

STATE OF THE ART

2003



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STATE OF THE ART: 2063



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TABLE OF CONTENTS

INTRODUCTION	4	Signs of the Times	40	Matrix Security	90
CRASH COURSE	5	Duels Arcane	41	Magical Security	90
GENETECH	6	Filtering	43	Personnel Services	91
Modern Genetics	6	Geomancy	44	Integration	91
DNA and the Gene	6	Divination	45	Putting It All Together	91
Manipulating Our DNA	8	Game Information	47	Tricks of the Trade	93
Tabula Rasa: Our Genome	9	Sympathetic Magic	47	Game Information	95
Genetics of the Sixth World	9	Signs of the Times	51	CULTURE SHOCK	105
Gengineer Roll Call	13	Geomancy	53	Critics's Choice: Top Ten	
The Mean Gene Machines	13	SOLDIERS OF FORTUNE	54	Albums of 2062	106
Pro Dabblers	14	Guns For Hire	56	Bandwidth: Enhanced	
Discussion Forum	16	Mission Essentials	56	Performance	108
Applications of Genetics	18	The Art of War	60	Top Ten Trids and Sims	
Processes	18	Situation Reports	63	from 2062	109
Substances	22	Merc Hangouts	63	Virtual Light and Magic	111
Game Information	25	Brothers in Arms	65	Sweet Spots: 2062's Top	
Genetic Modification		Battlefields	67	Ten Scenes	112
Before Birth	25	Tools of the Trade	68	The 'Trix-ster Report	115
Genetic Modification and		The Great Outdoors	68	The Race for the Olympics	116
Ritual Samples	25	Hell on Wheels	70	Sport News: The 2062 Recap	117
Genetic Modification and		Fire in the Hole	71	Travel Hot Spots	119
Cyberware	26	Game Information	72	Christmas among the	
Genetic Processes	26	Running a Mercenary		Stars: Shibanokuji	
Substances	29	Campaign	72	Freefall Resort	119
CHARMED LIFE: NEW METAMAGIC	31	New Equipment	72	A Night in Athens	121
Magic Theory 101	32	New Vehicles	75	Carnaval!	123
Sympathetic Magic	34	KEEPING THE RABBLE OUT	79	Game Information	123
Symbolically Speaking	34	Corporate Security	79	Coffin Clubs	124
Severing Ritual Links	36	Physical Security	80	Sim-Vironment	124
Turning the Tables	37	Technical Security	83	Sculpts and Cracking	124
Psychometry	39	CCSS Infrastructure	89	Getting In and Out	125



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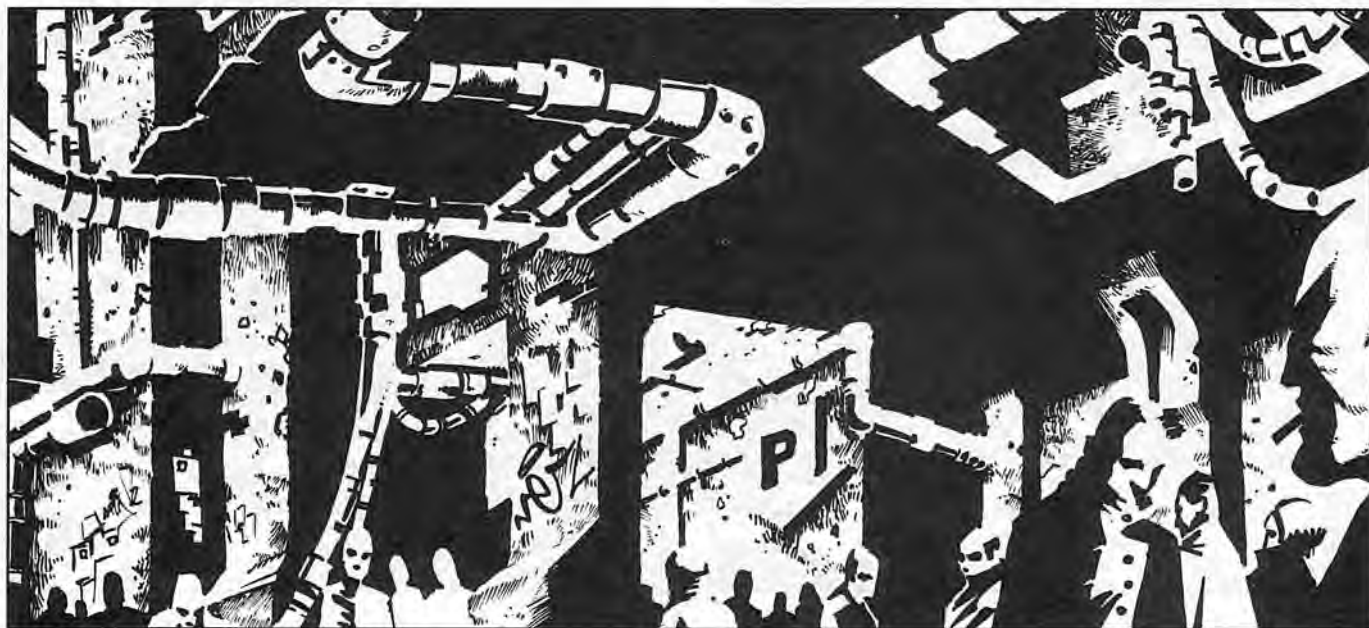
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INTRODUCTION



State of the Art: 2063 is a new style of *Shadowrun* sourcebook that takes a look at the latest nova-hot developments on the cutting edge. The Sixth World is always changing and the shadows need to change and adapt to innovative technologies, unfamiliar magics and original ideas or they'll be swept into the dustbin as relics who couldn't keep up with the double-time march of progress. This book covers new advances in five areas of particular interest to shadowrunners: genetics, metamagic, mercenary ops, corporate security and mainstream culture.

State of the Art: 2063 is presented as a series of electronic documents posted by Captain Chaos, sysop of the vast Shadowland archive—the number one data haven for shadowrunners to find out what's going on in the world of *Shadowrun*. The documents come from a variety of sources, both underground and mainstream, but are directed towards an audience of 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 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 section, *Genetech*, delves into the manipulation of metahuman DNA. A range of genetic therapies, processes and

substances are detailed, from environmental microadaptation to ebola plus. This section updates engineering material previously presented in the out-of-print sourcebook *Shadowtech*.

The second section, *Charmed Life: New Metamagic*, covers a wide variety of new metamagical techniques. These include symbolic links for ritual sorcery, psychometry, arcane duels, geomancy and more.

Soldiers of Fortune is the third section, providing an overview of how modern mercenaries operate and the jobs they take, as well as some mercenary outfits and hot spots. This is an update and expansion of material previously presented in *Fields of Fire*. This section also includes new military gear and vehicles.

Following this is the fourth section, *Keeping the Rabble Out*, which explores all of the security methods that corporations use to keep uninvited guests out. This section updates and expands on material previously presented in the out-of-print sourcebook *Corporate Security Handbook* and also includes some new nanotech and biometric security systems.

The final section, *Culture Shock*, provides an overview of the latest developments in the music, art, entertainment and sports industries. It also describes several top nightclubs and travel locations and includes a wealth of plot hooks. Gamemasters can use this section to fill out the world of *Shadowrun* in their campaigns and construct adventures around some of the plot lines presented.

CRASH COURSE



Every one of you runners out there already knows the mantra. If you can't keep pace with the rat race of progress, you're ghoulish chow. In our line of biz, staying alive means being a step, jump or lunge ahead of the competition. We need to know what to expect and how to deal with the challenges our opponents throw at us. If you're going to get caught off guard by an assassin's genetic mods, tripped up by some corp lab's new nanite-tracking sensor system or fried when that street shaman sucks in your fireball and uses it to toss some major mojo right back at'cha, then you might as well not even walk out the door.

My job, of course, is to fill all of you rabble in on the latest developments and technology, the latest state-of-the-art applications that you need to watch out for. As we slink on over from this year of chaos to the big 2063, I decided to throw together this file collection of intel about the cutting edge.

I know you're all drooling and excited to get your hands on a bunch of wiz new gadgets, but keep in mind that this extinction-avoidal race is about more than tech toys. That hot new device don't mean dreck if you don't know how to use it or understand how it will be used against you. And it's not just technology pushing our envelope—the state-of-the-art also encompasses changes in culture, ideas and contemporary world events.

So with that in mind, I've focused this file collection on five areas of particular interest to shadowrunners: genetics, corporate security, mercenary operations, metamagic and culture. Genetics is an area that we haven't touched on here in Shadowland for awhile, but it's of particular interest given SURGE and some of the new uses of gengineering. Every runner needs to keep an eye on the latest corpsec fads, from old rehashed tricks to new traps and toys. With all of the wars and military actions going on, it seemed to be a perfect time to revisit how mercenaries operate and what they use. I know magicians and mundanes alike would've hounded me to the grave if I didn't provide some paydirt on the latest wizarding techniques. And finally, I threw together a year in review of the dreck that passes for mainstream culture these days, from top tens to tragic trends. I can hear all of you philistines out there groaning over the last one, but I recommend taking a quick peek and scanning between the lines—there's cred to be made, and you won't be disappointed.

All right, enough about me, you and the neighbor's dog. Let's dive into it, shall we?

• Captain Chaos

Transmitted: 05 January 2063 at 08:40:37 (PST)

GENETECH



It's been a decade since Shadowland brought you any organized information on the always-vibrant field of genetech, yet it's an industry that changes every day—not to mention attracting more shadow biz than almost any other. Whether you're going in the tank for your own genetic overhaul or working for or against a genetech research organization, it never hurts to be educated about what you're getting into. We figured we'd post a few interesting documents we've found. As always, there are discussion forums to share your own expertise.

Let's start the ball rolling with a quick scientific primer. First up is a transcript of a Knowledge Network documentary on genetics in our time. It's pretty much straight science so I've marked it read-only; you can save the chitchat for when it gets specific. As always, what you do with this info is your own affair, but remember that knowledge is power. Enjoy.

• Captain Chaos

Transmission: 05 January 2063 at 08:45:30 (PST)

MODERN GENETICS

Genetics (n); the study of heredity and variation of living organisms.

Genetics is no longer the domain of humorless laboratory technicians and mad scientists—it plays a bigger part in our world than almost anyone realizes. Over the last century its significance has grown exponentially, extending into every aspect of our lives. From the food you eat to the medical checkups for your unborn baby, genetic technology is everywhere. Without the study of genes and the improvements they've brought us, our lives would be very different.

But what is genetics? To understand the science of genes, we must first look at what they are.

DNA AND THE GENE

All organisms are controlled by their DNA. DNA is a complex molecule with variable structure that contains all of the organism's genetic information. Think of it as the control computer that tells the automated factory how to build the product. Every living thing has to have instructions like these or it cannot grow and develop. For now, though, let's just





look at metahuman genetics, since that's where a lot of progressive research has been focused.

Each one of your cells has a nucleus, the control center of the cell. The nucleus contains chromosomes, long strings of DNA organized into meaningful sequences called "genes." Over 100,000 genes define every metahuman body, and each one regulates a very specific part of your physical existence. There are genes that determine your eye color, how tall you'll be, how good your eyesight is and every other aspect of your body. But how do genes do that?

DNA's Structure and Form

DNA is made up of many "bases," building blocks connected in a meaningful sequence. Each base connects to the next to form a backbone, with part of each base protruding like the teeth of a comb. These "teeth" can bind to the protrusions of a mirror image DNA chain, forming a twisting ladder-like spiral—the double helix so common in corporate biotech logos.

The teeth of the comb are what enable DNA to carry information. There are four different bases—adenine, cytosine, guanine and thymine. Each set of three bases, called a codon, tells the body to produce a different amino acid. (Like DNA's bases, amino acids are the building blocks of proteins.) Twenty of the possible sixty-four codons define the amino acids; the rest are control sequences.

Transcription and Translation

The information stored in DNA is made real by two procedures, transcription and translation. Transcription involves copying the DNA's information to a messenger mRNA molecule, and translation is the process of rendering the mRNA into amino-acid chains—proteins.

Transcription begins when an enzyme selects the portion of DNA to be copied, and prepares the complementary strand of the helix for use as a template. An mRNA molecule is built on top of the template, constructed one "block" at a time by pairing individual RNA bases to the DNA bases in the template. The RNA fragments are then joined to form a separate RNA molecule.

