourcebook are particularly useful when dealing with toxic zones. These are the places that spawn mutant and toxic critters of all kinds for shadowrunners to deal with. Such critters can be mere antagonists or they may be the focus of a shadowrun in some way, such as trying to hunt down and capture an elusive and dangerous critter.

This section expands upon the mutant and toxic critter rules from *Critters*.

Mutant Critters

Mutant critters are mundane animals mutated by exposure to chemicals, radiation, or other mutagenic agents, usually in a heavily toxic zone. They are products of evolution gone wild in an attempt to create something able to survive in a new, deadly environment. The majority of mutants die out due to terrible birth defects and other genetic problems. Those that remain have abilities that help them to survive and, ultimately, to breed and pass their abilities on to their progeny.

This unnatural warping of a creature's genetics is reflected by a Mutation Index, similar to the Bio Index of a character with bioware (see *Man & Machine* for more information on Bio Index). The Mutation Index is a measure of how far the critter can mutate before its genetics begin to completely break down, resulting in lethal cancers and other defects. A critter's Mutation Index cannot exceed its Essence (normally 6), since such critters usually die very young. Mutation Index imposes the same drawbacks of lessened immunity and longer healing times as Bio Index (p. 77, M&M).

Mutant Abilities

Mutant critters can have a number of different modifications, chosen by the gamemaster. Each modification adds to the critter's Mutation Index. Choose from the following options:

Enhanced Attributes: Mutant critters may have Attributes greater than normal for their species. Each additional attribute point adds +1 to the critter's Mutation Index. In cases where bioware-mimicking abilities increase attributes (see below), use the lower of the two costs.

Enhanced Senses: Mutant critters may have any of the abilities given under Enhanced Senses (p. 263, SR3) at the cost of +1 Mutation Index.

Bioware Abilities: Mutant critters can have mutated organs that duplicate the qualities of various pieces of bioware (see *Man & Machine* for details). Essentially, the gamemaster chooses a piece of bioware and gives the critter those abilities, adding the bioware's Bio Index to the critter's Mutation Index. Common bioware abilities for mutants include: adrenal pump, chemical gland, digestive expansion, metabolic arrester, muscle augmentation, pain editor, pathogenic defense and trauma damper.

Paranormal Abilities: Mutants may have one paranormal ability (see either *Powers*, p. 260, SR3 or *Powers of the Awakened*, p. 6, *Critters*) for +3 to their Mutation Index. The power functions using the mutant's normal Essence, regardless of current Mutation Index.

Physical Edges: The gamemaster can also choose to give the mutant a Physical Edge (see p. 18, *SRComp*) at a Mutation Index cost equal to the Edge's value.

Mutant Drawbacks

In addition to the drawbacks of their Mutation Index, mutant critters tend to have various physical deformities ranging from twisted limbs and features to mangy fur to albinism. The gamemaster is encouraged to come up with some physical changes the mutant suffers from to make it stand out from others of its kind, showing its changed nature.

Biohazard Equipment	Conceal	Weight	Availability	Cost	Street Index	Legal
Air Filter	6	1	2/24 hrs	Rating x 50¥	1	Legal
Bio-Analyzer	5	2	2/24 hrs	100¥	1	Legal
Film Badge	10	—	3/24 hrs	5¥	1.5	Legal
Geiger Counter	5	2	3/24 hrs	50¥	1	Legal
Rad-Suit	—	10	8/2 wks	5,000¥	1.5	Legal

PARANORMAL MUTATION TABLE

1D6 Roll	Result
1-2	Reduce the critter's effective Essence by its Mutation Index when determining the effect of its paranormal critter powers.
3-4	No effect.
5-6	Increase the critter's effective Essence by its Mutation Index when determining the effect of its paranormal critter powers.

Mutant Paranormal Critters

Paranormal critters like those from the *Critters* sourcebook can be mutants using the rules above, but a paranormal mutant with a Mutation Index equal to its Essence can no longer use any of its paranormal powers based on Essence. Mutation also tends to have more serious physical and psychological effects on paranormal critters, twisting them hideously and making them deranged and extremely hostile.

Mutation may affect a paranormal critter's powers. Roll 1D6 and consult the Paranormal Mutation Table.

Purely astral beings such as spirits do not mutate. They can, however, become toxic (see below).

Toxic Critters

Toxic critters are paranormals tainted by long-term exposure to a toxic domain. They can be considered the animal equivalents of toxic shamans and toxic spirits, their natural magic altered by the poisoning of the domain and the effect it has on the local mana field and astral plane. Only Awakened beings can become toxic; mundane creatures either mutate (above) or sicken and die. A physical or dual-natured paranormal can be both a mutant and a toxic critter, however, and such beasts are true monsters.

Toxic critters gain the use of a primary and a secondary toxic power (see the Toxic Critter Power Table). They can use their primary power a number of times equal to their Essence and their secondary power a number of times equal to their Essence divided by 2, rounded down. The critter regains one use of each toxic power per hour it spends in a toxic domain. Alternately, the critter can give up one of its regular paranormal powers and replace it with a toxic power, and use that power as often as it wishes.

TOXIC CRITTER POWER TABLE

Primary Toxic Powers

- Blindness
- Compulsion
- Confusion
- Engulf (Sludge)
- Enhanced Physical Attributes
- Enhanced Senses
- Fear
- Noxious Breath

Secondary Toxic Powers

- Animal Control
- Binding
- Corrosive Saliva
- Corrosive Secretions
- Immunity (Poisons)
- Magic Sense
- Pestilence
- Venom

Other possibilities include: exterior bony deposits, scabs, open sores, extra or missing appendages, discoloration, or more serious mutations such as a permanent Light wound or a critter Weakness such as Dietary Requirement (see p. 14, *Critters*).

The gamemaster can also choose appropriate Physical Flaws from p. 19, *SRComp*. As a general rule, gamemaster should try and pick at least one drawback per 2 points of Mutation Index.

Andy decides to create a mutant for his group's next run into a toxic wilderness zone.

He decides to start with a lynx (a wild cat, from p. 19 of Critters). He starts mutating by giving the lynx four levels of muscle augmentation (+1.2 Mutation Index) and +1 Body (+1 MI). Then he gives it the abilities of adrenal pump (level 1) and trauma damper for another 1.65 Mutation Index (a total of 3.85 so far). He wants it to be fast, too, so he throws in a level of synaptic accelerator, bringing the Mutation Index to 4.25. He decides to give the lynx another point of Body, giving it a total Mutation Index of 5.25. Now Andy has a mutant lynx that's fast, strong (Strength 6), and able to fight until it's dead with virtually no wound modifiers. He decides that the lynx's drawbacks include mangy fur and a skull-like face with sunken eyes. In fact, the locals call it a "skull lynx" and sincerely hope that it isn't breeding ...

Lyle wants to create some toxic critters as "pets" of a toxic shamans that characters are going up against. He decides to start with harpies (p. 32, Critters). They already have the power of Pestilence, well suited to toxic critters, so Lyle gives them the primary power of Noxious Breath, able to breathe a cloud of foul vapor, and the secondary power of Venom, making their bite poisonous. After some consideration he decides to drop the harpies' natural Pestilence power and substitute the Venom power, allowing them unlimited use of it. They can use Noxious Breath four times (equal to their Essence) before needing to "recharge." He also gives them the new secondary power of Magic Sense, allowing the harpies to ferret out magical intruders into their master's domain.



Toxic Potency

At the gamemaster's discretion, a toxic critter can have a Potency rating, just like a toxic shaman does (p. 125, *SR3*). This potency rating adds to the critter's Essence when determining the effects of its powers and grants the critter one additional secondary toxic power per point of Potency. Such critters are driven to do things that spread poison and maintain the power it gives them, and can lose Potency just like toxic shamans can. Potency ratings tend to be limited to fairly intelligent critters and even then, only to a few points.

Toxic Drawbacks

Toxic critters suffer from a Severe Allergy to purified air and water, which thankfully limits them to living in toxic domains and not roaming too far outside them. Toxic critters also often suffer from physical changes, from albinism to strange physical deformities. They also undergo a change in astral signature. Any character examining the critter from the astral plane with one or more successes on an Assensing Test knows it is a toxic critter unless the creature has the Aura Masking power and attempts to disguise its true nature.

TOXIC DOMAINS

Toxic domains are places where the natural environment has been poisoned or destroyed, warping the magical forces there and causing the nature spirits that call that domain home to become toxic nature spirits (p. 126, *MITS*). They feed on the poison and devastation of their domain, becoming twisted mockeries of what they once were.

Since only toxic shamans can summon toxic spirits, other magicians who summon nature spirits cannot do so while in a toxic domain. Nature spirits and spirits of the elements capable of crossing domain lines can enter a toxic domain, although they are reluctant to do so.

Toxic domains can be divided into four sub-types: desolate, irradiated, poisoned, and sterile domains.

Desolate domains are places where life has been wiped out on a massive scale and death stalks the land: slashed-and-burned areas of forest, death-camps, plague- and starvation-ridden areas, rotting urban decay where no one lives and so forth. Not only is the spark of life nearly extinguished, so is the fire of human hope. Toxic spirits of desolation have the additional powers of Fear and Pestilence rather than the toxic powers given on p. 127, *MITS*.

Irradiated domains are saturated with radiation that kills or mutates all living things, twisting nature in its unnatural grip. Toxic spirits in an irradiated domain emit a baleful glow that works like the Flame Aura power, rather than having Corrosive Secretions, and their Guard power can protect against the effects of radiation. Toxic shamans can also summon toxic versions of Spirits of the Flames in an irradiated domain (p. 106, *MITS*). They appear as glowing monsters of pure energy, the embodiment of radiation's unnatural power.

Poisoned domains are contaminated with various toxins: industrial waste, pollution, pesticides, chemical spills, run-offs and so forth. Toxic spirits in these domains are like those

described in *MITS*, though some may have the Venom power rather than Corrosive Secretions.

Sterile domains are perhaps the most insidious of toxic domains because they appear so normal on the surface. These are places where the human spirit, rather than the environment, has been polluted. They're regimented, cold and sterile. Feelings aren't taken into account and if they are, it's only greed and ambition that drives people. They include some high-security corporate facilities, animal testing labs, government centers, and so forth. The toxic spirits of sterile domains likewise often appear innocuous. Rather than being twisted and deformed they're often perfectly formed and idealized, but only cold, hollow shells with no true life in them. They have the powers of Desire Reflection and Influence rather than Corrosive Secretions and Noxious Breath.

TOXIC SHAMANS

Like toxic domains, toxic shamans come in several different varieties. The Avenger and Poisoner orientations described in *Magic in the Shadows* describe the relationship of the shaman to the toxicity of the environment: avengers loathe corruption, but use it as a weapon against what they see as the greater corruption of metahumanity. Poisoners revel in corruption and use it to increase their power and spread the influence of their domains. Toxic shamans can also be described in terms of the type of domain they favor (usually the domain type that first triggers their transformation into toxics).

Desolation shamans are drawn to the bleakness and despair of the wasteland. For avengers, the desolation is a weapon to turn against the parasites that infest the Earth. Disease and despair are their weapons of war against metahumanity. They are fond of cooking up plagues and other biological weapons that will ensure that humans (and sometimes even all animals) are eradicated, so that the Great Mother can heal herself and start anew. Poisoners draw upon the power of death they find in these places, the power to destroy without mercy. They, too, seek to spread devastation across the world but they're even less subtle than avengers. For them, the source of devastation doesn't matter so long as it happens. A fire is just as good as a plague, perhaps even better.