The mRNA strand contains the same genetic information as the original DNA, and becomes the template for building proteins. It is translated by tRNA, transfer molecules with a specific codon recognition site on one end and an amino acid attached to the other. As the tRNA molecules bind in sequence to the mRNA codons, the amino acids on their other ends also align and bind together to form polypeptide chains. An unbound polypeptide with all the elements required for functionality is a true protein.

This process is the "expression" of the gene; it's how the gene's instructions are made physically manifest. These proteins regulate everything about the body's function—physical characteristics, mental functioning, internal chemical processes and so on. As soon as scientists discovered how DNA worked in the early 1960s, it was obvious that a simple alteration to a person's genome could effect radical changes in their existence. Mastering such precise control over the gene, however, proved easier said than done.

MANIPULATING OUR DNA

Modern genetic engineering is a delicate and exacting science, especially compared with our early clumsy attempts to tinker with simple organisms such as bacteria and virii. Gene modulation can be as subtle or as broad as the imagination allows, though changes of great scope require very careful attention from skilled gene engineers. Genetic engineers can't build an entire metahuman from scratch yet—but that may just be a matter of time.

Genetic engineering is achieved by removing sections of DNA and replacing them with different sequences. This is accomplished using several different techniques, or more often a combination of any available strategies. Therapy using restriction enzymes is the easiest to engineer, but its utility is very limited; on the other end of the scale, nanite-based modification is totally accurate and very flexible, but very expensive and resource-intensive. Most genetic therapy work is carried out by recombination techniques, where foreign DNA is merged into existing DNA using the body's own genetic processes. Recombination has proved to be the most efficient compromise between effectiveness and resources required.

Restriction Enzymes

Restriction enzymes recognize specific sequences of DNA and cut the DNA molecule to fit. Under normal circumstances, the broken ends of the DNA chain will simply re-bond at the point of the break. If another DNA fragment is floating nearby, however, it may be incorporated when the breaks re-seal.

This procedure has significant limitations. It was discovered almost ninety years ago, hailed as a potent tool for genetic engineering and used to great effect for a long time. Its inflexibility, however, severely restricts its usefulness today when far better alternatives are available. Restriction enzymes can only cleave DNA at precise points, and each enzyme only recognizes one site. There are about a hundred recognition sites, so only a limited number of genetic sequences can be modified using restriction enzyme techniques. For more flexible modifications, genetic engineers had to look elsewhere. They wound up looking to DNA recombination.

Recombinant DNA

"Recombinant DNA" seems to be the latest buzzword. Anything made with recombinant DNA must automatically be somehow better—or so the advertisements would have you believe. However, recombination is simply a process of incorporating new lengths of DNA into a genetic structure. The wonders that can be achieved with it depend on what kinds of new DNA you introduce.

Technically, recombination is a catch-all term that refers to any insertion of foreign DNA into an existing genome, but it usually describes a specific process called strand exchange. When a DNA helix splits the strands will usually re-bond; canny engineers can introduce new DNA that supplants one of the strands in re-bonding, replacing old genes with new. The inserted genes can vary from the DNA they replace.



while remaining bonded to its complementary strand as part of the new genome.

The advantage of DNA recombination to a genetic engineer is that it's a relatively simple process with nearly unlimited flexibility. Any amount of DNA can be inserted by this method without limiting modifications to restriction enzyme recognition sites. DNA recombination isn't perfect for every situation, though. It can't completely alter existing DNA; the new material it inserts must bear at least a passing resemblance to what it's replacing. To completely change a particular genetic characteristic, engineers have discovered that there's only one real solution: nanite treatment.

Nanite Engineering

Nanites are the universal panacea for any problem that involves microengineering. They're tiny machines used in almost every commercial endeavor. Manufacturing and heavy industry, primary production, medical and biomedical sciences; all have benefited immeasurably from these tiny wonders of modern technology.

Most nanites used in the human body are approximately the size of red blood cells; they work on a multi-cellular level, so they don't need to be any smaller. That isn't the lower limit of their size, though; nanites are capable of existing and operating on a molecular scale. It's these truly nanoscopic machines that are required for complete control over our genes, and medical research has been on the cutting edge of the nano-industry for a long time.

Genengineering nanites manipulate DNA by any number of mechanisms. Their programming is far more complex than any cellular process, and they're capable of examining and selecting a particular fragment of DNA far more precisely than enzymes for restriction engineering or strand-exchange recombination. Various nanite breeds work together to build new sequences of DNA to the maker's specifications, insert it into our genomes, trim away any excess and dispose of it neatly. They aren't restricted by recognition sites and don't have to maintain similarity with the original DNA—when nanite engineering reaches its full potential, we'll be able to create wonders that our forebears could never have imagined.

Despite the rosy outlook, nanite genetech has its flaws just like every other gene-manipulation technology. Here the limiting factor is generally cost—"ordinary" nanites are expensive enough, and engineer nanites are built to much more precise specifications. Any genetic manipulation resulting in wholesale changes of DNA rather than subtle modification requires the use of nanites, and the associated cost places such treatments out of the reach of most ordinary citizens. Subsidy programs do exist, though, for remedial-therapy genetech—particularly in the case of congenital impairments—and the steady march of progress allows prices to plummet as new and exciting technologies become commonplace.

TABULA RASA: OUR GENOME

These tools for modifying genetic sequences are very useful; we must know what it is, however, that we're chang-

ing. The substrate for genetic manipulation—the blank canvas on which engineers work—is the genome, the DNA "blueprint" that describes a living organism. For metahumans, our genome is massive, but not all of the genetic sequence translates into protein-building information. There are large segments of our DNA that have other functions, or often no apparent purpose at all.

Of the three billion base pairs in metahuman DNA, only 3 percent are functional sequences—genes that encode complete proteins. Other base pairs form control sequences: enzyme binding sites, start and stop signals that initiate or prevent transcription, recognition sites for restriction enzymes and so forth. The remaining sequences—most of the DNA—have indirect functions. Some are vestigial genes, obsolete genetic options bypassed by the process of evolution. Many other sequences do nothing at all. The remaining sequences, though never expressed as proteins, control the three-dimensional structure of the DNA molecule.

In biochemical terms, the primary structure is the sequence of components that make up a molecule. For proteins, that's the order of amino acids; for DNA, it's the number and sequence of nucleotides. Secondary structures are small repeating 3D elements, where the helix will sometimes curl into spirals, loops or rippling folds. The next level is the overall 3D conformation of the DNA—it may be drawn as a nice straight regular helix, but in reality that helix is a piece of string tangled up into a complex knot, and the knot's physical shape is "tertiary structure."

Initially, the phrase "junk DNA" referred to all the non-coding sequences of our genome. Geneticists now understand that the regions controlling secondary and tertiary structure are vital to the function of our DNA, and only the vestigial genes and other useless sequences are now considered "junk."

THE GENETICS OF THE SIXTH WORLD

• This is where it starts to get really relevant to our lives today. I've lessened the file restrictions here, so feel free to comment to your hearts' content.

• Captain Chaos

"I am everywhere!"

The Awakening left massive changes behind as it rippled through our world half a century ago. It changed society, it changed the borders of possibility, but most of all it changed us. On a genetic level, up to a quarter of the world's population would never be the same again.

Metahumanity

The rise of metahumanity in 2011 was the first visible evidence of the Awakening and perhaps the change that touched more lives than any other. It was immediately recognized as a genetic effect, as the name UGE—"unexplained genetic expression"—shows. Geneticists of the world jumped on the academic bandwagon, and research began immediately into this strange phenomenon.



• That's an understatement. There's nothing scientists hate more than the unexplained or the inexplicable, especially when it's right in their backyards. By the first decade of this century, genetic scientists thought they had it all figured out, and then along came UGE to prove them very, very wrong. Just about every corporation and government in the world poured buckets of money into finding out what on earth was going on.

• Doctor Karl

• Yeah, and half the time they were just happy to get results however they could. Questionable ethics, sloppy methods; it was a bad couple of decades for scientific pride. Industrial espionage was at a premium, too—the first generations of runners had it made.

• The Smiling Bandit
"Strikes Again! Ha Ha Ha!"

Magic's impact on genetic expression—still not understood at that stage—meant that the search for the "metahumanity" genes was doomed to be problematical and lengthy. The incidence of a second wave of UGE, the "Goblinization" of 2021, further complicated matters by providing a whole host of new genetic traits to identify and sequence.

The "metagenes," as they were tagged, defied identification and comprehension for several decades. It wasn't until

the 2040s that several key breakthroughs allowed full identification of a genome's secondary DNA structure along with its primary DNA sequence. The landmark Hausen Project of 2046–47 combined genetic and thaumaturgical research and finally yielded useful results.

Just as a two-dimensional square is a shadow of a three-dimensional cube, and a cube is a shadow of a four-dimensional tesseract, magical energies that exist in four dimensions (our usual three dimensions in intersection with astral space) have three-dimensional shadows. Such shadows may appear to exist without their extradimensional component, but are meaningless without the presence of magical energy.

This is precisely the case with the genes for metahumanity. The researchers of the Hausen Project discovered that particular repeating secondary structures were common to many members of a given metatype. They developed this observation into a theory postulating that these secondary structures are three-dimensional shadows of genetic elements active in four-dimensional reality, that they are conformational requirements for transcription of previously inactive genes. Stringent laboratory experimentation has supported this theory, but the actual mechanism behind the activation of these genes is unknown to this day.

After the Hausen discoveries, it was later determined that the metagenes for ork and troll metatraits, while requiring higher levels of ambient mana to express, would do so



suddenly even in existing organisms. The elfen and dwarf metatraits, however, established themselves during fetal development, and organisms will not express the *nobilis* and *pumillonis* traits after differentiation has occurred.

• So does that mean if you had a child somewhere without mana—say, in space—and then took them into a normal level of magic, they might suddenly turn metahuman?
• Volder

• Absolutely. They wouldn't become an elf or a dwarf; if you're not born that way, you'll stay human forever. But spontaneous expression into robustus or ingentis is definitely possible.
• Doctor Karl

So as geneticists currently understand it, various secondary structures—nicknamed “astral shadows” thanks to the four-dimensional nature of their activity—trigger the transcription of DNA sequences previously thought to be inactive or “junk” DNA. These DNA genes directly encode proteins responsible for the physical differences between the five metatypes—there are different combinations of genes that encode pointed ears, exceptional stature, heat-sensitive sight, calciferous dermal deposits and so on. Without the required secondary conformations, a person will never be a metahuman—even if they have the appropriate genes. And without the right genes, all the astral shadows in the world won't make you a dwarf.

The complexity of the interactions between astral shadows and the primary DNA sequence has made metagenics—the genetic study of metahumanity—a very complicated practice. Not all the secondary structures that activate gene expression have been identified yet, and the specific purposes of the genes they trigger are equally elusive. Though metagenic research proceeds apace, there is much yet to learn.

• This is why it's so hard to research metatraits. When it comes to ordinary genes, that's easy enough—you replicate the DNA sequence in a controlled environment, provide the transcription and translation mechanism and test the protein that comes out the other end. Metatraits are a lot harder to identify—it's almost impossible to get the secondary structures right, and without them the genes for metatraits just won't activate. You just can't grow pointy ears in a petri dish, it seems.
• KAM

• In the five years after the Hausen project, they managed to identify seven specific metatraits. In the decade after that, they pinned down another thirty-three. Of course, that means there's only a couple of hundred left to go ...
• Needle

• Couple hundred? How do you figure?
• Skeptic

• A “metatrait” can be anything from “pointy ears, dwarf-style” to tusks, horns, good night vision, whatever. But a lot of metahuman characteristics are really more than one trait—for example, the increased bulk of your typical troll is actually comprised of wider bones, stronger tendons, larger muscle mass, increased height and so on. Each separate trait is encoded by at least one new gene, possibly more. And when you consider how many distinct characteristics each metatype adds to the human experience, that's a lot of genetic research to do.

• Blastoma

• I came across some interesting metagenics results a while back that the mass media didn't make much of. Apparently they've discovered that some normal genetic traits are often inherited along with metatraits. For example, the tendency to birth multiple children at once is indeed often inherited along with ork metatraits. Adult trolls have a greater statistical likelihood of being lactose-intolerant. A higher than usual percentage of dwarfs are left-handed. And so on. Obviously, it's not a hard-and-fast rule; it just seems that the relevant genes are located close enough that they're usually inherited together.

• Trychosope

• Yeah, I saw that—it caused quite a ripple in research circles, even if the public didn't hear much about it. In fact, some geneticists are trying to use these results to advance metagenics research: they're looking at genetic sequences located around the known mundane genes mentioned in these results, to see if they can work out which linked sequences are responsible for the associated metatraits.

• Tanaka

• You're talking about heredity—what about heredity of the metatraits themselves? I've never heard of it, but couldn't you have half-dwarf half-ork babies, depending on the metatype of the parents?

• Saevar

• Actually, no. It's a long and complicated subject with tera-pulses of data online, but here's the gen: because metahumanity relies on the secondary structure of DNA as well as the primary sequence, it's a lot more susceptible to the vagaries of heredity. When genes are inherited, the primary DNA sequence often “shifts around” on the chromosome. The genes themselves stay intact, but of course this shifting really messes with the secondary structure. So metatype doesn't have to “breed true;” elfen parents might have elf, troll or human offspring. But something in the relationship between the astral shadows and the genes they activate means that only one set of metatraits will ever express, if any. You won't have children that are half one metatype, half another—or half-human, half-metahuman, either. It seems to be all or nothing.

• Phage



• And, just to make it more complex ... though all the parent/child metatype combinations are theoretically possible, many permutations never actually occur. For example, elven parents don't have troll or ork babies; ork parents don't create dwarfs, and so on. In practice, children always take the metatype of one of their biological parents. (Though if the parents are orks or trolls, occasionally the child will be born human and turn into an ork or troll at puberty. Yes, there's an explanation why. No, I'm not going to get into it. It's pages and pages of protein biochemistry, so you can go look it up for yourself.)

• Doctor Karl

SURGE

This new wave of genetic expression hit our world with virtually no warning, turning those who believed they were now human or metahuman for good into something else. Though the throes of public hysteria and frenzied anti-mutant sentiment made it sound as though a mutagenic plague was twisting everything in its path, the actual cause of SURGE is far more natural and benign.

Though SURGE stands for "Sudden Unexplained Recessive Genetic Expression," biologists were quick to rectify the "unexplained" part. Working theories based on initial observations were developed within mere weeks of SURGE's appearance. Now, a year later, it's apparent that SURGE is another genetic expression like the appearance of metahumanity that will take years to research and understand fully. The incidence of new SURGE cases has dropped dramatically over the last six months, and geneticists are settling down to study the issue in earnest.

From what we understand, SURGE is a genetic response to a gradual rise in ambient mana levels since the Awakening of 2011. SURGE cases are classified into three different severity levels. The first, class one, refers to those whose changes mimic those of previous waves of metagenic expression—those who've developed horns, tusks, pointed ears and so on without fully becoming a metahuman. This class of SURGE action appears to be due to ordinary metagenics that have been damaged by the passage of time—metatraits that have been only partially inherited, for example. Geneticists currently believe that expression of one metatrait triggers expression of the next, so that all the traits associated with a given metatype express correctly. In class one cases, however, only a few metagenes are expressed, as though the genetic mechanism has been damaged over time, preventing expression as a full metahuman.

• I came across one study that showed an interesting pattern in births lately. Apparently there's been an influx of "changeling babies" of late, mirroring the peak of SURGE expression. Since a lot of normal metatraits (especially elven and dwarf characteristics) are only established during fetal development, the analogous SURGE traits started popping up in unborn children. Of course, unlike adult SURGE patterns, there'll always be a small percentage of "changelings" born every year.

• Rosemary

Class two SURGE appears to involve the activation of vestigial genes from previous evolutionary stages; those affected display gills, fur, reptilian features or varied sensory organs, for example. This form of SURGE is the most mysterious, especially since many of the traits appear together. A person with class two SURGE is much more likely to display all reptilian or all ichthyic traits, for example, rather than a mixture of various types. This has led geneticists to conclude tentatively that class two SURGE is an example of misdirected genetic expression. By this, they mean that the "astral shadows" should have encouraged a set of ordinary metahuman traits to develop, but due to genetic shifting over time the expression mechanism latches onto a set of genes that were discarded by evolution many years ago.

Class three SURGE is the most extreme, where those affected display traits never before seen in metahumanity. This usually gives rise to isolated, drastic changes that have seen the sufferers dubbed "mutants." Indeed, perhaps they are mutants—but no more so than a redhead from a family that has always been blonde. The changes wrought by class three SURGE are best explained by the effects of drastic mutation on metagenes—and possibly the magically active secondary structures. This class of SURGE, like the others, will remain a mystery until scientists have unlocked the secret of the meta-genome.

Magic Genes

The area of "magenetics," or the genetics of the magically active, is a constant frustration to research scientists. Despite intensive research before and since the Hausen Project released its findings, there has been no verifiable progress towards identifying the genetic factors that permit magicians to channel astral energies into our reality. Indeed, most geneticists barely agree that there is one coherent set of genetic factors responsible for these incredible abilities.

The most popular current theory has remained essentially unaltered for a decade or more. It states that the ability to wield magic is genetically defined just as any other creative gift or unquantifiable ability; it is conferred by a set of interacting traits spread across the entire genome. These may be activated by secondary structural elements in the same way that metagenic genes are, but no one's succeeded in proving that yet.

Another hypothesis suggests that magical ability may be encoded in secondary structures that bring isolated regions of the DNA into alignment. Under this model, the gene(s) for magic use are fragmented and scattered across a long sequence of DNA. It's only when the DNA folds and twists that the disparate chunks of the gene are brought into contact and become a contiguous sequence that can be activated. This is just as difficult to demonstrate by laboratory research, however, as it's nearly impossible to replicate the required secondary and tertiary structures outside of a normal cell.

With the almost limitless structural elements that could confer magical ability still eluding isolation and analysis, it doesn't seem that magenetics will yield to metahuman inquisitiveness any time soon.



- I think I speak for us all when I say: good.
- Magister

- Why "good?"
- LoRent

• Well, think about it—who has the power to perform most gengineering? Do you really want the corps to have the power to create armies of ubermages? Keeping the world sane was hard enough when the magic first appeared, and we've finally found that delicate balance. Can you imagine the changes if one in ten joes on the street were a mage?

- Magister

• Magic can achieve so many marvels that would otherwise be out of our hands, though. Surely the more people who have access to it, the better.

- Serena

• I think we can all agree that, just like any other tool, the morality of magic is up to those who wield it. What Magister was saying, I think, is that leaving such power in the hands of the corps is a worrying prospect if you think the way most of us do. Further discussions about the morality of magic should probably be kept to the magic SIGs or MagickNet, though.

- Silicon Mage

GENGINEER ROLL CALL

by The Smiling Bandit

Seems I have something of a reputation for keeping up with the doings of the gengineering set. In the interests of keeping you all alive for a few weeks longer, it's only fair to share the wealth—so at the request of our good Captain Chaos I've thrown together this quick primer on the movers and shakers in this very dynamic field. Of course, it'll probably be out of date by next week. Still, that's one of the hazards of keeping up with the state of the art.

THE MEAN GENE MACHINES

Most of the corps heavily invested in the genetech field are familiar names if you've been keeping up with medical and human-augmentation developments; a strong foundation in genetic technology is essential if a corp's going to do anything with bioware, cyberware, medical work or pharmaceuticals.

Partners in Crime: Universal Omnitech & Aztechnology

Universal Omnitech is the corporation to beat when it comes to genetech. They've always been positioned right on the bleeding edge, pioneering many of the experimental technologies and procedures that are now commonplace in modern metahuman genetics. While they lack the diversified base and sheer resources of a triple-A megacorp, their constant innovation and dedication has kept them at the forefront of the field.

Their position has been strengthened by their alliance with Aztechnology, whose marketing penetration is backed up by a substantial research presence of its own. The Big A specializes in genetech on a mass-market consumer level, such as cosmetic modification, fertility and contraceptive treatments and gengineered food products. Alone, it barely rates as a major player; its collaboration with UniOmni creates a formidable partnership with the potential to dominate much of the genetech field.

• The problem with the cutting edge is that it's sharp. To stay balanced on it, eventually one has to make questionable decisions that end up with someone getting cut. It's all too common these days to find medical and scientific ethics being suspended or compromised for the sake of the profit margin or market share.

- KAM

• Had a falling-out with your former masters, doctor? I note we haven't seen your lovely face as the public image for UniOmni Gene Labs for some time now.

- The Smiling Bandit

"Strikes Again! Ha Ha Ha!"

• There are good scientists, Mr. Bandit, and there are corporate scientists. We all make our choices.

- KAM

• Bitterness is so unbecoming.

- Roxy

• Could it have been the order to contravene the Copenhagen Accords that prompted your extended vacation from UO, doctor?

- The Smiling Bandit

"Strikes Again! Ha Ha Ha!"

• My contract says "no comment," and that's what I'm doing.

- KAM

Slow and Steady: Shiawase

The undisputed leader of the biotechnology field, Shiawase has a firm basis in pure genetics research. Its position is largely due to the Shiawase Biotech division, led by Etsu Powicke—who is charitably described as a visionary, but more commonly referred to as a mad scientist—but the Envirotech division also contributes a knowledge base strong in agricultural genetics. Shiawase products may not be innovative or totally cutting-edge, but their perfectionism and productivity has kept them at the forefront of modern genetech.

• Just like everything else Shiawase does: same old, same old. And part of the "same old" is Shiawase's formidable industrial



espionage capability. They may not innovate much, but they're quite happy to keep up with the Joneses any way they can.

- Lone Gunman

Meta-Hot: Yamatetsu/PensoDyne

Yamatetsu are the all-rounders when it comes to "ware" of all kinds. Their strength in biotech and cybernetics has necessitated a strong showing in genetics research, and they excel in applied genetech of all kinds. They're one of the industry leaders in the hotly contested metagenics field, and stay almost as close to the state-of-the-art as Universal Omnitech. Their PensoDyne research institute excels in theoretical genetics and specialized applications, and is rapidly developing a reputation for genetech that "pushes the envelope" in unexpected ways.

- Yamatetsu and PensoDyne were all over the SURGE thing as soon as it happened, too, which was great publicity for them. Surprisingly, they actually helped calm the mass hysteria and panic with a series of intelligent and nicely spin-doctored PR releases. I suppose chaos is bad for the bottom line.
- Umbrella

PRO DABBLERS

Of course, no one's going to leave genetech for the big boys—all you need is a biology lab and a couple of moderately talented research scientists, so there are genetic research institutes everywhere you look and more established every week. Some of the most productive participants in the rat race are listed below.

Cross Biomedical

There's not much to say about Cross Biomed except they're young, hungry and aggressive. They'll beg, borrow or steal the research data and personnel they need to get ahead in the field, and it's paying off already—Cross is developing a strong reputation in the field of neurological and developmental genetics, in particular.

- Cross has been looking at developmental biology in particular; for starters they're about to release details of a revolutionary procedure aimed at speeding gestation for busy mothers who don't have time to do it the natural way. I should know—I stole it for them.
- Dirty Habit

Tan Tien

Tan Tien occupies a specialized niche in the genetics research market. Rather than developing their own research



strategies and ways to exploit their results, they tend to perform research as a contractor for other corporations. They do carry out some of their own development work, but any lucrative results are usually licensed to another corporation—often fellow PacRim allies.

- When it comes to innovation, Tan Tien has it all over most of the big guys, in spades. They've got the hottest researchers and the best facilities, funded under contract from the corporate monoliths that they're busy undercutting. As soon as they've got the wherewithal to go it alone, expect to see them enter the industry proper with a big bang.

- Salline

Proteus AG

Though they're not widely diversified in genetech, Proteus is notable for its total dominance over the environmental-modification market. They began by developing bioware for underwater environments and have expanded into genetech products for almost any hostile environment you could think of. They also do a nice sideline in pollution-control gengineering, though this is mostly to get around draconian ecological laws in a lot of their most lucrative territories.

- Hostile environments? Hey, do they have something to get me through dinner with my mother-in-law?

- Titan

Saeder-Krupp

This heavily diversified juggernaut naturally has fingers in the genetech pie. Its eminence has been limited by a preoccupation with research into metagenics, magenetics and other genetic aspects of the Awakening. The complexity of this field has stopped Saeder-Krupp from shining so far—but if they ever make the magic breakthrough they're searching for, they'll dominate the market for decades to come.

- The German giant has been playing with some really freaky stuff. One recent project was rapid genetic change through magic—no more lying in a tank for months, just use magic and presto, you're somebody different. Like, I heard about these things that would sample your DNA, use magic, and become like a clone of you. Straight away. Scary stuff, neh?