Mutation shamans see the genetic changes created by pollution as a boon rather than a curse. Avengers believe mutation is the key to either wiping humanity out (nature's defense mechanism, aided by agents like the avengers) or a way of transforming humanity into a less harmful creature that can exist in harmony with the new environment the Earth is creating. For poisoners, mutation is a true magical transformation into a more powerful form suited to live in the environment we have created. As pollution and taint spread across the world, the strong will change and survive while the weak will die, leading to the creation of a new species to rule the Earth.

Radiation shamans believe they are in contact with a new force in nature. Avengers see radiation as unnatural, but a power they can use toward their own ends. Nuclear power is perhaps the ultimate symbol of humanity's ability to destroy itself, given a push in the right direction. Once nuclear holo-



caust has scoured the world with its cleansing fire, the Earth will be free of the plague of humanity. Poisoners take the idea a step further. Radiation is the key to great power that other magicians cannot touch. An irradiated world is a world under the domination of the poisoners and their ilk, with no untainted magic for anyone else to use. The spread of radiation is the spread of a poisoner's power.

Sterile shamans are true aberrations, even among other toxic shamans. While most shamans draw their power from passion and emotion, sterile shamans are cold and calculating, devoted to the elimination of "animal" emotions. They do not even follow totems, having rejected all spiritual guidance in favor of their own personal view of order in life. Existence is less a growing organism and more a well-oiled machine for sterile shamans. Their devotion to rationality and efficiency make even the most intellectual mages uncomfortable and they seek to impose their world-view on others. The sooner they've managed to eliminate all freedom, impulsiveness, and passion from life, the better and safer it will be.

SHIFTING SANDS

Despite their remoteness, inaccessibility and stifling climate, deserts are valuable to corporations due to their natural resources and inherent security advantages. Additionally, many cultures still make their homes in the desert, relying on irrigated farming, animal herding or other means of survival.

USING DESERT ADVENTURES

Shadowrunning in the desert is much different from sprawl-running. Even with proper preparation, death lurks just around the corner. Without water and appropriate desert gear, runners are unlikely to leave alive. Desert runs are also likely to occur in the middle of nowhere, far from witnesses or help, so good transportation and an ability to deal with local desert dwellers without offending them are also important.

The following are a few examples of desert shadowrunning opportunities.

Desert Wars

The runners are hired by one Desert Wars competitor to gather intelligence on or sabotage a rival force. Sabotage may involve interference with media coverage of an event, so that certain things don't get shown. The opposition is well trained and heavily armed, so the runners have their work cut out for them. The runners may also be asked to smuggle supplies or unqualified gear, or to salvage technology left behind in the wake of a battle. Alternately, characters in a mercenary campaign can actually participate in the Desert Wars as a contender.

Resource Wars

As the corporations rapidly consume the world's remaining resources, unexploited mineral, natural gas and oil deposits become increasingly valuable. Runners may be used to attempt to put rival operations out of business or to protect shipments from sabotage or piracy.

Water Wars

Water is the desert's most precious element and desert dwellers may even kill for it. Control of an oasis or spring brings power, requiring those who hold them to protect them dearly. The runners may be asked to protect a water shipment from raiders, to taint an enemy's water supply or to liberate an oasis from a demanding warlord.

Treasure Hunt

Relics from untold civilizations lie preserved beneath the desert sands, and organizations like the Atlantean Foundation seek to unearth them. The runners may become involved in a race between archaeological teams to find an artifact first, or they may be asked to clear out the dangerous denizens from a future dig site. Some ruins have magical power, meaning that runners may become involved in a contest between initiatory groups.

DESERT HAZARDS

Desert heat and sand provide many hazards to travelers. Many of these hazards are incorporated into the Survival Test (p. 106), but gamemasters can also use the following rules.

Heat and Dehydration

Water is essential in the desert. The gamemaster should feel free to inflict Stun damage on any character who spends too much time in the direct sunlight, overly-exerts himself, wears improper clothing (armor) or doesn't drink enough water (4 liters a day, 8 liters for trolls). Dehydration and heat exhaustion can lead to confusion, disorientation, nausea and unconsciousness.

Scorching Sands

The desert sun can superheat sand, rocks and metallic surfaces to the point where they are dangerous. A character that comes into unprotected contact with a scorching surface must resist 6L Physical damage or be burned. Even with good footwear, walking on such ground can be painful: apply a +1 modifier to all actions.

Burns easily become infected, so if a character does not have his burns treated the gamemaster can choose to inflict additional damage or lengthier healing periods.

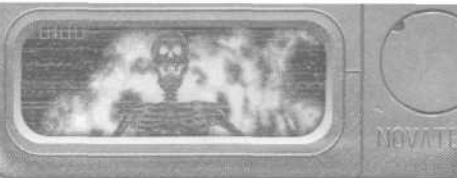
Desert Travel

Most desert terrain can be considered Difficult Ground. Steep dunes, fine sand and rocky areas may reduce movement rates by half. Especially steep sand dunes may require Climbing (8) Tests (see p. 46, *SRComp*).

Ground vehicles can become bogged down in sandy areas or rockfields. Terrain is always Restricted or Tight, and may simply be impassable. The gamemaster can impose Handling Test modifiers between +1 (gravel plains) and +4 (sand dunes), depending on the conditions.

Sand and Gear

In the desert, sand and grit get into everything. Weapons, exposed cyberware and vehicles are especially vulnerable. For cyberware that is not internal (datajacks, cybereyes, cyber-



limbs, etc) and vehicles, inflict 1 Stress Point per day in the desert. If the cybered character provides daily maintenance and cleaning for his implants, or if the vehicle has hostile environment/desert adaptation (see p. 132), only inflict 1 Stress Point per week in the desert.

Firearms (and other gear with moving parts) may become jammed or gummed up if not consistently cleaned. Each day the firearm or item is used, roll 1D6. If the result is a 1, it jams, and must be cleaned with an appropriate Build/Repair (4) Test with a base time of one hour before it will operate again. If the gear is not regularly cleaned, the gamemaster can increase the likelihood of a jam by 1 per day. For example, on Day Two, the gun will jam on a 1D6 roll of 2 or less. Gamemasters should time the jamming so that it occurs during a moment that maximizes the dramatic tension in the game.

Sandstorms

Sandstorms have several effects on characters, including reduced visibility and hearing, impaired breathing and electrical interference.

Impaired Visibility:

Sandstorms propel sand and grit, obscuring vision. Apply a modifier between +4 (mild storms) and +8 (severe storms) for visual Perception Tests for normal, low light and thermographic vision. Ultrasound vision reduces this modifier by half, as normal. Sandstorms also affect astral perception by clouding the astral plane; apply half the Visibility modifier (round down) to Astral Perception Tests.

Impaired Hearing:

The roar of wind and flying grit applies a +2 to +4 modifier for all hearing-based Perception Tests.

Flying Particles:

During a sandstorm, sand particles will get into everything. Double the amount of Stress Points inflicted and the likelihood of a jam during sandstorms (see *Sand and Gear*).

Impaired Breathing:

A character who is caught without a mask, filter or respirator during a sandstorm will find it difficult to breathe without getting grit in his throat. Apply a +1 modifier to the character's actions.

Impeded Movement:

Strong winds and waves of propelled sand make even regular movement problematic. Reduce a character's Movement rate by half during a sandstorm. Major wind gusts may even knock characters down if they fail a Body (8) Test.



Electrical Interference: Electrical gear operating during a sandstorm runs the risks of damage from the static electricity that fills the air (Internal cyberware is immune to this). For every electrical item that is on during a sandstorm, roll 1D6. On a result of 1 the item shorts out and/or blows a fuse. Anyone jacked into the device must resist 8L Stun damage from the electrical discharge. Running vehicles will suffer 1 Stress point each hour of operation during sandstorms (or 1 Stress point per day if it has hostile environment/desert adaptation). Non-insulated explosives and munitions are also vulnerable to static discharge; on a 1D6 roll of 1, they detonate.

DESERT GEAR

The following items will be useful to a shadowrunners team on a desert op.

Chemical Analyzer

This handheld device can detect and analyze the chemical composition of any material placed against its sensor pads or enclosed in its sample bin. Consider the device to have a Chemistry skill equal to its rating. It will attempt to identify the composition, chemical breakdown, properties, names and applications of all compounds present. It automatically alerts the user if it detects traces of hazardous toxins. This tool is useful for analyzing oasis water to determine it is safe for drinking.

Compressed Air Blowers

These pressurized air-blasters are essential for removing sand that gets into every nook and cranny of cyberware, electronic, weapons and other gear.

Deck Refrigeration Unit

Heat buildup in a cyberdeck or remote control deck can cause severe malfunctions at the worst possible moment. This unit is designed to combat

this problem by literally putting a miniature refrigeration unit inside of the deck. Requires a microtronics toolkit and an Electronics B/R (4) Test with a base time of 1 hour to install.

Desert Goggles

Blowing sand and intense sunlight are threats that any desert traveler needs to take seriously. These goggles protect the eyes from flying grit and bright sunlight and eliminate glare modifiers.

Desert Suit

An advanced version of a diving wetsuit, the sandwiched layers of this suit help to cool the body through heat dissipa-



tion while the reflective outer surface protects from the sun's heat. A hood, facemask and skin-tight seal keep the wearer protected from sand. The polarizing eye shield neutralizes glare modifiers. The suit even captures and distills some of the wearer's body fluids, holding the water in pockets to be drunk with a straw. Desert suits cannot be worn with armor or anything but loose, non-restrictive clothing, as it impedes the suit's heat sinks from working properly.

A character wearing a desert suit receives a -2 Survival Test modifier in desert environments.

Desert Survival Kit

These kits commonly include items like matches, flint (and a saw striker), a sewing kit, water purification tablets, a compass, a small metal mirror, safety pins, a wire saw, snare wire, a multi-tool, a solar battery charger, a mini-flashlight (two spare bulbs and rechargeable batteries), a tallow wax candle, a wind-proof butane lighter, mini-flares, three space blankets, a mini-water filter (with three spare filters), a folding shovel, a solar still, a canteen, a mess kit, multi-vitamins and a collapsing aluminum cup.

Desert Tent

This extremely compact and lightweight geodesic dome tent offers protection from heat, sand and insects. The lightweight collapsible carbon poles provide a sturdy structure that can withstand winds up to 150 kph and remain intact if buried under sand during a storm. Holds one troll or two human-sized characters.

Powdered Graphite

Graphite is an excellent dry lubricant for firearms (as opposed to oil based ones, which gum up with sand in the desert or in freezing temperatures). Good for twenty cleanings.

Seismic Mic

The seismic mic is a two-part unit: microphone rods and headphones. The 10 cm-long rods are directional pickups that are stuck in the sand. These rods pick up seismic vibrations and transmit them to the headset controls, which amplify the sounds and assist the user in analyzing them.

The seismic mic will detect moving or idling vehicles up to 5 kilometers away; it picks up moving people and animals massing more than 30 kg at a distance of 2 kilometers. The system can be set on alert status, notifying the user when it detects vibrations above a certain threshold. As a general rule, it will detect vehicles with a Signature of 10 or less and any characters that roll 8 or less on an Open Stealth Test.

Allow the listening character to make an Intelligence (8) Test to analyze the sounds heard through the mic. (Alternately, the character may use an appropriate Knowledge skill, such as

Seismic Analysis.) Compare the successes to the results listed on the Seismic Mic Table.

Snake Mesh Socks

These knee-length socks are woven from a double layer of titanium micromesh, specifically designed to prevent a snake's fangs (or other sharp penetration) while remaining light and flexible. They provide 2 points of Impact armor to attacks directed at the feet and lower legs.