- Grassy Gnoll

- Unlikely stuff, more like. What you "heard about" was probably just a really good Physical Mask spell, or something similar.

- Terwilliger

- Yeah, but these things even had the same memories and personalities as the subjects they were copying!

- Grassy Gnoll

- Then that's waaaaaay out of the realm of genetics. They still haven't managed to quantify personality, but it's accepted that genetics aren't solely responsible for what sort of person

you are. And as far as memories go, that's a matter of neural patterning and imprinting; genetic modification won't do a thing for your memories.

- Dyspeptic Sceptic

Biogene/Yakashima

Yakashima's progress in the genetech arena has been dogged with as much controversy as in biotech; there are constantly rumors about their unethical research goals and procedures, and they've been the target of a lot of runs—most probably sponsored by law-enforcement agencies or pro-metahuman activist groups. Their focus appears to be applied genetech in the bioware and biotechnology fields. Rumors about their interest in proscribed gene warfare research also proliferate, but that may be down to their already bad reputation.

- He's understating the case; they've practically painted a bullseye on their foreheads. These days you practically have to take a ticket to get in the door at a Yakashima facility after dark, there are so many teams leaving with hot property under their arms.

- Thumper

- Biogene was busy working on protein modifications in synthesized human flesh to make it edible for ghouls, apparently going for the bequest in the Kindly Dragon's will. Word has it, though, that someone stole their samples and data lock stock and barrel, along with the talented people who were making it happen. Expect some really nasty retaliation runs from Yakashima when some other corp pops up to claim the bequest with Biogene's swiped data.

- Fletch

- Yakashima, friend to the Awakened? That doesn't quite scan. Was Biogene doing this on the quiet, or something? This really doesn't sound like Yakashima's bag.

- Tuskadero

- Well, who knows, but I've heard one use of it that does sound like Yakashima's style—nouveau cannibalism. That's right, chummers, apparently in certain social circles it's now de rigueur to chow down on synthetic human flesh, supposedly to show that you're an appropriately ruthless predator to mix in their strata. Sick frags, the lot of 'em.

- Glaive

AG Chemie Europa

This European giant is heavily invested in genetech through General Genetics; they also operate a number of well-hidden subsidiary companies. They have a bad reputation in much of Europe for unethical research practices, but that hasn't stopped their commercial success. Their research is generally focused on medical and pharmaceutical-related genetech, rather than human enhancement.



• AG Chemie are one of the major offenders when it comes to violating the 2041 Copenhagen Accords, which proscribe research into gene warfare agents. They've had to divest themselves rapidly of a couple of anonymous subsidiaries after embarrassing toxic spills and sabotage brought some of their less-than-ethical interests to the attention of the various regulatory bodies.

• Kaiser

Monobe International

Monobe has been pushing to improve its double-A status for several years now, and its strong showing in the genetech arena is a large part of this strategy. Their acquisitions in the wake of Fuchi's collapse gave them a solid foundation for launching their aggressive new genetech program, and they've been biting large chunks off Aztech's mass-market consumer base. Through their Designer Genes subsidiary, they've been busy convincing everyone that they need genetically perfect babies and pets that'll live forever.

• Monobe's receiving a lot of covert support from the other Japanacorps—within reason, of course. They've had some very sweet licensing deals, and have conveniently stumbled over a lot of research data last seen in Yamatetsu laboratories. How long the honeymoon lasts is another matter, though. If Monobe gets any stronger, Shlawase is likely to see them as a threat.

• Lady Death

DISCUSSION FORUM

• So, now that you've all got the gen on who's doing what to whom and how, I'm sure you all have some interesting questions to ask and stories to share. I know we've got some self-taught experts (and perhaps a few professionals) reading these forums of late, so we all have a chance to learn something new. The forum is now open for discussion.

• Captain Chaos

Transmission: 05 January 2063 at 09:16:37 (PST)

• Most people don't realize that gengineering has been around for seventy years or more now; it's always been a hotly pursued field ever since they started trying to eliminate congenital diseases from artificially fertilized embryos. A lot of the early work went into stem-cell research, but the real hot-button issue was always cloning. Even though it seems innocuous and impersonal, when you're talking about a new heart in a tank or clonal techniques used in fertility treatments, people have always persisted in worrying about the extreme ends of the scale. Armies of cloned supersoldiers, coming to take over the earth. Hah.

• Terwilliger

• Cloning was a big barrier for genetech to break. Back when it was first developed, it caused huge ethical debates all over the world. It's hard to imagine how there could be any debate about a technology that could grow new eyes for

starving children who went blind through malnutrition or disease, but this was back before the chaos of the early twer first century. Maybe they had the luxury of ethics back then.

• Dyspeptic Sceptic

• Who'd want to live without the joys of synthetic hurr flesh? I don't know how many limbs I've had shot to hell a back, though I know this is definitely my third right leg. Anyc who doesn't think genetech is useful or relevant, imagine ing back when losing a limb meant it was gone for goo Unethical, my genetically perfect ass! Fixing medical proble has to be a good thing, right?

• Thumper

• Oh, there have been enough abuses of cloning technolo to warrant concern. Stories still persist of people trying to c ate clones of themselves, though there are no reliable repc of success. Which is probably a good thing—a viable clo would cause more legal problems than we have lawyers solve, I think. Is a clone an independent entity, or is it just expression of your genetic code—and hence, are you respc sible for anything the clone does? I think it's probably a goi thing that it's still in the realm of science fiction.

• KAM

• The trouble with cloning is that it puts the power of life a death in our hands on a more exacting scale than ev before. We've never had the right to impose our wills a nature like this; to do so is to challenge the natural order things. Apart from the fact that I wouldn't trust my next-do neighbor to pick out matching socks in the morning, let aloi trust him with the power to decide what his unborn daughte genetic makeup should be, it's not our decision to make. TI is the kind of random chance best left to nature, and God.

• Egwene

• Oh, you had to go and bring God into it, didn't you? Loc we've evolved enough to have these tools and abilities; ho do you know that wasn't part of God's plan? You don't kno any more of His (or Hers, or Its) will than the rest of us. If God wried about the specifics of our actions, rather than the inte behind them, he'd be a micro-manager—and a micro-mana er wouldn't have let this world get into such a terrible state.

• Rothschild

• Enough. No debating theology here, please. Religion debates can be carried over into one of the side forums taken to private messages. No one's managed to come u with any answers to these ethical quandaries in the last ce tury, so I doubt we're going to have a sudden religion epiphany in the middle of a forum for professional crimina and anarchists.

• Captain Chaos

"I am everywhere!"



• KAM, I know you contend that "clone doubles" are all rumor and myth, but I'm not too sure of that myself. Sure, the reports may not be substantiated or provable—but we all know that most corporate research isn't substantiated anyway, thanks to the overriding urge to beat the competition. There are too many stories of "doppelgangers" running around to ascribe it all to hearsay and speculation.

• The Smiling Bandit
"Strikes Again! Ha Ha Ha!"

• If you say so. Personally, I think most of the reported incidents are just as easily explained by other, more plausible explanations. I'd class "Clones Among Us!" stories along with Jet Black sightings and reports of little green men from Mars, myself.

• KAM

• I heard a rumor about an interesting application of genetech that, if true, could put a whole new spin on a whole lotta things. Some chummers bagged a courier that was carrying some heavy data between a subsidiary and mama corp—the sort of drek that needs personal security. They got everything offa this guy and delivered the goods, only to be told next day that they weren't to be paid because they didn't actually snag the info the Johnson wanted. Not only that, the data still got through to home base! Seems the sucker had the information "written" in his DNA. Can anyone confirm this, or is the Johnson just looking for inventive ways of screwing my pals?

• Pilgrim

• No, the Johnson's not trying to screw your pals—well, he might be, but not like this. Apparently they can resequence your junk DNA to carry simple messages instead of just random genetic data. Each codon refers to an amino acid, right? Well, amino acids are abbreviated as letters of the alphabet and since there are twenty of them, there are only six letters you can't use if you're coding a secret message into someone's DNA. No B, J, O, U, X or Z. And that limitation's easy enough to avoid anyway.

• Phage

• The first few times they tried this, they caused horrible physical results in the subject. There's not much DNA that's truly useless, after all, and there's plenty of structural elements that we haven't fully identified yet. Messing around with DNA, even "junk," is a dangerous business if you don't know exactly what you're playing with.

• Hacksaw

• Hah. You want interesting applications of DNA? Just do a quick Matrix search for "DNA Banks" and prepare to be horrified. Apparently there are any number of organizations that

sell samples of other people's DNA—whether acquired legitimately through donation or through more illicit means, they don't always say. Suggested uses for the DNA range from modifying your own appearance ("Ladies! Want lips like Passion Synclair? Men, want the biceps of the starting quarterback for the Seattle Seahawks? They could be yours!") to having your very own baby with Damien Knight—or his DNA, anyway. Personally, I don't fancy snuggling up to a test tube at night, but that's just me.

• Thumper

• And you think there's no place for ethical debate about our use of genetic technology?!

• Egwene

• DNA-legging actually pays pretty well, though you have to be sneaky. A number of doctors are reported to be making a healthy kickback on the side for taking extra samples from their celeb patients, too.

• Caleb

• Oh my. Ritual samples for sale. Step right up please!

• Gattacan

• Talking about splicing foreign DNA, corps have always toyed with the idea of splicing animal DNA into ours to make us faster, stronger, more alive. The trouble is that no one really seems to have found a way to make it work yet; the effortless physicality that so many animals enjoy is more a function of their whole physiological structure, rather than the effect of just a few genes. If you want someone to be able to jump like a cat, buy a cat. It's easier.

• Phage

• That's overstating the case a bit. There have been some very useful metahuman enhancements derived from animal DNA—just look at bioware gills or cat's eyes, for example. But it's true that most of what we have to gain from animal genetics is limited to specific organs or capabilities rather than merging their DNA directly into ours.

• Tanaka

• Aw, drek. I always wanted to be able to lick my own crotch.

• SJT

• That doesn't mean they've stopped working on animals, though; the latest work seems to be on splicing one animal's DNA into another's. That doesn't seem like much, until you realize you could be up against a guard dog with the agility of a cat, or the venomous fangs of a snake.

• The Smiling Bandit

"Strikes Again! Ha Ha Ha!"



- Or the horns and claws of a plasma ... don't forget, paranormals are animals too.

- Meek

- Yeah, but that means screwing around with metatraits rather than ordinary genes, and that's just as difficult to do on animals as it is on people. They've had a bit of success with this kind of work, of course; animal genetics are often simpler than the metahuman genome, so identification of all the metatraits is a less arduous task, but last I heard they still hadn't identified the full metasequence for any paranimal.

- Phage

- A couple of corps are still trying, though; notably Saeder-Krupp and Biogene. If they've had any success, they're keeping quiet about it.

- Bespectacle

- Holy drek, that might explain what ate my chummer last week. We were busting into a vet research facility and everything was going fine until we heard a few guard dogs baying. So we took cover, and next thing there were these flickering shapes all among us, ripping and tearing and half-gutting us. We had to drag Chuck out of there, hamstrung and nearly dead—I laid down suppressing fire, we heard some yelps, and we beat feet. Guard dogs with adaptive coloration, just what the world needs.

- Horny Devil

- Sounds more like bandersnatches to me.

- Occam

- I'm telling ya, I heard dogs. And if they really were bandersnatches, I don't think we'd have got out of there at all.

- Horny Devil

- Do you realize how many logical explanations there are for what you saw? Spirit concealment, invisibility spells ... little ruthenium-polymer doggy jumpsuits. If you like. Any of those make more sense than dog/bandersnatch crossbreeds.

- Occam

- Yeah, but it was a vet research facility. A Yakashima facility, at that. Doesn't that make you even the slightest bit curious? Maybe there's been a little more progress into practical magenetics than that documentary would've had us believe.

- Horny Devil

APPLICATIONS OF GENETICS

- Our coverage of genetech wouldn't be complete without a run-down on the practical side of genetech, and its relevance for you and me. Most of the following is condensed from an advanced undergraduate review guide, though a few kind

contributors have added details of genetech they feel you should know about. I agree, and I hope you'll all find this as enlightening as I did.

- Captain Chaos

Transmitted: 05 January 2063 at 09:22:42 (PST)

PROCESSES

Each cell contains the complete genetic blueprint for the way the body works; even your big toe genetically "knows" what color your eyes should be. Genetic engineering processes are performed on the whole body; for them to be effective, the DNA in every cell of the patient's body must be altered. Modifying only certain areas of the body has led to unfortunate results in the past, including rampant cancers and severe autoimmune reactions.

Gene Therapy

When scientists first realized that our genetic structure could be manipulated and amended, remedial genetic therapy was the first application that most people thought of. Finally, all those hereditary diseases and conditions could be eliminated from the human condition! While the full potential offered by genetic revision has yet to be reached, medical science is now able to offer whole-body "re-writing" for those whose genes gave them a less-than-optimal result the first time around.

- That's fine, if your goal is to eliminate a genetic predisposition to diabetes or Parkinson's disease. Not so great if you want to undo the effects of Goblinization, or revert back from ghoulishness. Unpopular causes don't tend to get much research funding.

- Hacksaw

Gene therapy encompasses a number of different processes. Using highly specialized nanites, engineered phages and other DNA vectors, therapists are able to alter the DNA of their patient to improve the patient's health. This may involve replacing a harmful gene with an inert equivalent, repairing whole sequences of damaged genes, or encouraging increased gene expression to speed bodily processes (such as healing). Changes to the genetic code must be written into every cell of the body, however, so gene therapy is still no quick fix. This revision process usually requires months to complete, during which the patient must be immobilized under life-support to keep their body as static as possible.

- You know, this is probably one of the greatest medical advances ever. Most of us don't realize just what an impact this has had—if you want an education, head to one of the public archives and pull down some twentieth-century documentaries about genetic diseases. Imagine living with one of those—Alzheimer disease, muscular dystrophy, Rett syndrome. Imagine the heartbreak of having kids with some terrible genetic condition. That's something we never have to fear again.

- Doctor Karl

• Maybe you and yours don't, but this therapy doesn't come cheap. The poor stay poor, and can't afford to do anything except pass down their genetic problems to their offspring. When it's affordable for everyone, then you can say it's changed the world.

• Hacksaw

Age Rejuvenation

Known colloquially as "Leónization" (referring to the story of Ponce de León, who sought the Fountain of Youth), this seemingly miraculous technique offers a way to vanquish old age. It arose from specialized applications of gene therapy techniques and has been perfected by aggressive corporate research and development. Where other genetic research has stagnated or floundered, progress in rejuvenation research has continued apace.

• Of course it does. Everyone gets old—even corporate fat-cats. The corporate subsidies for Leónization research prove that they realize this.

• Saline

Rejuvenation halts and reverses the aging process with a combination of gene therapy and cellular repair techniques—it repairs longevity-related damage to protein structures and DNA alike. It directly opposes many fundamental processes of biology, however, and its intense impact on the patient's system prevents unlimited use. Excessive use disturbs the body's homeostatic balance to a fatal degree.

The genetic therapy must be based on a "clean" sample of DNA, or it risks perpetuating (and exacerbating) any genetic damage the patient has acquired. Aging has a degradative effect on DNA, as does life in industrialized cities, so many children of affluent families now have genetic samples stored at birth to allow them to use this treatment successfully when they age.

• All those ritual samples, just waiting to be used and abused. The next generation of rich kids won't have the courage to rebel, that's for sure.

• Silicon Mage

Phenotypic Alteration

Perhaps a natural consequence of research into genetic remedial techniques, there is now a thriving market for "genetic cosmetic surgery." Where the rich and famous might once have indulged in skin bleaching, collagen injections or depilatory treatments, they now choose the wonders of genetic modification to make these changes at the most fundamental level possible.

Your genes control every aspect of your appearance; changing your look is now as easy—and enduring—as changing your genes. These techniques can create almost any transformation you care to name. Eye color, hair color or texture, skin tone, muscle bulk, skeletal structure—it's open season for the self-improvement devotees.

Like genetic therapy, cosmetic modifications require a state of suspended animation while the patient's DNA is mod-





ified across their body. Though the external changes may be more trivial, the procedures are just as complex and costly.

- The big problem with this is that you've gotta stay switch-off in a tank for months, a long time to be lying there while the world moves on around you. That might be worth the effort if you're fixing up cystic fibrosis, but for the sake of bluer eyes? Get cybered.
- Outbreak Monkey

- But there are things you can do genetically that surgery just can't manage, and the would-be beautiful people with more money than brains will always shell out for the latest look.
- Malcy

- Phenotypic work is also very popular among sufferers of male-pattern baldness, which is a genetic trait. This is the best fix available, since the hair you regrow is your very own.
- SPSM

- Heard good things about this technique from guys who've used it to bulk up. Unlike cybernetic and bioware augmentations, where the extra muscle mass can put a heavy load on your tendons and bones, this technique can just make you naturally a bit bigger and tougher... all over.
- Black n' Decker

Environmental Microadaptation

Despite humanity's success at taming nature, there are still many areas of the globe that are inhospitable to human existence. Environmental modifications were amongst the first non-therapeutic bioware to be developed, but it soon became clear that adding gills, webbed feet or sandstorm-proof skin failed to overcome many environmental limitations. The focus of research shifted into somatic-scale modification through genetic reengineering, rather than implantation of specific organs. Progress has been slow to date—many of the most useful applications require complete reengineering of the body's metabolic processes, which is prohibitively complex—but some limited environmental adaptations have proven very successful in field tests.

- In English?
- Cino

- Well, as an example, it's hard to tailor a human body to breathe carbon dioxide, since that means that you have to rewrite every single part of the respiratory metabolism. But it's not so hard to engineer a tolerance for hot climates, because then you only need to replace particularly heat-sensitive metabolites with more robust equivalents—a much simpler task.
- Doctor Karl

This technique has been used successfully to improve bodily function in a number of hostile situations. Corporate interests often use it to equip their workers to function well in extremes of temperature, low-oxygen environments or with-

out sunlight, for example. Shiawase Biotechnical has also produced interesting results in their research into pollution tolerance, for agricultural and metahuman use alike.

- Proteus AG has been combining this technique with phenotypic modification to adapt subjects to zero-G conditions. Long agile limbs, prehensile toes and muscles that retain their tone with just isometric exercises. I don't know how successful it is, since it's only hearsay—and the same rumors tell that adapted subjects die under the crushing weight of Earth's atmosphere when they come down the gravity well.
- Après Glow

Direct Protein Synthesis

The very purpose of DNA is to instruct the body to produce chemicals—proteins, to be specific. The principle of genetic engineering is to change the genetic structure—and hence the proteins produced—to achieve a specific goal, while keeping negative side effects to an acceptable minimum. Under normal circumstances, the replacement proteins are designed to effect some change in the body. Certain corporations, however, have exercised engineering techniques to produce these proteins for their own sake. In these cases the new proteins are selected to produce a physiological effect rather than a permanent somatic alteration.

For example, PensoDyne Biotechnical has reported success in engineering subjects to produce surplus hemoglobin, thus increasing their oxygen retention and athletic endurance levels. Other success stories include producing calcitonin to help those suffering osteoporosis, follicle-stimulating hormone (FSH) to improve fertility, and atrial natriuretic protein (ANP) to regulate high blood pressure. These techniques bypass intermediate steps in many hormonal processes, allowing geneticists to minutely control a particular aspect of the patient's body function.

- Oh, yes, they're doing this just so we can exercise for longer or have more babies. Hah.
- Phage
- And the cynicism refers to ... ?
- Cino

- Probably the rumors circulating for a while now about research aimed at turning people into chemical factories. In vivo synthesis can be very efficient for complex proteins, and the pharmaceuticals industry is very lucrative. Hence the speculation—unsubstantiated, I admit—that certain corporations have been engineering people to serve as "protein farms." They tell the poor shlubs they have terrible diseases, give them nice undemanding jobs out of the goodness of their hearts, and shuffle them through the corporate medical facilities every fortnight for "treatment."
- The Smiling Bandit

"Strikes Again! Ha Ha Ha!"



• Which involves the corporate medtechs extracting all the nice shiny new complex proteins out of the hapless mooks and giving them a cookie and a cup of hot tea?

• Bespectacle

• Bingo.

• Phage

• How very economical.

• Bespectacle

• Hey, guys, here's an interesting snippet from one of the law-enforcement journals I subscribe to. In retrospect it seems inevitable; the only surprise is that no one came up with it sooner.

• Minx

//Begin File Attachment//

DNA Masking

For decades, forensic science has relied on DNA as the ultimate means of identification; the genetic "fingerprint" has long been the most exacting and accurate criterion for distinguishing between two people. It was therefore a foregone conclusion that gengineering techniques would eventually be applied for the purposes of concealment or false identification. Though there are no reputable practitioners of this procedure, certain illicit organizations do offer the opportunity to those who can pay.

• No reputable practitioners, my chromed and shiny tail. You can bet that the megacorps have their finger in this pie just like all the others. For starters, someone has to have developed this trick, and you need pretty solid resources for large-scale human genetic experimentation. And don't you think they'd want some nice, truly anonymous agents to maintain their precious plausible deniability?

• Thumper

Since mapping the entire genome would be inefficient and impractical for simple identification, forensic DNA identification usually involves analysis of core identifying features in the subject's genetic pattern. Just as physical fingerprints are distinguished by unique combinations of repetitive elements, genetic analysts translate and scrutinize highly variable DNA regions, called Variable Number Tandem Repeats (VTNRs). Pattern homology between the analysis sample and the subject's DNA (with a 1 percent error factor) indicates a correspondence sufficiently reliable to use as legal evidence. The DNA masking technique allows therapists to alter the patient's DNA enough to avoid a match. Though detailed analysis may still detect similarity of up to 95 percent, the clearly identifiable variances indicate a legal difference between the samples.

Under this procedure, a client is placed in a suspended state while their DNA is re-encoded, like standard gene therapy. The genetic changes are not to ameliorate any health

problems, however; they are tailored specifically to make the client's DNA look as different as possible to forensic analysis. The modifications rarely cause any visible changes, as VTNRs are located on introns—areas of the DNA that do not code for any active proteins.

DNA masking poses a significant threat to successful prosecutions based on forensic evidence, and a number of law enforcement agencies have devoted resources to locating and eradicating those who practice it. Unfortunately, the only way to identify the effects of this process—if it has been performed correctly—is to compare "before" and "after" DNA assays. This makes legal identification problematic in all but the most exceptional cases, which has made the elimination of this practice all the more important to peace officers around the world.

//End File Attachment//

• Hey, does this mean you could use it to avoid paternity suits, too?

• Skerrick

• Who cares about paternity suits? I'd much rather know whether it'd render previously taken ritual samples useless.

• Spavin

• Enough speculation—where do I find these guys?

• LoRent

• In most major cities there are a few elite shadow clinics that can perform this kind of procedure. Some corps will do it, too. Really, if you've got a good source for custom-grade cyberware or bioware, they should be able to do this for you too—or hook you up with someone who can.

• Hacksaw

• Hang on. Wouldn't any kind of genetic twiddling have this basic effect?

• Saever

• Well, actually, no. DNA fingerprinting analyzes parts of introns, the non-coding regions of the genetic sequence—ordinary genetic manipulation is almost always aimed at the DNA that actually does something. So just wandering in for a quick eye-color job won't do the trick, since they don't touch the non-coding regions of your DNA.

• Tanaka

• Okay, but you could still go in for something like direct protein synthesis, couldn't you, or one of the other specialist techniques where they do change your junk DNA?

• Malcy

• Yes, and that would probably work. But the important thing about masking is that it's off the record—it doesn't matter what it does to your DNA, provided there's no record of your



previous genome that's linked to your name. With legit genetic modification—therapeutic or frivolous—analyses and maps of your genome are kept on record for medical purposes. So law enforcement agencies still have access to the information. It might take them longer to get it, what with subpoenas and warrants and all, but at least they can still prosecute.

- Phage

- So, if you don't mind having funky proteins floating around in your bloodstream, you'd probably be better off looking for some minor protein-synthesis work where the clinic doesn't mind "losing" your records in exchange for some compensation. DNA masking is really torquing off the law enforcement agencies, unsurprisingly, and it's prompted a bit of a blitz on underground medical providers as a result. If your favorite street doc has been lying low, this might be why.

- Hacksaw

- And, just so you know what this technique is designed to foil, here's a gear blurb from the same publication that covered DNA masking. This time, the subject is a typical DNA ident scanner. Models vary; check out the upcoming Yamatetsu and Mitsuhamas spring catalogs for the latest hardware.