Solar Still

Solar stills use principles of evaporation and condensation to extract clean, drinkable distilled water from tainted water. The still must sit in the sun; it distills up to 8 liters of contaminated water a day. The Power of any toxins or chemicals within that water will be reduced by 8; if reduced to 0 or less, it has been safely removed. Solar stills have no effect on bacteria or irradiated water.

Solar stills can also be used to collect water via condensation, even if there is no contaminated water available. In this case, however, the still produces at maximum a single liter of water per day, usually much less.

Static Wrap

This wrapping is used to store and transport explosives and munitions that are sensitive to electricity. It prevents them from being detonated by static discharges, such as those caused by sandstorms (see p. 117).

Thermal Air Bag

This sleeping bag protects the wearer against temperatures as low as 10 degrees Celsius and as high as 65 degrees Celsius. It incorporates a mattress with a battery-operated thermal compressor so it can be heated or cooled, in addition to keeping the sleeper off the ground. The batteries are good for 1 week (assuming 8 hours use per night). The bag also floats in water.

SEISMIC MIC TABLE

Successes	Results
1	Direction of the sound's origins.
2	Origin of sound (vehicle or person/animal).
3	Direction of travel.
4	Rough distance away, travel speed.
5+	Type of vehicle (car, bike, hovercraft), rough number of people/animals

DESERT MAGIC

There are many creative applications for spells, adept powers and spirits that are useful for desert conditions and survival. Desert travelers can use spells like Alter Temperature to keep cool, Shadow to create shade, or even Ice Sheet for some temporary refreshment. A Limited Armor spell against heat will protect a character from the desert sun and hot sand in addition to heat-based elemental effects. Likewise, Fast, Nutrition and Create Food spells can help sustain a character without supplies. The adept ability of traceless walk allows an adept to cross desert sands without leaving a trail and defeat seismic mics, while the temperature tolerance ability helps to protect against the desert heat (providing a -1 target modifier per level for desert Survival Tests).



Spirits can also be a boon in the desert. An air elemental's service can provide a cool, sand-free breeze for a day. Air elementals have a vulnerability to earth, however, so they despise sandstorms and suffer a +1 modifier to all actions when materialized within them. Water elementals can provide enough water to sustain a number of characters equal to their Force for one day with a service. Nature spirits (desert and wind) can use their Guard power to protect characters from sandstorms and may, if the gamemaster allows it, be able to point the characters in the direction of an oasis.

Personal Thermostat (Transformation Manipulation Spell)

Type: P • Target: 4 • Duration: S • Range: LOS • Drain: +2(L)

This is a personal (not area effect) version of the alter temperature spell (p. 146, *MITS*).

Create Water (Transformation Manipulation Spell)

Type: P • Target: 4 • Duration: P • Range: LOS • Drain: +1(S)

Similar to the Create Food spell (p. 147, *MITS*), this spell produces water from nothing. The number of successes (to a maximum of the spell's Force) equals the number of adult humans the water will provide for (about 4 liters per success). The spellcaster needs a container to hold this water, or else it may be lost.

DESERT CRITTERS

Deserts are home to many unique species of mundane animals and insects, including lizards, snakes, scorpions, hedgehogs, camels, vultures, foxes, jackals, locusts and so on. They are also home to many paranormal creatures, including: basilisks, chimera, firedrakes, flame jackals, harpies, nova scorpions, rockworms and scorpyrines. Even several varieties of shapeshifters (jackal, snake and others) are rumored to make their homes in deserts, though none are confirmed.

Black Wasps

This Awakened variant of the ordinary black wasp is native to the Namib Desert. Like mundane black wasps, they hunt trapdoor spiders, paralyzing them and injecting their eggs into the spider's body so the larvae can feed off the host (eventually killing it).

Awakened black wasps can grow much larger in size, and they also hunt other animals to paralyze and inject their eggs.

Treat infestation with wasp larvae as a disease (p. 249, *SR3*), with a Damage Code of 5D and a Speed of 96 hours. A Cure Disease spell that reduces the Power to 0 eliminates the infestation, as will proper medical care before the eggs hatch.

B	Q	S	C	I	W	E	R
2	6	1	—	1/3	3	6	6

INIT: 6 + 2D6

Combat Pool: 6

Attacks: 4L

Powers: Paralyzing Touch, Search

Dancing White Ladies

An Awakened version of the white lady trapdoor spider native to the Namib Desert, dancing white ladies dig holes into the sand, bracing the walls with cobwebs and constructing a trap door overhead. They wait for prey to pass by, then lunge out and paralyze it. Victims are poisoned and their bodily juices drained. Dancing white ladies can grow as large as a third of a meter in length. If threatened, they wrap themselves into a tight ball and roll rapidly away down the sand dunes. Several dancing white ladies sometimes lair near each other, targeting larger animals that they can all feed from.

B	Q	S	C	I	W	E	R
2	5	2	—	1/3	3	6	5

INIT: 5 + 2D6

Combat Pool: 5

Attacks: 4L

Powers: Enhanced Senses (Seismic Vibration Detection), Movement (Self Only), Paralyzing Touch, Venom

Ghazu Horses

This Awakened breed of Arabian horse is small but incredibly fast. They are highly valued by horse collectors around the world, but jealously guarded by the Bedouin.

B	Q	S	C	I	W	E	R
8	7 x 7	5	—	4/4	5	6	6

INIT: 6 + 3D6

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Chemical Analyzer	5	2	(rating)/48 hrs	rating x 50¥	1	Legal
Compressed Air Blowers	8	0.5	Always	5¥	1	Legal
Deck Refrigeration Unit	4	5	4/48 hrs	250¥	1	Legal
Desert Goggles	3	—	Always	25¥	1	Legal
Desert Suit	—	2	8/10 days	6,000¥	2	Legal
Desert Survival Kit	3	3	6/72 hrs	600¥	2	Legal
Desert Tent	2	3	4/48 hrs	400¥	1	Legal
Powdered Graphite	8	—	Always	25¥	1	Legal
Seismic Mic	3	0.5	8/1 wk	3,000¥	1.5	Legal
Snake Mesh Socks	5	—	5/48 hrs	300¥	1	Legal
Solar Still	—	2	4/24 hrs	500¥	1	Legal
Static Wrap (1m x 20m)	2	—	4/24 hrs	25¥	1	Legal
Thermal Air Bag	2	2	4/48 hrs	1,000¥	1	Legal



Combat Pool: 8

Attacks: 5M

Powers: Empathy, Enhanced Quickness (three times per day for [Essence] minutes), Magic Sense, Movement (Self Only)

Sand Chameleons

These oversized chameleons have adapted to living in desert environments, particularly in the vicinity of oases. They prey on insects and small animals, grabbing victims with unnaturally sticky tongues. Large sand chameleons sometimes grow a meter in length (not counting the tail) and target bigger animals including metahumans.

B	Q	S	C	I	W	E	R
4	5 x 3	4	—	1/4	3	6	4

INIT: 4 + 1D6

Combat Pool: 6

Attacks: 5M

Powers: Adaptive Coloration, Binding, Compulsion, Enhanced Reactions (three times per day for [Essence] Combat Turns)

Sandworms

This oversized (up to 4-meter length) variant of rockworm has adapted to sandy terrain. Sandworms can tunnel through sand dunes at incredible speed. They are attracted to vibrations caused by foot or vehicle travel, and have been known to attack victims from underneath the sand (presumably to consume the water in their victim's bodies). Rumors persist of massive sandworms dozens of meters in length, though no specimens have ever been captured.

B	Q	S	C	I	W	E	R
5/6	4 x 3	5	—	2/2	3	4	3

INIT: 3 + 1D6

Combat Pool: 4

Attacks: 5M

Powers: Corrosive Saliva, Engulf, Immunity (Heat, Pathogens, Poisons), Regeneration

ENDS OF THE EARTH

The Polar regions are unfriendly and inhospitable, but they have much to offer in terms of natural resources, privacy, scientific discoveries and natural beauty.

USING THE POLAR REGIONS

Even more than deserts, shadowrunners need to take preparation seriously before venturing into the Arctic or Antarctic. If something goes wrong with their mission, they are unlikely to be able to call for help or rescue in time. Though the climate is tolerable in the summer months, during the winter it is treacherous at best.

Runners may become embroiled in several types of Polar adventures, as detailed below.

Rescue Mission

The shadowrunners may be hired to undertake a rescue mission to a Polar station that has lost communication with the outside world. The base may suffer a natural or magical

disaster, paranormal attack, an attack by rivals or a research experiment may have gone terribly awry. The runners are being sent because the station is secret and/or because they are expendable.

Ecotage

Eco-activists outraged at corporate exploitation of Polar resources may recruit shadowrunners to help raise the costs of corporate operations to a prohibitive level. The survival of Polar stations rests on the fragile structure of power, supplies and life support that are easily disrupted. Alternately, the characters may be hired to protect a facility from eco-sabotage or to track down eco-activists interfering with corp business.

Expedition

Expeditions being launched into the Polar wastes may take on shadowrunners as expendable protection. The expedition may be an archaeological mission, a scientific research dig, a mining survey or possibly even an eco-tourist adventure taken by someone wealthy or important.

Under the Ice

Runners with nautical skills may become involved in a mission that takes them under the ice-capped frozen Polar seas. They may be sent to retrieve something from a sunken submarine, sabotage an energy plant or investigate some magical or scientific anomaly.