- Kephalos

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Genexpress Assaymatic 5131

Genexpress brings law enforcement agencies the latest in rapid DNA identification technology with the Assaymatic 5131. Utilizing a combination of marker enzymes and a scanning tunneling microscope (STM), the Assaymatic 5131 can have an accurate DNA fingerprint sequenced within a matter of minutes. The marker enzymes target commonly profiled sequences within the subject genome, marking them for analysis by STM. Within 1 to 10 minutes the Assaymatic has scanned the selected areas and produced a concise DNA profile for comparison with law enforcement databases. The unit is easy to use, is automated to reduce personnel training requirements, and comes with a 3-year manufacturer's warranty. Results from the Assaymatic 5131 are sufficient to secure an arrest, but are not conclusive enough for prosecution without supporting evidence. The Assaymatic 5131 remains a valuable tool for providing law enforcement agencies with precise DNA profiles that could mean the difference between a successful arrest and a criminal back on the streets.

//End File Attachment//

- Oh thank you, Mister Bearer-of-Good-Tidings.
- HK Kid

- Hey, know your enemy, right?
- Kephalos

SUBSTANCES

Genengineering efforts have produced a number of substances with a wide variety of bio-medical applications.

Immunization

Using the wonders of immuno-engineering, medical science is now capable of conferring near-immunity to most common disease pathogens, toxins and other compounds. In this procedure, tailored hybridomas are introduced into the patient's body, where they produce monoclonal antibodies specifically targeted at a single substance. These antibodies provide a swift response to that foreign contaminant, bestowing significantly improved resistance on the patient.

Patients can be immunized in this fashion against all common bacterial infections, toxins and other harmful chemical or biological agents. The procedure still hasn't been perfected for highly mutable agents—such as most viruses—and, being highly specific, immunization against one compound confers no immunity to anything else. Also, basic immunization is ineffective against neuro-toxins and other swift-acting compounds because they affect the target before the antibodies can respond. It is possible, however, to immunize against specific neuro-toxins and the like by undergoing genetic therapy to alter the cell receptors and neurotransmitters so that the agent cannot bind to them.

- I love my Immunization. No more Neuro-Stun headaches!
- Thumper

- Trouble is, you gotta be immunized against everything separately. Immunization against Neuro-Stun does nothing against tranquilizer darts, and so on.

- Glaive

- Didn't they used to offer full-spectrum immunization against everything, all in one neat package?
- Bespectacle

- Yes, until they found out that it was impractical and didn't actually work. They couldn't give you specific antibodies against absolutely everything; there wasn't room in the blood stream, for starters. Oh, sure, it worked against a lot of common stuff – but not everything, by a long stretch.

- Phage

- Nail in the coffin was Herbert Lipinski, a biotech researcher who'd plumped for "full-spectrum" immunization in '56 to protect himself against occupational hazards. Thinking he was safe, he got lax about hygiene and contracted about a dozen nasty bacterial infections simultaneously. He sued, won, and the resulting damages payout nearly bankrupted two minor genomics corporations. Needless to say, the treatment disappeared from the market about half an hour after that.

- Saline



- These days, research on broadband immunization is focusing on enhanced immune function, rather than synthetic specific antibodies. There are some nice results coming out of BVI-Clark Labs over in Boston, for starters.

- The Smiling Bandit

"Strikes Again! Ha Ha Ha!"

- I've heard of immunization techniques being abused for nefarious purposes, where the patient is immunized against a compound that's supposed to occur in their body—like, say, a natural hormone or signal compound. It's never pretty to watch someone having an immune reaction to his own body. The end effect varies, but it interferes with normal body processes in a major (and often fatal) way.

- Doctor Karl

- If you want someone dead, why not just shoot 'em?

- SJT

- Well, something like this would only trigger when the targeted compound was produced in the body in quantities large enough to be significant. So, if it was aimed at (say) adrenaline, the subject would be fine until they got excited—and then bang, their nervous systems would suddenly cease to function properly. Ingenious, eh?

- Tanaka

Protective Agents

Immunization by hybridoma is not always appropriate for those whose inoculation needs are variable over time. There's a range of protective agents developed through gengineering that can be applied for short-term or specific protection, and are readily available for reasonable prices.

Antibac is perhaps the most common gengineered prophylactic. It's a monoclonal antibody treatment targeted to harmful bacteria. It protects the body from bacterial infection and toxicity alike. Antibac antibodies bind to foreign bacteria and tag them for destruction as part of the body's normal immune processes. Similarly, they bind to bacteriological endotoxins, render them inert and direct them into normal waste-expulsion channels.

Binder works in a similar fashion; it's a monoclonal antibody treatment engineered to work against chemical toxins. Binder antibodies are specific to particular toxins and must be developed and administered separately for each toxic compound. Both binder and antibac are most efficient when administered by injection, but may be taken as an inhalant for aerosol toxins and airborne bacteria.

Zeta-Interferon was developed to protect users against viral attacks. Unlike antibac and binder it is not based on monoclonal antibody technology, though it is synthesized from engineered lymphocytes and is therefore tailored to combat a single virus. Z-interferon will halt a viral infection in its tracks, stopping virus replication and marking all by-prod-

ucts of the infection for immune destruction. All attempts to develop z-interferon strains for magical virili (such as HMHVV), however, have proved unsuccessful to date.

- Basic versions of these agents are available over the counter in pharmacies. For effective protection you'll most likely want the prescription-only strengths, which is a good idea from the diagnosis point of view anyway—assuming you need zeta-interferon when you actually have a bacterial infection is pretty useless.

- Hacksaw

Gamma-Anthrax

This is a deliberate mutation of the naturally occurring *Bacillus anthracis*. The original bacterial infection causes spore growth, primarily in the respiratory system but also in the digestive system and on the skin; g-anthrax is faster acting and more lethal than this strain. It causes systemic shock on exposure, which serves merely to conceal the true nature of the infection; the bacteria will incubate for a number of days before the disease becomes apparent. Symptoms initially mimic the common cold, developing into pneumonia over the course of the infection. Sufferers weaken rapidly until death occurs.

- Another nasty supposedly outlawed by the Copenhagen Accords, so you'd think talk about it would have died down. It still gets mentioned, though; now why is that? You don't suppose the corps are contravening the Accords, do you?

- Saevar

- Gaspl Never.

- Phage

- The symptoms do look like a bad case of the flu, though. Makes you wonder how many flu-related deaths are down to this stuff instead.

- Saline

- Then again, gamma-anthrax would seem as minor as a bad case of the flu compared to the latest gene warfare agent doing the corporate rounds. From what I can tell, this little critter came from Universal Omnitech, who should have known better. Still, it's cost them dearly—wholesale corporate blackmail, staff resignations and "disappearances," and more. That's what you get when you play with Ebola and make it even worse.

- The Smiling Bandit

"Strikes Again! Ha Ha Ha!"

- Mutated Ebola. This just gets better and better.

- Thumper



- Oh, yes. I shouldn't say where I got this, but it's certainly an informed source.

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

//Begin File Attachment//

Memo

From: Dr. Dennis Burns, Virology Research Director

To: <name changed to protect the guilty>

I am pleased to report that despite administrative obstacles from certain departments, Strain 74B-2 has exceeded all our expectations and has responded very well to *in vitro* engineering. The test subjects have shown the usual signs of initial infection—influenza-like symptoms, with occasional rashes, inflamed eyes and vomiting of blood. These symptoms developed fully within 24 hours and spread to the primary control subjects kept 7 meters away. The secondary controls, sequestered in a quarantine room, were unaffected, as one would expect. Each day the subjects deteriorated, experiencing chest pains, internal and external bleeding—two of the subjects were bleeding constantly through the pores in their skin—and many went blind.

At day five, all the test subjects were dead. Autopsies showed massive shock, liver and renal failure, and liquefaction of many internal organs (particularly the gastrointestinal tract). By day six, all but one of the primary controls had died of similar symptoms. The sole survivor recovered gradually over several weeks, but after re-infection with a modified variant (labeled 74B-3) he too perished. His symptoms before death appeared to indicate additional immune failure and secondary infection. Treatment with standard antiviral agents did not arrest the symptoms enough to save him.

Since you seem to be too busy to observe our work in progress, I shall keep you informed of further developments.

//End File Attachment//

- Please tell me the subjects were monkeys.

- Malcy

- Thank you, Mr. Naïve.

- Terwilliger

- That would explain a little anomaly I found while browsing the UniOmni personnel database a while back. During a period of about one week, a surprising number of Virology Research staff tendered letters of resignation. It's nice to see some people still have standards.

- FastJack

- Not to mention idealism. To think that UO would let them resign! I happened to scan through some records just now, and lo and behold, a Dr. Dennis Charles Burns turned up dead a couple of months ago—of a nasty case of the flu, of all things. How poetic.

- Bespectacle



- Torqued-off colleague? Or UniOmni silencing a blabber-mouth?
- Hack n' Backlash

- Maybe it really was the flu ...
- SJT

GAME INFORMATION

The modifications that genetic manipulation permits are usually whole-body alterations to the genetic sequence of every single cell. Specialized, engineered modifications are usually classed as bioware, though the line between geneteck and bioware can be blurred.

Gamemasters and players are encouraged to research and develop new genetic modifications within the limits of technology presented in *The Genetics of the Sixth World*, p. 9. The processes and substances listed should provide examples of possible modifications and their effects on the body and bank balance.

Characters who elect to have genetic modifications may undergo more than one procedure at a time. Though the monetary and bio index costs accumulate, the time required is equal to the longest duration of the individual treatments.

Many of the geneteck applications described here are assigned a Bio Index cost to reflect the changes inflicted on the character's body. Geneteck modifications are considered natural, not augmented.

GENETIC MODIFICATION BEFORE BIRTH

It is much easier to modify the genome of a few embryonic cells than it is to rewrite the genetic code of a mature body, and medical science has much more experience with fetal engineering than any other kind. As a result, genetic modifications performed *in utero* are quicker and cheaper than procedures performed on an adult.

The duration of engineering processes is reduced by half when performed on an unborn child, and the cost is only 75 percent of normal. This reduction does not apply to engineered substances.

If the gamemaster allows it, characters who begin play with geneteck may apply this discount to the price of the modifications if their background involves such genetic manipulation before birth.

GENETIC MODIFICATION AND RITUAL SAMPLES

The pattern of DNA is so integral to one's self as an entity that changes to a character's DNA will alter his or her aura and magical signature. The aura of a patient undergoing genetic therapy will gradually change over the course of the treatment. Once DNA alteration is complete, observers will note that the character's aura has changed somewhat, but he or she is still recognizable as the same person by astral assensing.

This change to the DNA will render previously taken ritual samples less useful. They are not totally invalid, as most

GENETECH COMPATIBILITY

Geneteck	Cyberware and Bioware Conflicts
Augmented healing	Increased cost (+25 percent) if character has any cyberware or bioware
Cellular repair	Incompatible with boosted reflexes
Age rejuvenation	Increased cost (+25 percent) if character has cyberware or bioware, as per augmented healing
Phenotypic alteration	Specific changes may be incompatible with organ replacements (such as cyberlimbs, cybereyes, orthoskin, etc.)
Cold microadaptation	Incompatible with boosted reflexes, metabolic arrestor, heat microadaptation
Heat microadaptation	Incompatible with boosted reflexes, dermal sheathing or plating, orthoskin, suprathyroid gland, cold microadaptation
Angiotensin synthesis	Incompatible with muscle replacement, metabolic arrestor Effects negated if character has more than two cyberlimbs
Calcitonin synthesis	Incompatible with muscle replacement, flex hands, platelet factory Effects negated if character has more than two cyberlimbs
Erythropoietin synthesis	Incompatible with muscle replacement
Glucagon synthesis	Incompatible with suprathyroid gland

of the DNA remains unchanged, but the differences are significant enough to make ritual linking more difficult. A Linking Test suffers a +1 target number penalty for every 0.2 of Bio Index the target has accrued through genetic engineering, up to a maximum of +4.

GENETIC MODIFICATION AND CYBERWARE

Some of the listed engineering processes are incompatible with certain cyberware and bioware modifications (see Geneteck Compatibility, p. 25). In the event of a conflict between a genetic modification and an implant, the effects of the geneteck take precedence, as they are natural to the body.

GENETIC PROCESSES

These rules cover the processes described on pp. 18–22.

Gene Therapy

Gene therapy refers to any large-scale genetic re-engineering performed primarily for remedial purposes. Common applications include replacing or de-activating genes respon-



sible for hereditary diseases, repairing whole-body impairment from neurotoxins or other damage or speeding up systemic activity (such as growth, healing or drug de-addiction).