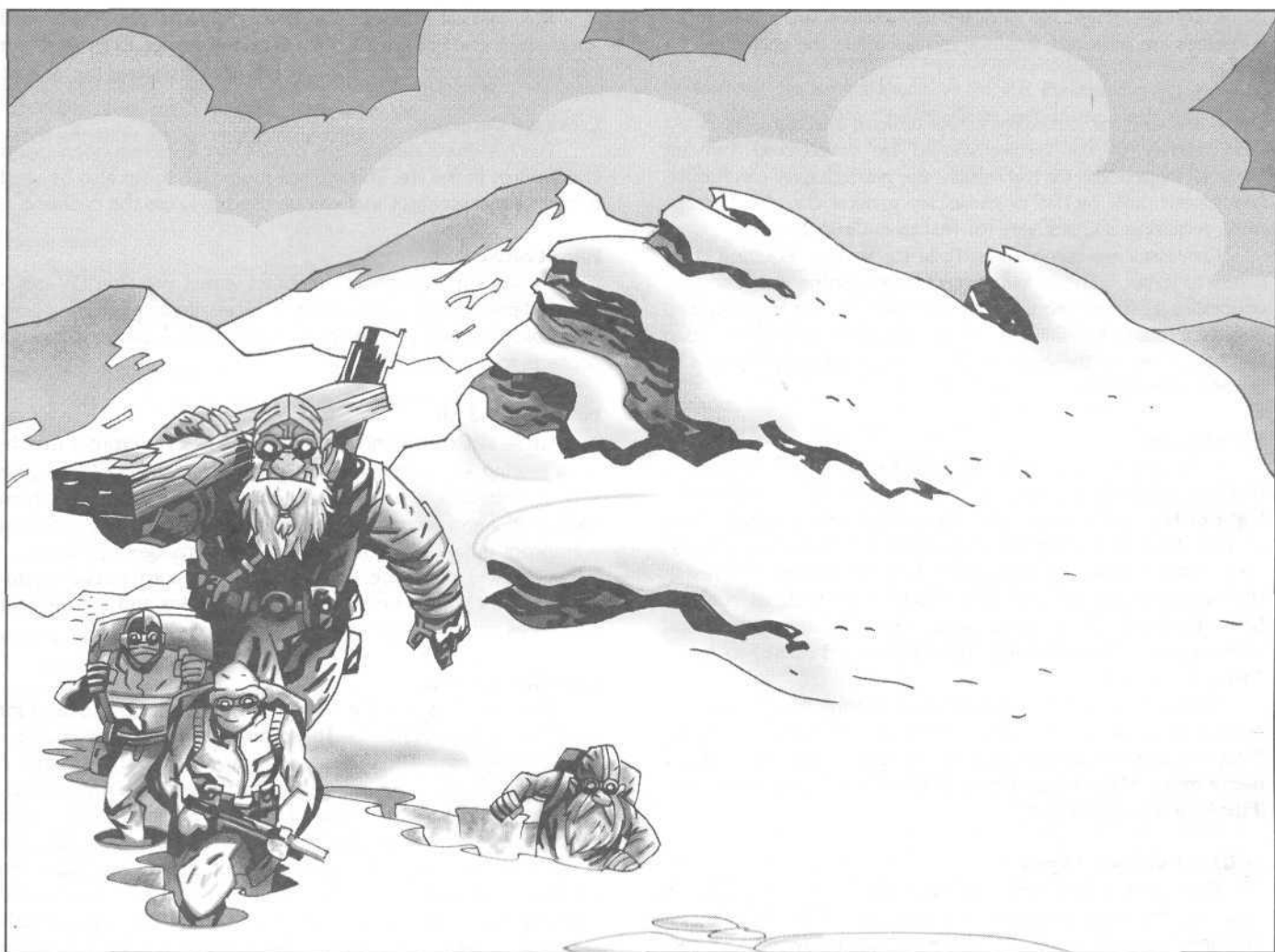
THE TRANS-POLAR ALEUT NATION

The Trans-Polar Aleut can barely be considered a nation given its decentralized nature. It is falling apart, not through internal dissent or war, but simply because the citizens no longer feel it is important to have a central government. The T-PA is a nation of vast empty stretches of land, only broken occasionally by the small village or hunting camp. Over 90 percent of the small population is concentrated in the far west and east, with very little in between.

The major friction in current T-PA affairs is the status of Iceland, or the Thule Protectorate. Though it turned to the T-PA and joined it during a time of need, many island residents are now eager to obtain independence once again. An immigrant Inuit population is clashing with the native Icelanders, and other powers such as the UCAS, Scandinavian Union and Britain are involved—largely because Iceland controls some of the richest fishing spots in the entire North Atlantic. Shadowrunners are employed by all factions to discredit opponents, manipulate public support and eliminate opposition.

POLAR HAZARDS

Surviving in the Arctic or Antarctic is one of the most demanding tasks possible for a metahuman. In polar environments, even simple tasks like breathing must be carefully monitored—dehydration is just as much of an issue here as in the Sahara, and almost everything requires more energy to accomplish. But above all the person must have a will to survive. Even properly equipped adventurers can get themselves killed if



they are unprepared for the realities of the situation. Coldness is an insidious killer. It saps the ability to think and weakens the will to do anything but get warm. Even in a roleplaying context the mental effects of cold weather are extremely important.

Many polar hazards are incorporated into the Survival Test (p. 106), but gamemasters can also use the following rules.

Dehydration and Warmth

Polar air sucks moisture from the body just like a desert, so drinking the right amounts of liquid is important. Proper clothing is important not just to keep warm, but also to keep the body from sweating during exertion since the sweat freezes. The gamemaster should feel free to inflict Stun damage on characters who are improperly clothed (too little or too much), or who don't drink enough water.

Cold characters quickly become numb, which hinders manual dexterity. Likewise, thick cold-weather gear can impede a character's movement and agility. In either case, the gamemaster can impose target number modifiers of +1 or +2 to represent this difficulty.

Sunburn and Glare

Snow and ice reflect sunlight and UV radiation (even more dangerous now, thanks to the ozone hole). Characters outdoors during the day will suffer glare penalties without vision protection; extended exposure may result in temporary snow blindness. Gamemasters may also inflict 4L sunburn damage on characters whose skin is exposed for long periods. Characters who spend time outdoors in Antarctica will pick up 1 rad each month (see *Radiation*, p. 111).

Frostbite

In the extreme cold and biting winds of the Polar areas, exposed skin can succumb to frostbite (tissue death due to extreme cold) in a matter of seconds. Whenever a character suffers a Serious or Deadly wound from extreme cold, make a separate Body Test to determine if the character suffered permanent damage from frostbite. The target number for this test is 4 for Serious wounds, 6 for Deadly. If 0 successes are achieved, one of the character's limbs has succumbed to frostbite and will require amputation. If only 1 success is achieved, the character has lost an



extremity (toe, finger, tip of nose, ear) to frostbite. If 2 or more successes are achieved, frostbite did not affect the character.

Foot Travel

Snow and ice can make travel difficult and dangerous. At best, snowy or icy terrain should be considered Difficult Ground. Depending on the terrain, the gamemaster can reduce Movement rates by half or more. Icy ground can also be slippery, requiring a Quickness (6) Test to avoid falling.

Crevasses are common on Polar ice sheets, requiring characters to jump, climb or circumvent them. Some crevasses are concealed by snow, requiring a Perception (8) Test to be noticed before a character falls in. Snow bridges sometimes span crevasses, though these are risky to cross, especially for trolls or burdened characters.

Snowstorms

Snowstorms can severely reduce visibility, especially when accompanied by strong winds. Apply the modifiers for Light or Heavy Rain from the Perception Test Modifiers Table (p. 232, SR3), as appropriate to the storm. Severe "white outs" may reduce visibility altogether (+8 to Perception Tests). Ultrasound vision reduces this modifier by half, as normal. Snowstorms also affect astral perception by clouding the astral plane; apply half the Visibility modifier (round down) to Astral Perception Tests.

Strong Polar winds may also inhibit hearing and movement; apply a +2 to +4 modifier for all hearing-based Perception Tests. If appropriate, the gamemaster can reduce movement rates by half or more. Major wind gusts may even knock characters down if they fail a Body (8) Test.

Endless Days and Nights

Characters in the Arctic or Antarctic Circles may have to deal with the long days and nights of the "White Nights" (as described on p. 50). This phenomenon may throw off a character's sleep patterns. The gamemaster should monitor the number of hours characters stay awake and apply appropriate target number modifiers for lack of sleep and exhaustion.

POLAR GEAR

Shadowrunners will find the following equipment useful for Arctic or Antarctic missions.

Coldsuit

This form-fitting, layered bodysuit of heated fabric is the ideal Polar outfit. It has two layers: an inner synthetic wicking layer that immediately transfers moisture outward away from the skin and a middle insulating layer. Both are covered with an outer nylon waterproof and windproof shell. The coldsuit also includes heated boots, a hood and a facemask with polarizing lenses (eliminating glare modifiers).

Hand protection consists of flexible gloves that allow maximum dexterity (only +1 to target numbers involving precise manual dexterity—this does not include shooting weapons). A smartlink adaptor can be included in the gloves for an extra 50¥.

The coldsuit reduces the Power of cold and cold-based attacks by 5 and provides 1 point of Impact armor. External armor can be layered over the suit at the risk of overheating the wearer.

Crevasse Detector

This handheld device uses pulse radar to detect open cracks and fissures in the ice. Though not foolproof, it can also be used to detect snowbridges that can be used to cross the crevasse.

Filter Contacts

These simple disposable contact lenses will filter UV radiation and prevent snow-blindness. They eliminate glare modifiers. Available in a variety of designer colors. A pack contains enough contacts to last 10 days.

Polar Survival Kit

These kits commonly include items like waterproof matches, a sewing kit, a compass, a signal mirror, safety pins, a wire saw, a multi-tool, a solar battery charger, a mini-flashlight (two spare bulbs and rechargeable batteries), a tallow wax candle, a windproof butane lighter, mini-flares, an emergency blanket, a folding shovel, duct tape, energy bars, nylon cord, pocket warmers, a pocket stove, a mess kit, multi-vitamins and a collapsible aluminum cup among other items.

Polar Survival Suit

Survival suits are the ultimate in personal protection for harsh arctic environments. These bulky suits have several layered components. The under layer is a waterproof body smock that functions like a diving drysuit and covers the torso, head, arms and legs. This layer also incorporates a liquid body waste reclamation system similar to the desert suit (p. 118). The outer layer is a heated, windproof parka that will allow the wearer to float and can be converted into a cold-weather sleeping bag. The gloves and boots both have retractable climbing claws (-1 to Climbing Tests) and the gloves can form into a useful shovel shape. The survival suit also includes a high-visibility, polarized full-face mask (eliminates glare modifiers) that will never fog up and an integral heater to warm the air before it is breathed. The suit can also be outfitted to include any of the accessories available to security armor (see p. 284, SR3).

Polar survival suits reduce the Power of cold and cold-based attacks by 8. They provide 1 point of Ballistic and 3 points of Impact armor. The suit also provides 4 points of thermal dampening (+4 to thermographic Perception Tests and +4 Signature). It cannot be worn with any other armor.

Polar Tent

This durable geodesic dome tent offers protection from cold, snow and wind. The light-weight collapsible carbon poles provide a sturdy structure that can withstand winds up to 150 kph and remain intact if buried under snow during a storm. Includes a chemical space-heater. Holds one troll or two human-sized characters.



Skis

Skis are excellent for Polar cross-country travel. They come with a pair of ski poles that are heated when gripped. Characters traveling cross-country over snow with skis ignore the movement penalties applied by the snow (see p. 122). Characters with Athletics skill can increase their speed in the same manner as running (see p. 47, *SRComp*).

Snowshoes

Snowshoes allow characters to walk across snow without suffering a movement rate penalty (see p. 122). A character can only run in snowshoes at half his normal running rate.

POLAR VEHICLE RULES

The following rules apply to vehicles operating in Polar conditions.

Polar Vehicle Stress

Polar conditions can be very demanding on vehicle operations. Inflict 1 Stress Point per day for vehicles operating in Polar environments; if the vehicle has hostile environment/Arctic adaptation (see p. 132), only inflict 1 Stress Point per week.

Ground Vehicle Movement

Ground vehicle travel across snow and ice is risky. Travel across snow is only possible by snowmobiles, caterpillars, crawlers, hovercraft and skimmers. Travel across hard-packed snow and ice may also be possible by ATVs, sand buggies and walkers. Terrain is always Restricted or Tight, and may simply be impassable. The gamemaster can impose Handling Test modifiers between +1 (hard-packed snow) and +4 (choppy ice), depending on the conditions. If a vehicle hits an ice sheet (sometimes covered in snow), a Crash Test is immediately called for.

Landing on Ice or Snow

Aircraft attempting to take off or land on snow or ice require double their usual takeoff/landing distance (see p. 68, *R3*). A Driving Test is always called for and the gamemaster can apply additional modifiers for deep snow or hidden ice. Aircraft with ski-skids (see p. 133) receive a -2 modifier to takeoffs and landings on snow or ice.

Sea Travel

Sea travel is risky in Polar climates. Ships may collide with icebergs or become trapped in the ice. Even undersea, icebergs are a threat as many of them float below sea level. Navigating icy areas is largely a game of luck. The gamemaster should feel free to introduce icy collisions and damage as dramatically appropriate.

POLAR MAGIC

Magic can be crucial for Polar survival, and there are many spells, adept powers and uses for spirits to aid this. Spells like Alter Temperature, Personal Thermostat (p. 119) and Limited Armor can protect a character from the freezing cold. Fast, Nutrition and Create Food spells can help sustain a character without supplies. The adept ability of traceless walk allows an adept to cross snow without sinking or leaving a trail, while the temperature tolerance ability helps to protect against the Polar cold (providing a -1 target modifier per level for desert Survival Tests). An adept with sixth sense has a chance to avoid the dangers of thin ice, unstable snow, crevasses or avalanches.

Spirits can also be useful. Fire elementals can keep a character warm with a service, or they can melt icy obstacles or snow for drinking water. Likewise, nature spirits (desert and wind) can use their Guard power to protect characters from snowstorms.

The Polar environment has several specific effects on magic, detailed below.

Nature Spirits

The polar wastes are generally considered to be the domain of desert spirits; Antarctica is one of the world's largest deserts, after all. Spirits of the sky are also appropriate, and mountain spirits may be summoned in mountainous regions. At the gamemaster's discretion, ice fields and glaciers may also be the domain of lake spirits.

White Nights

The lengthened periods of day and night can be a boon for shamans. Summoned nature spirits will stay on hand until the next sunrise or sunset, even if that is weeks away. Shamans with nocturnal/diurnal totems (or Awakened characters with an appropriate time geas) may be at an advantage or disadvantage, depending on the time of year.

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Coldsuit	—	2	6/1 wk	1,500¥	2	Legal
Crevasse Detector	8	1	8/1 wk	500¥	2	Legal
Filter Contacts	16	—	4/48 hrs	50¥	0.5	Legal
Polar Survival Kit	3	3	6/72 hrs	600¥	2	Legal
Polar Survival Suit	—	5	8/1 wk	3,000¥	2	Legal
Polar Tent	2	5	4/48 hrs	500¥	1	Legal
Skis	2	2	Always	200¥	0.5	Legal
Snowshoes	4	2	4/24 hrs	100¥	0.5	Legal



Antarctica Mana Fluctuations

For reasons unknown, the entire continent of Antarctica is under the effects of a mana surge (see p. 86, *MITS*), making magic wild and unpredictable. The length and intensity of these surges is random and unpredictable. The gamemaster decides how long to go before rolling on the Mana Surge Table (p. 87, *MITS*) again (as a general rule, roll once per day).

Aurora Polaris

The Aurora Borealis and Aurora Australis are both mana flares (see p. 100, *T:AL*) with a Force of 1D6 - 3. Occasionally, these auroras create astral rifts high in the sky above the Poles, near the level where the atmosphere meets space and mana warps. No one has yet identified where these astral rifts lead.

Tallsmongering in the Arctic

Acquiring metal and herbal materials is extremely difficult at the poles (Gathering Test target numbers of 10+). Wood, for example, is nonexistent. Arctic magicians of the Trans-Polar Aleut tribes use animal byproducts for telesma and foci (see *Animal Materials*, p. 108, *T:AL*).

Shape Snow/Ice (Transformation Manipulation Spell)

Type: P • Target: 4 • Duration: S • Range: LOS • Drain: +2(M)

This spell works the same as the Shape Earth spell (p. 146, *MITS*), except that it shapes snow and ice.

Waterbolt (Elemental Manipulation Spell)

Type: P • TN: 4 • Duration: I • Range: LOS • Drain: (Damage Level)

Splash (Elemental Manipulation Spell)

Type: P • TN: 4 • Duration: I • Range: LOS • Drain: (Damage Level)

Waterbolt throws a bolt of water at the target, causing Stun damage and soaking the target with the elemental effects of water (p. 54, *MITS*). Targets must make a Knockdown Test when hit. Fire elementals and creatures vulnerable to water take an extra Damage Level. Splash is an area effect version of Waterbolt.

These spells are especially effective in Polar conditions, as wet targets immediately begin to freeze. Unless a character is wearing a drysuit or polar survival suit, they will be in immediate danger of hypothermia and frostbite. Depending on the temperature, they may suffer both 6L damage (+1 Power each minute) and a cumulative +1 modifier to all actions each minute until they are able to get the wet clothes off, dry off and get warm.

INUIT AND ALEUT MAGIC

The tribal magicians of the Inuit and Aleut people (known as *angatkuaq* among the Inuit) are invariably shamans. They traditionally follow totems appropriate to their environment: Dog, Elk, Fish, Moon, Polar Bear (Bear), Sea, Sea King, Sky Father, Sun, Walrus, Whale or Wind. The majority of these shamans are wilderness shamans (see p. 16, *MITS*). Aspected conjurers and shamans are also common, and most *angatkuaq* prioritize Conjuring and dealing with spirits over Sorcery. They are also well versed in the metamagic technique of channeling (p. 109, *T:AL*).

Tupilak

Angatkuaq sometimes create magical creations for vengeance known as *tupilak*. In game terms, *tupilak* are ally spirits (p. 107, *MITS*), usually created with the inhabiting power (p. 108, *MITS*). *Angatkuaq* sometimes use the bodies of deceased animals (or even dead metahumans) when creating *tupilak*, though they also create homunculi from body parts and other materials. It is rumored that some *angatkuaq* have access to secret rituals or metamagic techniques that allow them to create *tupilak* with the spirit powers of Accident and Fear.

POLAR CRITTERS

The following critters appear in Polar environments.

Ice Snake

Ice snakes are not really snakes, but a form of Awakened weasel. Their small vestigial claws retract into fur-hidden pockets and are rarely used, except for climbing around obstacles or burrowing through snow. Ice snakes average over a meter in length; they are cunning and vicious, with no fear of man. They both lair and travel beneath the snow, living in packs of three to five adults and several offspring. They are found in the Arctic regions and further south.

B	Q	S	C	I	W	E	R
3	5 x 4	3	—	2/5	3	6	5

INIT: 5 + 2D6

Combat Pool: 6

Attacks: 5M, -1 Reach

Powers: Enhanced Senses (Low-Light Vision), Immunity (Cold)

Silap Innua

Also called "frosties," *silap innua* are malicious spirits that materialize as snowstorms. Found only in Antarctica, they sometimes attack in groups.

B	Q	S	C	I	W	E	R
F	(F + 3) x 4	F - 2	F	F	F	(F)A	F + 2

INIT: F + 12 + 1D6 (Physical), F + 20 + 1D6 (Astral)

Pools: Combat (F + 1), Astral Combat (

Attacks: (F)M

Powers: Accident, Confusion, Fear, Innate Spell (Lightning Bolt), Magic Sense, Materialization, Weather Control

Weaknesses: Vulnerability (Fire)

UP THE GRAVITY WELL

Thanks to Halley's Comet hype and the excitement of the probe race, there is a surge of renewed interest in space—and not just by the corps. Orbital tourism is booming, space industry is revving up and exploration of the solar system is the talk of the town. Old stations are being revamped and new colonies are being planned. The independent orbital community—scavengers and freelancers who aren't corp employees—is spreading. As more people rush into space, there are more opportunities for shadowrunners to sneak aboard and get things done.

RUNNING ADVENTURES IN SPACE

Some gamemasters write off the possibility of running *Shadowrun* adventures in space. Space is the domain of the



corps, so it is assumed they rule with an iron hand and ultra-tight security. Using heavy weapons runs the risk of hull decompression, which can kill everyone. Furthermore, magic doesn't work in space, so magically active characters are out of luck.

While these things are true, all this really means is that the focus of the adventure should shift away from violence and toward problem solving and roleplaying. There's a common saying in the shadows: the run is fragged if the guns come out. This is particularly true in space.

The following run ideas are just a few ways that shadowrunners can become involved in a space-related plot.

Salvage Run

The runners may be sent to escort a mission that intends to retrieve or pillage an old satellite, abandoned station, derelict spacecraft or other piece of space junk. To complicate matters, other parties may have sent their own teams to get the goods first. Alternately, the runners may be sent along on a rescue mission for a station or craft that has lost life support. The runners need to find out what went wrong and who—or what—survived.

Orbital Datasteals

Espionage is big business in orbit, and runners are needed to liberate files, steal samples from labs or commandeer satellite info. The risks are high but the rewards are good, and the runners are likely to have a corp backing them up.

Space Vice

As the orbital population expands, the demand for illegal goods and services will also grow. Syndicates will be taking the launch into space in an attempt to control these new markets, and they'll be in need of made men, legbreakers and smugglers. Bribes need to be made, records need to be erased and someone needs to get their hands dirty. Space-made products like Star Dust are also highly valuable dirtside, and strife is likely to develop over control of the distribution networks.

Sabotage and Network

Like Polar environments, space stations and projects are vulnerable to sabotage, relying on complex life support systems for safety. Spacecraft and probes are also good targets for sabotage, as the recent Probe Race proved. Logistics and repairs are costly, so a good structure hit can put a rival out of business. This type of work is likely to develop around the LaGrange points.

Deep Space Exploration

Several megacorps are beginning to make deep space exploration efforts towards Mars, the asteroid belt and the outer planets. Since deep space exploration itself can take months or years, they are not recommended for adventures themselves. It's more likely that characters may be involved prior to the expedition's departure or immediately after their return. In the first case, characters may either be sabotaging the launch to prevent or delay it long enough for a competitor to get a head start. In the second case, they would likely be intercepting the results of a survey before they disappear into corp hands on Earth.

USING THE SPACE PLAYERS

While corps are the dominant players in outer space, this does not mean that runs don't take place there. In fact, the opposite is true: because the corps rule space, they need shadowrunners to do their dirty work.

Commercially speaking, space is a joint venture. Ironically, the corps who generally can get into space don't have the expertise to fully exploit its commercial value, while the corps that have the interest and expertise to exploit space's potential don't have the means to get there. As a result, many corps enter into a limited partnership, with the corps able to get into space selling launch rides and leasing orbital space to those with the research and expertise to exploit zero-gravity. This can result in a complex web of corporate intrigue and politics, as two corps may enter into a partnership due to competition from a mutual rival.

The web of partnerships and leasing arrangements also provides an effective cover for characters to get into space unnoticed. By posing as employees of another company, characters can gain access to a corp that is either a customer or service provider for their target corp.

Not all space stations are purely dedicated to research and development. Some provide commercial distribution to a network of space stations, and not all of them belong to the same corp. A growing field of space commercialization is tourism and recreation, with Yamatetsu opening the first space resort while Ares and other corps have plans to do the same.

Similarly, not everyone in space is affiliated with a corp. Some are freelance pilots or technicians who perform legitimate work in which the corps see no profit: cleaning up space junk, delivering supplies to customer corps and so on.

Another important fact to keep in mind is that while the corps run the show in outer space, ordinary men and women do the actual work. Living in space is hard, and there are few means available to relieve stress. And with human nature being what it is, wherever people go, they take their bad habits with them. Shadowrunners can provide an important service in this respect, smuggling contraband or catering to vices that workers in space desire.

SPACE OBSTACLES

Gamemasters should consider the following concerns before setting adventures in space.

Small Community

In space, weight and volume are money. It costs the corps a lot of money getting space stations into orbit, so they will streamline and economize space as much as possible. It helps that in a weightless environment, there is no "up" or "down," so the "walls" and "ceilings" can be utilized as floor space.

As a result, space stations are generally small, close quarters, and the population of any space station will be very small. Most space stations have a population in the dozens, and the larger stations (Apollo, Shibanokuji, or Daedalus, for example) only have a population in the hundreds, only scraping past a thousand for the very large ones. The close quarters and small population creates a close-knit environment, where everyone generally knows everyone else and it's hard to keep a secret.



Gamemasters should play up the close confinement of space stations. Characters with claustrophobia will suffer frequent anxiety attacks while in space. Furthermore, trolls and troll variants will find space especially confining, as the cramped conditions simply will not accommodate their huge frames.

Additionally, the relatively small community in space makes it easier to locate people and harder to keep a secret. A -1 modifier applies to all Etiquette Tests made to locate Friends of Friends (see p. 62, *SRComp*); a -1 modifier also applies to Wrong Party Tests (see p. 63, *SRComp*).

Space and Violence

Violence in space should be kept to a minimum because space stations have thin hulls to keep construction and maintenance costs down. One stray shot can create a big hole in the bulkhead, resulting in explosive decompression and killing everyone involved.