Gene therapy is a slow procedure. The patient's body must remain static and inert, suspended on life-support in a vat of DNA-vector solution. For every month spent in therapy, only ten minutes of that time is required for neural treatment; during this period the patient must be unconscious and sensory stimulus kept to a minimum. The DNA vector is usually designed to deal with neural tissue first, so that for the rest of the treatment patients may communicate freely by means of a datajack or magical mindlink. Those with datajacks frequently spend their treatment period virtually living in the Matrix.

The treatments listed below are the most common applications of gene therapy; gamemasters should develop other specific examples as they see fit. Any gene therapy that affects the entire body—as almost all of them will—will take at least two months and cost 50,000¥. Such treatments will also have some impact on bio index; the degree depends on how large the changes are. Fixing sickle-cell anemia will have a much smaller impact than restoring a healthy body to a muscular dystrophy sufferer. Any whole-body therapy that merely restores the body to its existing genetic pattern requires a minimum of one month and 30,000¥.

Augmented Healing: In the case of augmented healing, gene therapy will heal all remaining boxes of damage on the patient's condition monitor, even if magical healing has already been applied. In this case, the healing time is reduced by half. Augmented healing will also restore damaged organs and regrow severed limbs, though this takes longer (see the Body Part Types Table, p. 128, SR3).

Note that augmented healing may be applied to characters with unnatural implants (such as cyberware or bioware) by using tailored treatment nanites that are directed away from the implants using a complicated set of control signals and instructions. In such cases, the cost of the process increases by 25 percent though treatment time remains the same. This procedure cannot be used to repair damaged cyberware or bioware.

Cellular Repair: Cellular repair therapy is used to mend any otherwise-irreparable damage on a somatic level. This includes healing the effects of permanent neurotoxin dam-

age, correcting physical flaws, or repairing Attribute loss due to disease or severe physical trauma. It can also be used to reverse the effects of boosted reflexes cyberware.

Age Rejuvenation

Each rejuvenation treatment requires one major therapy session, followed up with maintenance sessions every six months for the next three years to ensure that the treatment has been wholly effective. It may be used at any time before death. After treatment the patient is restored to a physical age of approximately twenty-one.

Rejuvenative treatments take longer for older patients, as there is more aging damage to repair; the base treatment time is one month, for those aged forty or below. For every decade of (true) age above forty, the treatment time is extended by two weeks.

This procedure has a significant impact on holistic health; it attempts to reverse one of the most natural processes of the body—aging and death. It may only be performed a limited number of times before the body's natural systems go into overshock and shutdown. Even a treatment this powerful cannot totally prevent the ravages of time—brain chemistry, for example, must be largely unaltered or the patient runs the risk of losing much of their memory and acquired motor skills.

Phenotypic Alteration

Phenotypic alteration requires the same treatment environment as gene therapy, as the process is the same despite the difference in results. Virtually any change can be effected, ranging from superficial limited alterations (eye color, hair texture) to gross physical amendment. Note that any alteration that is not natural for the patient's metatype automatically counts as a major change when calculating treatment time and cost.

This technique can increase the character's Racial Modified Limit for Body, Strength and/or Quickness by 1. Each attribute to be affected requires a separate treatment. Each can only be altered once. These modifications automatically count as major changes. Once the treatment is complete, the new Racial Modified Limit applies in all situations for the character. This increase also affects the character's Attribute Maximum for that attribute only (Attribute Maximum is equal to the Racial Modified Limit x 1.5, round up). Note that this process does not increase the attribute itself, it just increases the attribute's Racial Modified Limit.

Therapy	Treatment Time	Bio Index	Cost	Availability	Street Index	Legality
Genetic Correction	6 months	0.2–0.5	60,000¥	6/21 days	2	Legal
Augmented Healing	Special	—	2,500¥ per week	6/21 days	2	Legal
Cellular Repair	6 months	—	50,000¥	6/21 days	2	Legal

Age Rejuvenation	Treatment Time	Bio Index	Cost	Availability	Street Index	Legality
Rejuvenative Treatment	3+ months	1	2,000,000¥	8/30 days	2.5	Legal
Maintenance Session	1 month	—	100,000¥	8/30 days	2.5	Legal



Environmental Microadaptation

Cold Adaptation: Adaptation for cold environments modifies the subject's metabolic processes to maximize internal heat retention, performs minute alterations to the chemistry of interstitial and cellular fluids to lower their freezing point, and replaces ordinary metabolites with equivalent substances less sensitive to low temperatures. It also adds a number of reaction catalysts to speed up bodily processes that would normally be slowed at low temperatures. Cold-adapted subjects often require more food and report extreme discomfort or hyperactivity in normal climates, especially as they have difficulty radiating heat (the gamemaster determines exact effects/penalties). This enhancement allows the character +2 dice for resisting cold-related damage, and the character receives a -2 modifier for cold-environment Survival Tests (see p. 106, *Target: Wastelands*).

Heat Adaptation: Heat tolerance is conveyed by increasing water retention to avoid dehydration, speeding blood flow to allow increased heat diffusion and altering metabolic processes to use proteins and compounds that do not break down in higher temperatures. Those adapted to high temperatures feel sluggish at ordinary temperatures and usually suffer high blood pressure (the gamemaster determines exact effects/penalties). This enhancement allows the character +2 dice for resisting heat damage, though it does not protect against burning. The character also receives a -2 modifier for hot-environment Survival Tests (see p. 106, *Target: Wastelands*).

Low-Oxygen Adaptation: Adaptation for environments low in oxygen replaces a few metabolic pathways with anaerobic equivalents. Additionally, an adapted subject has modified myoglobin in his bloodstream, which retains oxygen under normal conditions and thus allows him to hold his breath for longer. The rules for holding one's breath (pp. 47-8, *SRComp*) apply, but each success on the Athletics Test increases the duration by 10 Combat Turns rather than 3. At normal oxygen levels, subjects suffer hyperoxia, which causes respiratory damage and hyperaccelerated cell aging (treat as oxygen toxicity, p. 109, *Cannon Companion*).

Pollution Tolerance Adaptation: Engineering pollution tolerance relies primarily on modifying cellular receptors to be resistant to heavy metals and changing metabolic intermediaries to homologues that are not sensitive to heavy metals and similar contaminants. The procedure also generates

new proteins capable of isolating and disposing of heavy metals, and compounds to render organic contaminants and toxins inert. Characters with this adaptation receive +3 Body dice for the purposes of resisting chemical attacks from pollutants, heavy metals and other related toxins.

Direct Protein Synthesis

The modification for direct protein synthesis generates a protein by-product directly into the user's system instead of triggering the normal regulatory pathways. The genetic sequence for these surplus proteins is encoded into "junk DNA" and a simple expression-control mechanism is installed. Unlike most proteins, these are not regulated by normal bodily processes; they are constantly produced, and in extreme situations they may cause more harm than good.

The following proteins are examples of what can be produced by direct protein synthesis. Gamemasters and players are encouraged to research and develop other protein enhancements for the Sixth World. Most genetic modifications of this nature require a minimal treatment time, merely enough time to rewrite the body's DNA. The protein synthesis will then increase until the enhancement is at full effectiveness—approximately one month after treatment is complete. Enhancements that have a significant physical effect (such as calcitonin's strengthening of skeletal structure) require longer treatment to express the physical changes, but they take effect as soon as the character leaves the clinic.

Angiotensin: This protein regulates blood flow through the body. It causes capillary beds to contract and stimulates water retention. Its vasoconstrictive effect is particularly useful in situations of massive blood loss. When a character with direct angiotensin synthesis takes a Deadly physical wound (see pp. 125-126, *SR3*), additional damage due to blood loss and shock accrues at a reduced rate of one box every (Body Rating x 2) Combat Turns.

Calcitonin: Calcitonin enhances bone density and strength by increasing osteoclast activity and skeletal calcium uptake. A character with direct calcitonin synthesis develops naturally strong bones that cannot be detected (unlike bone lacing). This grants a +1 modifier to Body for Damage Resistance Tests and prevents bones from breaking under normal circumstances; they have a Barrier rating of 6.

Phenotypic Alteration	Treatment Time	Bio Index	Cost	Availability	Street Index	Legality
Minor Changes (eye color, etc.)	4 months	0.1	50,000¥	5/21 days	2	Legal
Major Changes (height, weight etc.)	6 months	0.5	65,000¥	5/21 days	2	Legal

Adaptation	Treatment Time	Bio Index	Cost	Availability	Street Index	Legality
Cold	3 months	0.4	60,000¥	6/30 days	2	Legal
Heat	3 months	0.3	60,000¥	6/30 days	2	Legal
Low-Oxygen	2 months	0.3	50,000¥	6/30 days	2	Legal
Pollution	2 months	0.2	50,000¥	6/30 days	2	Legal



Erythropoietin: This is a hormone that stimulates production of red blood cells (erythrocytes), commonly used as a performance-enhancing additive in professional sports for over a century. Continuous generation of erythropoietin significantly increases erythrocyte counts and aids in physical exertion by ensuring a constant supply of oxygen. Characters with direct erythropoietin synthesis receive +2 dice for all Athletics tests.

Glucagon: Glucagon is a vital intermediary in the metabolism of energy stores in the body; it catalyses the liver's conversion of glycogen into glucose, ensuring a steady supply of energy. This is particularly useful for those who exert themselves over long periods of time. Characters with enhanced supplies of glucagon double all listed times when dealing with the effects of fatigue (p. 47, *SRComp*). Their health should be carefully monitored, however, to avoid complications like diabetes.

DNA Masking

This procedure changes parts of the character's non-coding genetic sequence so that a DNA scanner will not produce a positive identification when searching the genome ID databases. When a character with DNA masking has a sample taken for scanning, roll an Opposed Test between the rating of the DNA masking and the rating of the DNA scanner. If the masking and scanner have equal successes, the scanner will indicate to the operator that further identification is required by other methods.

DNA Scanners

A DNA scan is usually only employed when more practical means of identification turn up anomalous or inconclusive results. The results of a DNA scan are considered sufficient to hold a suspect for further investigation, but are not



legally admissible. Forensic evidence for prosecution must be obtained by proper medical sampling and laboratory testing.

If the scan is performed on a character with DNA masking, it takes a number of minutes equal to the scanner's rating—a more advanced scanner performs exhaustive searches of obscure records, where a basic model will just briefly query the major local ID database. This time may be reduced by any excess successes on the Opposed Test, if the scanner wins. If the scan is performed on someone with no unregistered DNA alterations, it takes one minute to return the results.

Substance	Treatment Time	Bio Index	Cost	Availability	Street Index	Legality
Angiotensin	2 months	0.3	40,000¥	6/30 days	2	Legal
Calcitonin	4 months	0.4	60,000¥	6/30 days	2	6P-N
Erythropoietin	2 months	0.4	40,000¥	6/30 days	2	Legal
Glucagon	2 months	0.3	40,000¥	6/30 days	2	Legal

DNA Masking Level	Treatment Time	Bio Index	Cost	Availability	Street Index	Legality
1-3	3 weeks + 1 week per level	—	7,500 x Level	8/14 days	3	2-Z
4-6	3 weeks + 1 week per level	0.1	10,000 x Level	10/21 days	3	2-Z
7-9	3 weeks + 1 week per level	0.1	15,000 x Level	14/21 days	3	2-Z
10+	3 weeks + 1 week per level	0.2	20,000 x Level	18/28 days	3	2-Z

Model	Rating	Cost	Availability	Street Index	Legality
Sony ScanBuddy 2062	2	1,000¥	Always	1	8P-U
Yakashima Gentest Pro	3	1,500¥	Always	1	6P-U
Genexpress Assaymatic 5131	5	2,500¥	6/14 days	1	5P-U
Universal Omnitech GSC-15	7	3,500¥	10/21 days	2	5P-V
Cross Biomedical Ident Deluxe	9	4,500¥	12/1 mo.	2	5P-V



Immunization

A patient undergoing immunization is injected with a culture of engineered hybridomas, which propagate through the body and germinate until they have established themselves in the patient's system. Though the treatment is instantaneous, it takes a month for the immunity to develop fully. The hybridomas produce specialized antibodies that circulate around the body until they encounter one particular target compound. They bind to the compound, render it inert and tag it for expulsion in a hyper-efficient version of normal immune responses.