Gamemasters should keep this in mind when planning *Shadowrun* adventures set in outer space. If players try to bring weapons into space (especially heavy weapons), the gamemaster should make it difficult, if not impossible. Security is tight on obvious heavy weapons and armor, but it may be less tight on lighter concealed or nonlethal weapons. Since some players may be more inclined to reach for their guns when the opposition is brandishing them in plain sight, it may be more prudent to give the opposition highly concealable weapons. Similarly, using heavy armor tends to encourage heavy weapons, so gamemasters may want to refrain from giving NPCs heavy armor. Furthermore, the corps have one special weapon they can use: cutting off the oxygen supply. All the armor in the world means nothing if the characters can't breathe.

Matrix Lag Time

Due to the vast distances involved, Matrix communication between stations on the ground, in orbit or on the Moon may suffer from signal lag. Communication between the Earth and the Moon, for example, takes a full Combat Turn—each way. (Meaning that if you ask a question, you won't hear a response for 2 Combat Turns.) The gamemaster determines exactly what effect this has on Matrix operations, based on the distances involved. At the least, characters in the Matrix should suffer -2 to their Matrix Reaction. At worst, they may only be able to act once every other Combat Turn.

LOW AND ZERO GRAVITY

Most locations in space are weightless environments, where there is no gravitational pull to hold characters to the "floor." Furthermore, in those locations that do have gravity (either natural or artificial), the pull is significantly less than it is on Earth.

The local gravity environment is defined by its g-strength, expressed as a multiplier of the natural gravitational pull at sea level on Earth. Most space stations with an artificial environment due to spin have a gravity field of 0.8g. The moon has a gravity of 0.16g. A weightless environment has a gravity of 0g. The weight of any object is equal to its nor-

mal weight on Earth multiplied by the g-strength. (For purposes of encumbrance, a weightless environment has a g-strength of 0.05g) For example, an AK-98 has a weight of 6 kilograms on Earth, so on the moon (0.16g) its weight is $6 \times 0.16 = 0.96$ kilograms.

Movement

A reduced-gravity environment makes it easier for characters to move quickly but makes it harder to turn or stop. A character's walking or running speed in space is equal to his or her normal movement rate divided by the g-strength, rounded down. Characters receive a +1 modifier, however, to any physical actions involving movement; this includes the ranged combat modifiers for the attacker running or walking (p. 112, *SR3*), as well as the Dodge Test (p. 113, *SR3*). Additionally, whenever a character runs in low gravity, he or she must make a Quickness (4) Test to stop. If the test fails, the character loses control and falls prone. Characters may use the Athletics skill as a Complementary skill for this Quickness Test (and also any other Quickness Tests described below.)

In zero gravity, characters cannot run or walk normally because there is no weight for a character to achieve footing. (With the exception that some stations are equipped with velcro strips on surfaces, so characters with velcro slippers can walk/run at half their movement rate.) Instead, characters may move in one of two ways: crawling or flying.

Crawling is the easier method and entails pulling oneself along using any available handholds (seat backs, overhead compartment handles, other passengers, and so on). A character can "crawl" a number of meters equal to half their Quickness per Combat Turn; characters can make an Athletics (4) Test to crawl faster, with every 2 successes adding another meter. At the end of each turn crawling, the character must make a Quickness (4) Test. Failing to get even one success means that the character has lost his grip and starts floating off in a random direction. If the character rolls all 1s, he becomes disoriented and spends his next action trying to get a grip and steady himself. He suffers a +2 target number modifier to do anything else.

Flying occurs when the character launches herself from Point A to Point B without using any handholds in the process. A character can "fly" a number of meters equal to her Strength per turn. Flying requires a Quickness (6) Test prior to moving to make sure she propels herself in the right direction. While in flight, a character can't change the direction of travel, but she can change her facing while in flight if she makes a Quickness (8) Test. To land properly, the character must pass a Quickness (5) Test; a bad landing means the character hurt herself and must resist 4L Stun damage. See the rules for crawling for the effects of rolling all 1s.

Combat

Fighting is difficult in either low gravity or zero gravity. In low gravity, a +1 modifier applies to all target numbers for throwing objects, using projectile weapons or resisting knockback. Uncompensated recoil modifiers increase by an additional +1. An additional +1 modifier applies to any attacker movement and also to the Dodge Test.



In zero gravity, a +2 modifier applies when throwing objects, firing projectile weapons or resisting knockback. Also, any characters involved in melee combat must make a Quickness (5) Test at the end of the Combat Turn or fly off in a random direction.

Uncompensated recoil modifiers double in zero gravity. If a character is not braced when firing a weapon in SA, BF or FA mode, he or she flies backward at a rate equal to the unmodified recoil in meters per turn. If a character flies off because of recoil, he or she must make a Quickness (5) Test to stop.

Long Term Effects

If a character spends more than a few days in space, he or she will suffer some long-term effects from living in zero gravity. For example, a human's height will stretch by 5 cm, the bones lose calcium and weaken, blood pressure drops, and muscles lose tone and develop slight atrophy. Drugs and exercise can counter these effects, but the effects still occur.

Whenever a character spends more than 24 hours in zero-gravity, he or she receives a +1 modifier to all Body and Strength-related Success Tests. After another (Body) or (Strength) days in zero-gravity, the modifier increases to +2. Every (Body) or (Strength) days after that, the character will lose 1 point in that attribute. If a character's Body or Strength reaches zero, he needs to be hospitalized and treated or he will die. Attribute loss can only be recovered through a combination of medical intervention and Karma.

Taking prescribed drugs and exercising will prevent the onset of this physical degeneration. A character that pops the pills (1¥ a day) and works out will reduce the modifiers by 1 for the next 24-hour period. The physical degeneration also begins to wear off once a character returns to a gravity environment (such as the centrifuge in certain space stations). Reduce the modifiers by 1 for every twelve hours spent in a gravity environment.

Low-gravity environments less than 0.5 g (such as the moon) have the same effect, but the modifier will never rise above +1.

SPACE HAZARDS

Decompression, spacesuit leaks and hull breaches can kill quickly, so characters should be prepared to deal with them quickly.

Decompression

Decompression occurs whenever a character is exposed to outer space (either from explosive decompression, or by all the air escaping from a suit leak or hull breach). Unless the character takes appropriate countermeasures, he or she will quickly die from a combination of asphyxiation and severe hypothermia from the harsh, debilitating conditions (temperatures around -270 degrees Celsius and negative vacuum pressure). The character's surface capillaries will burst, their body will swell and their eyes will slightly bug out (distorting vision).

Characters who are exposed to space suffer a +2 modifier to all actions and automatically take one box of Stun damage per Combat Turn. After ten boxes of Stun damage have been inflicted,

the character will take one box of Physical damage each Combat Turn until dead.

Holding one's breath will not help, and in fact damages the lungs, so the effect is the same. Characters are likely to pass out, however, when the flow of oxygen to their brain ceases. To represent this, at the end of each Combat Turn after the third, the character must succeed in a Willpower (6 + damage modifiers) Test or fall unconscious. If the character holds his breath (see p. 47, *SRComp*) or has an internal air supply (air tank cyberware, oxy-rush nanites), he will not need to make this test until four Combat Turns after the air supply runs out (by which time the Stun damage will have gotten them anyway).

If the gamemaster chooses, exposure to space may also inflict 1 point of Stress each Combat Turn on implants.

Suit Leaks

Any time a character in a spacesuit sustains a hit that can cause Physical damage, there is a chance of creating a puncture large enough to cause a leak. Whenever a character has to make a Damage Resistance Test, make an additional Success Test with a number of dice equal to the Damage Level inflicted (1 for L, 3 for M, 6 for S, and 10 for D) against a Target Number of 6. If the test succeeds, the suit is breached and will not protect the character from open space; apply the effects from decompression as described above. Each success represents one puncture hole in the suit.

If a character's suit is breached, a character can attempt to patch it. If performed in the middle of combat, the character must spend a Complex Action and make a Quickness (6) Test to succeed. Each hole must be patched separately. If performed out of combat, the attempt succeeds automatically, but it takes a minute to properly patch the suit.

Devis is sneaking around the outside of the Camelot space station when a corporate security guard jumps him. Fortunately Devis came prepared and slashes the guard with a monofilament whip.

In addition to the Damage Resistance Test, the gamemaster makes a Success Test to see if Devis punctures the guard's suit. A monofilament whip has a Damage Code of 10S, and Devin only achieved one net success, so the gamemaster rolls 6 dice (Damage Level of 5 equals 6 boxes of damage) against a Target Number of 6. The gamemaster gets one success, so the suit is breached.

Hull Breaches

Space station hulls are thinner than normal buildings, because it's expensive to lift thick-walled stations into orbit. Space stations have an equivalent Barrier Rating of 8. If a weapon creates a hole to space in the hull (see *Barriers*, p. 124, *SR3*), the room decompresses to open space. Characters must make a Strength (4) Test to avoid being jettisoned into open space. Apply a +1 modifier for each extra half-meter of hole. At the beginning of the next Combat Turn, characters in that room will suffer from decompression as detailed above.



WEAPON EFFECTS IN SPACE

Firearms do not function in outer space unless modified to accept an air tank connection. Modifying a weapon to accept an air tank connection increases the cost by an additional 50 percent. Explosives (including rockets and missiles) also do not function in space unless built with an integral oxidizer. Explosives built with an integral oxidizer also cost an additional 50 percent more than their normal counterparts.

Laser and energy weapons fired in outer space do not lose Power over range, since there is no atmosphere to diffuse the beam.

RADIATION AND SOLAR FLARES

In space, characters do not have the luxury of Earth's ozone layer and atmosphere to protect them from cosmic rays. Most space stations and Lunar colonies are built with enough shielding that radiation is not a regular concern, though characters who spend enough time spacewalking or in a spaceship will pick up about 1 rad a month.

The real danger comes from solar flares that can generate enough radiation to kill a person. Though solar flares are rare, they can be used as an effective plot device. Solar flares can generate 1D6 rads per hour and will last 1D6 days. During this period, space station personnel are likely to take shelter within specially constructed shielded chambers with food, water and amenities.

SPACE GEAR

Runners who leave the confines of Earth will find the following items useful.

Spacesuit

Spacesuits are designed to keep the user at a comfortable temperature and standard air pressure in the vacuum of space. A thermal underlayer handles ventilation, provides liquid cooling and removes odors. The torso and backpack unit provide life support, bio-monitoring, control and backup units. The helmet includes communication systems and a drink bag.

Spacesuits require a base time of 5 minutes to put on; successes from a Quickness (4) Test can reduce this time. Spacesuits are designed to be as idiot-proof as possible, with built-in alarms, notifications and step-by-step automated instructions to users who aren't practiced in putting them on.

Spacesuits require 1 hour of maintenance for every 12 hours of use. If a spacesuit doesn't get this maintenance, roll 1D6 each time it is used. On a roll of 1, the suit develops a potentially fatal failure: a cracked seal, an air leak, temperature or power failure, etc. Increase the likelihood of a failure by 1 for every additional 12 hours of use without maintenance (fails on a 1D6 roll of 1 or 2 after 24 hours, and so on).

The spacesuit's built-in oxygen supply lasts for 12 hours. The power supply lasts for 24 hours before it needs recharging. The polarized faceshield eliminates glare modifiers. The biomonitor functions as described on p. 303, SR3. Finally, the suit provides 2 point of Ballistics and 3 points of Impact armor. No other armor can be worn.

Spacesuits can be equipped with any of the helmet and communications options (except ultrasound) available to military armor (p. 51, CC). They also come with 5 emergency slap patches (additional patches cost 50¥ each).

Security Spacesuit

This is an armored version of the standard spacesuit for use by security personnel. It provides 6 points of both Ballistic and Impact armor.

Spacesuit Maneuvering Unit

This nitrogen-propelled backpack attaches to the spacesuit and allows the user to fly in zero-g with precision using rotational and translational hand controllers (or virtual dashboard). A character using a maneuvering unit can accelerate and brake up to 10 meters per Combat Turn. To accelerate and brake in the right direction, the character must succeed in an Intelligence (6) Test. Likewise, to change direction during flight requires an Intelligence (8) Test.

Maneuvering units have enough fuel for 30 "burns" (each acceleration, brake and direction change counts as one burn).

Survival Bubble

This self-inflating mylar bubble is designed for escape and survival in the case of emergency decompression. Taking only one Combat Turn to inflate around the user(s), the sphere features transparent windows, an airlock, 24-hour oxygen supply (per person), emergency food and water rations, a homing beacon (100 kilometer range), a medkit and a built-in, stripped-down version of the spacesuit maneuvering unit (with 10 "burns"). The rating of the bubble is how many people it will hold (maximum 6).

MAGIC IN SPACE

All locations in space are mana warps (see p. 85, MITS). The background count for most locations in outer space is 10. Certain stations, due to their population and activity, may have a lower background count (9 or 8). The moon has a background count of 8.

Some corps conduct theoretical magic research in space, since the lack of mana actually acts as a form of protection against potential backfires. A magician's Magical Background Knowledge skill would be very helpful on these types of adventures.

VEHICLES IN SPACE

In general, vehicle rules only apply when performing close maneuvers within the vicinity of a space station or on the surface of the moon, asteroid, or planet. Long distance travel (such as from the earth's surface into orbit, or from one station to another) should be handled through narration and roleplaying. The Long Distance Space Travel table lists travel times for most destinations. Note that it is impossible to make a direct trip from the Earth's surface to the LaGrange points or the moon; the fuel requirements are not commercially viable.



A spacecraft making a long distance trip has to travel a safe distance from the station before making the launch to its destination. It takes 10 minutes for a spacecraft to get to the safe-launch zone. When a spacecraft is beginning or ending its long distance run, it takes 15 seconds (5 Combat Turns) for the craft to change its attitude and pitch from one travel mode to the other. During that time the craft suffers an additional -10 modifier to its Maneuver Score. A suborbital in the midst of its long distance run cannot be engaged in vehicle combat; the speeds and distances involved make it practically impossible for vehicle combat to occur.

Braking

Normally, vehicles can safely decelerate at a rate equal to their Acceleration times 4. Spacecraft flying in space, however, do not have atmospheric friction to help slow them down. Their safe decelerate rate is equal only to their Acceleration rating. This does not apply to ground vehicles (such as lunar buggies) traveling across a surface when there is gravity presence.

Speed and Stress

Spacecraft in flight do not incur Stress for exceeding their Speed or Acceleration ratings. All other modifiers (such as the +1 modifier to Vehicle Tests), however, are still in effect. If a spacecraft exceeds its Speed by more than 1.5 times the normal rating, the modifier increases to +4. Characters cannot pilot a spacecraft at speeds more than 2.5 times its Speed rating; the autonavigation system must take over at this point.

RUNNING DEEP

The *Riptides* chapter provides updated info on events that started in *Portfolio of a Dragon: Dunkelzahn's Secrets* and were continued in *Target: Smuggler Havens*. Gamemasters will also find the underwater rules presented in the *Cannon Companion (CC)* useful.

USING DEEP SEA ADVENTURES

Riptides includes enough relevant data on corporate agendas and specific projects to involve runners in datasteals and B&E contracts without them ever setting sight on water. Thus, gamemasters uncomfortable with running oceanic-based

LONG DISTANCE SPACE TRAVEL

Origin	Destination	Travel Time
Earth's surface	LEO	2 hours
Earth's surface	GEO	12 hours
LEO	Earth's surface	1 hour
LEO	LEO	1D6 hours*
LEO	GEO	8 hours
GEO	Earth's surface	2 hours
GEO	LEO	2 hours
GEO	GEO	2D6 hours*
LEO/GEO	L1	12 hours
LEO/GEO	L3/L4/L5	36 hours
LEO/GEO/L4/L5	Moon or L2	72 or 84 hours
L1	L4/L5	12 hours
L1	L3	36 hours
L1	Moon or L2	60 or 72 hours
L3	L4/L5	24 hours
L3	Moon or L2	84 or 96 hours

* Depends on destination or may be randomly determined.

Note: Unless otherwise noted, it takes the same time to make the return trip back.

adventures can still use this section for dry land fun. Conversely, if characters enjoy getting their feet wet, then *Riptides* ups the ante to fuel subsequent adventures. There is plenty of nuyen to be found floating on the ocean's surface, and plenty of danger swimming just beneath.

Deep Penetration

Runners hired for deep sea runs may find it necessary to access the undersea station to conduct a lab raid, extract personnel, steal paydata or sabotage experiments. The runners will either need to subvert the security on the corporation's access channels or they will need to find their own undersea transport and access the station from the outside, at the bottom of the ocean.

Piracy

Though some aquacologies are self-sufficient, many are not, requiring regular shipments of food, medical supplies, research equipment, entertainment goods and so on. The supply vessels that conduct these runs are natural targets for characters in a pirate campaign, especially if they are carrying valuable gear or

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Spacesuit	—	25	16/1 mo.	15,000¥	3	Legal
Security Spacesuit	—	35	20/2 mo.	25,000¥	5	2P-L
Maneuvering Unit	—	25	16/1 mo.	2,500¥	3	Legal
Survival Bubble	—	rating x 10	8/2 wks	rating x 1,000¥	2	Legal



data. Alternately, the runners may be hired to protect such shipments from pirate predators.

The Lost Continent

Mitsuhaman and the Atlantean Foundation may be involved in a secret search for relics from the lost continent of Atlantis. Whether this archaeological project is as upfront as it seems remains unclear—the parties involved may have other agendas. Other factions with agendas of their own may become involved, from Humanis to other megacorps to other archaeological groups, each eager to prove their own theories.

Rescue Mission

Deep sea stations may suffer disasters, whether the result of sabotage, undersea paranormals or simple accidents. The runners may be hired to retrieve research projects, data or even trapped personnel from a deep sea city-turned-tomb. The runners may be working for the station's owners or a rival that hopes to access the left-behind goods first.

DEEP SEA HAZARDS

There are a hundred ways to suffer beneath the waves and none of them pretty. *Cannon Companion* (pp. 107–112) already detailed the basic threats one can uncover beneath the waves, but here is an additional problem runners might face.

Cyberware and Atmospheric Pressure

Cyberware is a fickle mistress that does not often respond well to exotic atmospheres or high pressure. So if nitrogen, for example, slows down nerve conductivity, would it not stand to reason it would also have an adverse affect on certain implants? This type of wear-and-tear uses the stress system found on pp. 125–126, *M&M*, to simulate the rigors of the ocean on implants.

In pressure-related matters, when a character descends beyond 200 meters (20 atmospheres ambient), the player should make a Stress Test using the implant's grade to determine the number of dice rolled. The result indicates if a piece of cyberware picked up Stress Points or if the body provided enough insulation to protect it from adversity. Every 200 additional meters ambient requires another Stress Test, but whether the character rolls for each piece of equipment or randomly determines which one will likely malfunction is up to the gamemaster. The gamemaster may also rule certain equipment immune to pressure stress like internal headware (with exception to tooth compartments) because the character's cranial fluid acts as an ambient pressure buffer.

Conversely, exotic atmospheres do have their own share of problems, with exception to nitrox, a high-oxygen mix gas. Heliox, on the other hand, conducts heat six times faster than nitrogen. While this may light up thermograph targeting like sun reflecting off ice, helium also increases the chance for ear infections and cyberear malfunctions. For this, the character needs to make a Body (4) Test to resist an inner ear infection and a Stress Test for the cybernetic implant in question. Communication systems also suffer because the helium contracts the vocal chords and alters its transmission across the body's empty cavities. Helium turns voices shrill and high-

pitched, making it impossible for characters to use implanted subvocal microphones, radios and telephones properly. Their transmissions squeak with static and the occasional word. Trimix is a slightly warmer medium, so the effects are less severe. In either case, the equipment still suffers from adverse conditions, warranting Stress Tests to represent the wear on their components.

DEEP SEA SPELLS

Currently magic plays a greater role in undersea exploration and development, especially when dealing with pressure differentials and gas toxicity. Some spells have new applications. Detox, for example, can eliminate the intoxicating effects of nitrogen narcosis. Other spells, like Oxygenate, may carry sinister connotations if spellcasters adjust them to poison the blood of enemies deep underwater (where oxygen is toxic). If the oxygenate spell is sustained upon a character deep underwater, that character will suffer from oxygen toxicity (p. 109, CC), taking one box of Physical damage per minute until the character either ascends or the spell is dropped.

Alter Pressure (Transformation Manipulation Spell)

Type: P • Target: 4 • Duration: S • Range: LOS (A) • Drain: +2(S)

Alter Pressure is a nasty spell that increases or decreases the pressure within a radius of Magic x 10 meters. Every success translates as a one-atmosphere shift above or below the ambient pressure, with the spell's force dictating the maximum successes allowed (therefore a Force 4 spell could potentially add or remove four atmospheres). As a general rule, the pressure level increases by one level every 10 meters you descend underwater (roughly).

This spell can have devastating effects on deep sea stations, usually by triggering the life support safety systems. High-Force spells may create a pressure shift that is drastic enough to crack exterior walls, pop seals and otherwise bring the outside sea caving in. The spell may also affect the pressurized cabins of air-planes at high altitudes. Ultimately, the gamemaster determines the exact effects based on the circumstances.

This spell may indirectly affect characters that stay within its area of effect for too long. Characters may suffer from oxygen toxicity, decompression sickness, nitrogen narcosis or other hazards described on pp. 109–111, CC. Likewise, this spell can be used to acclimatize a character who has ascended from the depths in the same manner as a hyperbaric chamber.

WEAPONTECH

Resistance and pressure have always inhibited underwater weapons, but most manufacturers have tried fighting these effects through propulsion rather than through lateral thinking. The following weapons, however, use the oceans' medium to their advantage. With exception to olfactory camouflage, they are not available on the streets, however, and are left to the gamemaster's discretion.

Hydrostatic Pulse Buffers

As described on p. 98, this weapon uses explosive compression to damage targets at close range with a hydrostatic



pulse. The baffle-cannon inflicts anti-vehicular armor-piercing damage. The force of the attack diminishes over range, however; reduce the Power by 1 for each meter traveled.

Olfactory Camouflage

This biochemical compound uses a thermal container to store bioactive hydrogel, which keeps the trimethylamine oxide cultures active. When exposed to cold water, the hydrogel melts slowly and bleeds trimethylamine oxide into the ocean. This helps disguise a diver's scent from predators, but it is not akin to invisibility. Olfactory camouflage will not mask the smell of blood, nor will it dissuade sharks from attacking if they see the user. Instead, it keeps paracritters from smelling the user in the water and investigating on that basis alone.

Screaming Mimi

The screaming mimi is a reinforced smart mine designed to handle deep-pressure stress (it has a maximum depth of 1 kilometer). Buried on the ocean floor, the mimi has a Concealability of 6. The screaming mimi uses acute hydrophones and water displacement sensors to detect large moving objects. A "friend or foe" protocol identifies targets through sonar-profiles, noise signatures and weight-to-water displacement ratios.

Once the screaming mimi has identified a target as hostile or foreign, it launches towards the intruder and attempts to latch on. If the target is biological (sea-life), the drone uses an electric-catalyst adhesive (Strength 7) to attach itself to the skin; otherwise it relies on magnetic arm clamps (Strength 7) for vessels.

When it latches onto the target, the mimi emits oscillating pressure pulses that broadcast between 10 and 60,000 hertz. This oscillating scream lasts for one full minute (20 Combat Turns).

The barrage of white noise serves a dual purpose: First and foremost, the noise deafens sonar and hydrophones, adding a +3 modifier to active Sonar Tests. The Sonar Signature of the vehicle the mimi is attached to is also reduced by 3 for passive Sonar Tests (thus acting as an early warning system for nearby stations).

Secondly, the sound vibrations through the ship's hull can affect the ship's crew in a manner similar to shock weapons. Crew members in the targeted vessel must resist 12L Stun damage; reduce the Power by 1 for every 5 meters the crew member is from where the mimi is attached. Crew members that suffer damage must also succeed in a Body or Willpower (6) Test. Those that fail are incapacitated from nausea and retching until the screaming stops; those who succeed still suffer a +2 modifier to all tests from the sonic disorientation for as long as the mimi's scream is active. Additionally, apply a +2 modifier to all hearing-based Perception Tests within the vessel while the mimi screams.

At the gamemaster's discretion, the mimi's scream will drive away undersea creatures—or perhaps drive them into a frenzy.

The screaming mimi has a Sensor/Sonar rating of 4/4 and a Pilot rating of 3.

Snake-Spine Whips

Snake-spine whips are well-armored mechanical arm weapon systems. Each arm is comprised of linked segments that measure two meters long. Snake-spine whips are attached to a CCSS rigged security system.

The rigger can make underwater melee attacks with the snake-spine whips using the special skill Mechanical Tentacle Operations (similar to Mechanical Arm Operations, p. 24, R3).

Weapon	Concealability	Ammo	Mode	Damage	Weight	Availability	Cost
Hydrostatic Pulse Baffles	—	200	SS	22D (AV)	500	NA	15,000¥
Ammo (per 10)	Concealability	Damage	Weight	Availability	Cost		
Hydro. P. Baffle Charges	—	As weapon	500	NA	2,500¥		
Gear	Concealability	Weight	Availability	Cost	Street Index	Legality	
Olfactory Camouflage	4	4	4/48 hrs	200¥	1.5	Legal	
Weapon	Concealability	Damage	Weight	Availability	Cost	Street Index	Legality
Screaming Mimi	—/6	Special	150	20/3 mo.	50,000¥	4	I-J
Weapon	Concealability	Reach	Damage	Weight	Availability	Cost	
Snake-Spine Whips (per arm)	—	2	8M	20	NA	1,500¥	
Blade Arm	—	2	10M	25	NA	2,000¥	
Electric Discharge Arm	—	2	12S Stun	25	NA	2,500¥	
Hull Cutters	—	2	6MN	50	NA	5,000¥	
		Range (in meters)/Target Number					
Weapon	Short/TN 4	Medium/TN 5	Long/TN 6	Extreme/TN 9			
Hydrostatic Pulse Baffles	10-30	31-50	51-60	61-70			



Only one arm can be used to attack at a time. The whips are not completely articulate, so attacks with them suffer a +2 modifier; this is usually offset, however, by the +2 Reach modifier the whips also receive. Snake-spine whips possess Strength 8. A common tactic is to grapple the target with one arm, then attack the grappled victim with the weapon mounted on a second arm.

If the rigger wishes to use the whips for purposes other than attacking, then a Mechanical Tentacle Operations Tests is called for against the snake-spine whips Handling rating of 5.

Most riggers simply equip weapons on alternating segments, while others intersperse the weapons along the entire spine in case someone cuts a segment off (thus neutralizing the chain after it). Each also contains a micro-explosive that allows the operator or facility to sacrifice damaged links that are affecting the remainder of the chain.

Treat attacks against the snake-spine whips as if it were a vehicle with Body 3 and Armor 1.

VEHICLE CONSTRUCTION INFORMATION

To meet transportation and operational needs in hostile environments, vehicle manufacturers produce specialty vehicles designed specifically to operate in harsh environments. Described below are several new chassis, design options, and modifications for gamemasters to create these specialty vehicles. These rules supplement the existing vehicle design and customization rules in *Rigger 3*.

NEW VEHICLE CHASSIS

Listed below are several new vehicle chassis appearing in *Target: Wastelands*. The appropriate Vehicle Category (and applicable Vehicle Skill) they belong to appears in parentheses after the chassis name.

Snow Crawler (Car, uses Track Skill)

A snow crawler is an enclosed tracked-vehicle designed especially for traversing snow-covered drifts. They often serve to transport large quantities of passengers or cargo over a long distance and see common employment at ski resorts and arctic research stations. Snow crawlers are available in three sizes, light, medium, and heavy.

Snowmobile (Special Vehicles, uses Track Skill)

A snowmobile is a half-tracked open-topped vehicle, which uses a front snow skid for steering and a rear track drive for propulsion. For design purposes a snowmobile is treated as a motorcycle, which means it uses the same design options and modifications available for motorcycles and also faces the same design restrictions they face. One exception to this is that snowmobiles do not require the Motorbike Gyro-stabilization mod (p. 129, R3) for remote operation. Snowmobiles are available in two sizes, Light and Medium.

NEW QUALITY FACTORS

One new Quality Factor, Hostile Environment Adaptation, is available for new vehicles designed specifically for hostile environments. (For more information on Quality Factors, see p. 76, R3.)

Hostile Environment Adaptation

Modifier: +0.15 (arctic, desert), +0.20 (space)

The Hostile Environment Adaptation toughens an existing chassis to face the harsher conditions in certain environments, namely arctic, desert, and outer space. These adaptations include thicker lubricants for arctic conditions, dust filters and dry lubricants for deserts and radiation hardening and protection against extreme temperature fluctuations for outer space conditions.

Vehicles that incorporate the appropriate Hostile Environment Adaptation do not suffer from the additional Stress incurred for operating a vehicle in a harsh environment.

Note that this Quality Factor is only available for new vehicles constructed through the vehicle design system. Vehicles currently existing in the game universe (for example, the Ares Dragon) use the Arctic/Desert Modification Kit modification as part of vehicle customization.

NEW VEHICLE MODIFICATIONS

The modifications listed below help ordinary vehicles to adapt and operate in harsh environments. The appropriate group each modification belongs to appears in parentheses after the modification name.

Arctic/Desert Adaptation Kit (Protective Systems)

An arctic or desert adaptation kit refits ordinary vehicles to adapt them for survival in harsh arctic or desert environments. Arctic kits (sometimes known as winterization kits) include accessories such as snow chains for tires, low-viscosity lubricants, frost-resistant rubber synthetics, sub-zero battery acids, and similar items. Desert kits include dust filters for fuel tanks and air intakes, high-temperature coolants, dry lubrication and heat-reflective surfacing, among other things.

Vehicles fitted with the appropriate Adaptation Kit do not suffer from the additional Stress incurred for operating the vehicle in a harsh environment. Vehicles with this kit, however, consume expendable materials (like lubricants and seals) that must be replaced periodically. If a vehicle refitted with an Adaptation Kit spends at least a week in the appropriate hostile environment, double the maintenance cost for the vehicle for that month (see *Maintenance and Overhead*, p. 28, R3).

This modification is only available to existing vehicles through vehicle customization. New vehicles created through vehicle design use the Hostile Environment Adaptation Quality Factor.



Customization Specifications

Parts Cost:

Ground Vehicle: Body x 250¥

Air Vehicle: Body x 500¥

Parts Availability (SI): 5/1 wk (1.5)

Base Time/Skill Test: 16 hrs/Appropriate Vehicle B/R (4)

Equipment Needed: Vehicle Shop

CF Consumed: 1

Ski-Skids (Accessories)

Aircraft may be outfitted with special skis in place of wheeled landing gear so that they can safely land on ice and snow. Ski-skids may not retract normally, and thus aircraft may not go supersonic with them unless it was an original design option.

Without skis, aircraft attempting to land on snow or ice require double (or even triple) the usual takeoff and landing lengths, due to the reduced traction of icy or snow-covered surfaces. (For takeoff and landing distances, see p. 68, R3).

Design Specifications

Design Cost: 10 x Body

Maximum Rating: NA

CF Consumed: 0

Load Reduction: 80 kg x Body

Customization Specifications

Parts Cost: 500¥ x (Body + Armor)

Parts Availability: Always

Street Index: .9

Maximum Rating: NA

Base Time: 48 hours

Skill: Appropriate Vehicle B/R Skill

Target Number: 2

Equipment Needed: Vehicle shop

CF Consumed: 0

Load Reduction: 100kg x Body

NEW VEHICLES

The following vehicles were specifically designed for operations in the Polar Regions.

SOYO SNOWGLIDE

The Snowglide is an economical and fast snowmobile aimed at the discerning consumer. Designed to comply with even the strictest noise regulations placed on personal vehicles in the NAN parks, the Snowglide is powered by a high-density battery system.

Similar Models: Kawasaki Snow Lynx and NorthTek Arctic Fox-62

Other Features: Environmental Adaptation (Arctic)

ACHERON-MOSS HOPLITE

The Hoplite is a light snowmobile marketed to security forces. It is fast, cheap and loud. An electric fuel-cell version with superior endurance has sold very well to corporations operating in Antarctica.

Similar Models: Ares Tracker

Other Features: Amphibious Operation 1, Electronics Port w/Personal Comm Unit (Rating 4, 1.2 CF), Environmental Adaptation (Arctic), External Fixed Firmpoint (1 CF Ammo Bin), Turbocharging 2 (factored in). Fuel-cell version has Turbocharging 1.

CAT SNOWBEAR

The Snowbear is an extremely large tracked vehicle that is used to haul large amounts of cargo. The science model is an expensive modification with vastly superior performance and a massive price tag.

Similar Models: Mesametric Northern Contender, Salish Motors Jumper, and Dodge AMT2054

Other Features: Amphibious Operation 1. Science model has: Amphibious Operation 2, Datajack Port, Shop, Thermal Baffles 2 (factored in), 2 Basic Living Amenities.

Model	Hand	Speed	Accel	Body	Armor	Sig	Auto	Pilot	Sensor	Cargo	Load
S Snowglide	—/3	70	3	2	0	5	0	—	0	2	20
A-M Hoplite (G)	—/3	90	6	2	4P	1	0	—	0	0.3	34
A-M Hoplite (F)	—/3	65	5	2	4P	4	0	—	0	0.3	20
CAT Snowbear											
Standard	5/5	40	1	6	0	2	0	—	0	250	9,700
Science	5/4	40	1	6	0	2	0	—	0	478 (378 PS)	8,950 (700 PS)

Model	Seating	Entry	Fuel	Econ	S/B	L/T	Chass	SI	Avall	Cost
S. Snowglide	2m	—	E (100 PF)	0.6 km/PF	—	—	Med. Snowmobile	1	2/24 hrs	28,600¥
A-M Hoplite (G)	1m	—	G (20 l)	0.5 km/l	—	—	Lt. Snowmobile	2	2/24 hrs	12,600¥
A-M Hoplite (F)	1m	—	F (305 PF)	1 km/PF	—	—	Lt. Snowmobile	2	2/24 hrs	23,600¥
CAT Snowbear										
Standard	2b+1B	2d+s+r	D (550 l)	2 km/l	—	—	Hvy Snow Crawler	1	10/10 days	186,300¥
Science	2b+1B	2d+s+r	D (550 l)	2 km/l	—	—	Hvy Snow Crawler	1	10/10 days	407,445¥

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ISBN# 3-89064-653-0 \$20.00

Distributed By:

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