This cycle gives the subject complete resistance to normal doses of the particular compound. In the event of increased or abnormal exposure to the substance, which may overwhelm the responsiveness of the antibodies, immunity is not guaranteed. The antibodies still assist in resisting the compound, however; the Power of the disease, toxin or pathogen is reduced by half in such cases (round down). Determining how much exposure is excessive is up to the gamemaster's discretion, depending on the situation and the compound in question.

At the gamemaster's discretion, immunization may also protect the character from very similar compounds, perhaps reducing the Power by half.

A patient may only be immunized against a number of compounds equal to his or her Body (excluding modifiers for race, cyberware or bioware). Any immunizations beyond this point disturb the immune system to the point of failure, with unpleasant consequences. Each immunization treatment is permanent,

as the hybridoma cells are effectively immortal.

Note that genetic immunization shots are not available against neuro-toxins and fast-acting compounds (anything with a Speed of Immediate). To immunize against these compounds, the character must undergo cell-repair genetic therapy (p. 26).

SUBSTANCES

These rules cover the substances described on pp. 22-25.

Protective Agents

The listed protective agents are all synthesized *in vitro* and administered only when required. They may be applied before, during or after exposure to the toxin or infection. None of the agents aid in actually repairing cellular damage caused by pathogenic attack; this is the purview of genetic cellular repair or augmented healing therapy.

Antibac/Zeta-Interferon: Antibac protects against bacteria and diseases; zeta-interferon protects against virii. If applied prior to exposure or before the infection's Speed period has passed (in other words, before the character has been infected), then the character subtracts the agent's rating from the target number for any Body Tests to determine infection and/or the infection's Power for Damage Resistance Tests. If the infection's Power is reduced to 0 or less, the character is immune to its effects. Each dose of antibac/zeta-interferon lasts for 24 hours. Further doses of these agents may be given to grant extended protection.

Immunization	Bio Index	Cost	Availability	Street Index	Legality
Genetic Immunization	0.1	25,000¥	6/18 days	2	Legal

Agent	Cost	Availability	Street Index	Legality
Antibac				
1-3	500¥ x rating	2/24 days	2	Legal
4-6	1,000¥ x rating	2/24 days	2	Legal
7-9	1,500¥ x rating	4/24 days	2	Legal
10+	2,500¥ x rating	6/24 days	2	Legal
Binder				
1-3	300¥ x rating	Always	2	Legal
4-6	600¥ x rating	2/48 days	2	Legal
7-9	900¥ x rating	4/48 days	2	Legal
10+	1,500¥ x rating	6/48 days	2	Legal
Zeta-Interferon				
1-3	400¥ x rating	Always	2	Legal
4-6	800¥ x rating	2/48 days	2	Legal
7-9	1,200¥ x rating	4/48 days	2	Legal
10+	2,000¥ x rating	6/48 days	2	Legal



If the character is already infected, antibac/zeta-interferon will reduce any side effects of the infection to half potency (round down). Reduce the Power of the infection by the agent's rating for any Damage Resistance Tests. If the damage is reduced to nothing, the infection has been eliminated.

The success of antibac/zeta-interferon cannot be determined until 24 hours after administration. At that point, a character may make a Biotech Test against the infection's original Power to determine if the agent has been successful.

Binder: Binder protects against a specific toxin (chosen when purchased); it is effective against many compounds that the broad-spectrum standard antidote patch (see p. 305, SR3) is not (gamemaster's discretion). If applied prior to exposure or before the toxin's Speed period has passed, binder provides complete immunity to the toxin's effects.

If administered after the toxin's Speed period has passed, binder reduces any effects of the toxin by half (round down) and guards against continued exposure. If the character continues to be exposed to the toxin, reduce the toxin's Power by the binder's rating and reduce the Damage level by one. If the toxin's Power is reduced to 0 or less, the character is immune to its effects.

Each dose of binder lasts for 1 hour; further doses may be given to grant extended protection.

Gamma-Anthrax

On exposure to gamma-anthrax, the character must make an unaugmented Body Test against a Power of 8. The number of successes on this test indicates the disease's incubation period in days; if 6 or more successes are scored, the character is not infected.

After the incubation period, 1 box is removed from the maximum (right side) of both of the character's Condition Monitors every 6 hours. Thus, after 24 hours the character can only sustain 6 boxes of Stun damage before falling unconscious and six boxes of Physical damage before going into overflow. The character dies if the Condition Monitors are reduced to zero. Every 24 hours that infection spreads through the character's body, the pathogen's Power increases by 1 for the purposes of resisting treatment and the character acquires a cumulative +1 target number penalty for all actions.

Correct diagnosis of gamma-anthrax requires 2 successes on a Biotech (6) Test; fewer successes grant the physician

some clues, while more successes suggest possible remedies and treatment options. Gamma-anthrax infection is susceptible to antibac treatment; if the disease is halted and defeated, the removed boxes are healed like normal combat wounds.

Ebola Plus

Ebola Plus, or Strain 74B-3, is a genetically engineered variant of the Ebola hemorrhagic fever virus. Unlike previous strains of Ebola HF, it is spread just as easily by air as by physical contact. It acts by causing internal cell necrosis and major internal and external bleeding; the subject usually dies within five or six days from massive systemic damage and shock. Autopsies will reveal that victims were almost liquefied inside.

On initial exposure to Ebola Plus, the character makes an unaugmented Body (8) Test. If the character does not achieve 6 or more successes, he or she is infected with Ebola Plus. If 6 or more successes are achieved, the character has avoided infection on this occasion but further Body (8) Tests must be made each minute the character remains exposed to the pathogen.

24 hours after exposure, an infected character must resist 8L damage using unaugmented Body only. A day later, the character must resist 8M damage. The character takes damage every day after this; on day three it is 8M again, then 8S, 8S and finally 8D. The character may not heal this damage unless the virus is eliminated.

If the character survives beyond this point, the virus is spent and the character may recover normally. The internal damage is so severe, however, that it may only be wholly rectified using magic or cellular repair genetic therapy. If the character heals naturally without this assistance, the damage to their body is so severe that they lose 2 points of Body permanently due to disability. This Body loss may be repaired later using genetic therapy.

Zeta-interferon is effective against Strain 74B-3, but at only half its usual strength (round down) due to the pathogen's immunosuppressant qualities.

Diagnosing Ebola Plus requires a Biotech (6) Test. With less than 3 successes, the condition may be misdiagnosed as normal Ebola; if the test fails entirely the usual diagnosis is influenza or, in later stages of the disease, an "unknown viral attack."

Substance	Damage	Speed	Vector	Cost	Availability	Street Index	Legality
Gamma-Anthrax	Special	Special	Air, contact, injection	1,250¥/dose	16/30 days	5	2-Z
Ebola Plus	Special	Varies	Air, contact, injection	5,000¥/dose	20/30 days	6	1-Z

CHARMED LIFE: NEW METAMAGIC



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Welcome to Magicknet!

This is **the** place for online magic discussions, peer-approval and open-source formulae! Please remember to abide by the rules in the Terms of Service and enjoy your stay!

Message of the Day: "There are more things in Heaven and Earth, Horatio, than are dreamt of in your philosophy."

—William Shakespeare, *Hamlet*.

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Welcome to Magick Undernet.

Wipe your feet as you come in the door. Remember, the Decker on the Threshold knows who you are and can always find you.

<Accessing: Forums>
<Accessing: What's New?>

• In a society where information is king, the question "What's new?" pops up the most often. We aren't satisfied with the now. There has to be something more, something different, something that will set the world on fire and yet be passé in the next five nanoseconds.

A few colleagues say that this is a sickness that plagues us. Sometimes, when I see yet another magician wannabe die from trying out a new and untested theory on a dare, I'm half-inclined to agree. But it is also this continuous drive for the new and different that keeps us moving forward and learning. Stagnation has never been one of our overriding traits. The only problem is that we tend to forget or disregard the lessons of the past and so lose part of the bigger picture.



To put things in plainer language for the attention-deficient "now crowd": new is not bad, but neither is old. So before you move on to the meaty bits that you're craving, take your Magic Theory veggles. Trust me, they're good for you.

• Silicon Mage

Transmitted: 04 December 2062 at 03:51:35 (PST)

MAGIC THEORY 101

by Silicon Mage

Regardless of your background, mages, shamans and scholars of magic alike can always use an overview of the basics. Too often, we get lost in the details and need to be reminded that there are still many things that we simply haven't discovered yet—and many times the key lies within the things that we already know.

• Or think we know. Magic is too fluid for us to claim that it can only act in certain ways. Look at what happened during Halley's Comet, or the changes we've seen in the past ten years, and then tell me that.

• BethSheba

• I'm not too sure of that, Beth. What may look like chaos and an upset in the order of things might actually be natural. We just haven't figured what patterns or rules of behavior it follows decisively enough to be able to make that call.

• Magister

• Hermetics! Always analyzing things. Accept that magic just is and learn to live with it.

• Grizzly

To give an example, we know that in order to track someone through ritual sorcery, we must have samples of the person's DNA: blood, skin, hair and the like. The question now is: why? As in, why is that necessary? Why does that work? And why is this relevant?

The answer is simple, really. Magic is a science in the truest sense—"science" coming from the Latin word "scientia," or knowledge—and has its own laws, which allows us to predict its effects to a degree. Just how large or small that degree is has been in dispute since long before the Awakening, along with arguments of whether magic is an art or science.

• And it's become extremely cliché as to which sort of magician will argue for one or the other. We all know that hermetics will argue for science and that shamans will argue for art. This duality conveniently neglects that many of us are somewhere in between. This whole affair parallels some of the debates that used to (and sometimes still do) go on about religion versus science. Both are equally valid; just because I know how something works intellectually doesn't mean that I can't believe that I had Owl's help.

• Whisper

So what are these laws? First, if you've ever participated in ritual sorcery, then you have applied the Law of Contagion: *Things which, having once been in contact with each other, continue to act upon each other even after they are no longer in contact.*

• Well, that sure would put a damper on, um, relationships.

• Debbie

When conjuring an elemental, do you use a brazier of incense as your primary ingredient for earth elementals? Of course not. You'd use a large geode, or maybe a lake-sized mud puddle because of the Law of Similarity: *Like produces like, the effect resembling the cause.* There are a good number of other laws, such as the Law of Knowledge: *The more you know of a subject, the more you are able to act on that subject.* This can apply to many things, apart from recognizing that knowing a spirit's true name allows you to control it. The Law of Association sounds nearly the same as Similarity: *If two subjects or objects have one or more factors in common, then they interact through those commonalities and facilitate control over one or the other.*

And now we come back to my previous question: why is this relevant? Answer: we have yet to realize all the uses that could be put to various aspects of magic even with these simple laws. Those of you still paying attention are likely nodding your heads and telling me that I'm repeating myself, but it bears repeating at least for the sake of those with short attention spans. All of this is for the good *and* the bad. Go ahead and read about all the new drek, and then ask yourself how each really works. Not only might you learn a thing or two, but you might also save your friends and family the cost of your funeral.

• Oh thanks, fossil. Do I get to kiss the hem of your robe now?

• Rat Boy

• Only if you say "please." Goddess, this is just the sort of attitude Silicon Mage was talking about. Young shamans and mages come into a part of their power and develop a chip on their shoulder the size of Lofwyr's bank account. Look kid, we've been there before, we know how powerful you're feeling. We know you want to know everything right now, especially anything new. The only reason we've stuck around so far is either through luck or seeing a few friends get buried from stupidity, either our own or someone else's. Try to learn something before you make that mistake.

• Labrys

• I already knew this stuff, but I hadda find out the hard way—an' burn down my doss in the process. I scan ya, Rat Boy, but the fossil's right, even if he sounds like he's got a focus stuffed sideways up his hoop. Just gotta prove to him that sometimes we got better heads on our shoulders than the rest give us credit for.

• Orkana



PRESCOTT

• Thanks, I think. A few concrete examples should help illustrate my point, so read on.

• Silicon Mage

SYMPATHETIC MAGIC

• The word "sympathy" comes from the Greek roots "syn" (together) and "pathos" (feeling). In the context of sympathetic magic, it means "a sameness of feeling," or sharing an understanding of someone or something that allows for many of the more subtle forms of magic. Sympathetic magic doesn't confront you head-on, but rather tends to sneak up and catch you unaware if you're not careful. What's worse is that it uses your own things against you in the process.

The next few articles are shining examples of sympathetic magic in action. The first one, a little reminder about symbolic links and other strangeness, comes from an old chummer from way back: a chaos magician named Digitalis.

• Silicon Mage

SYMBOLICALLY SPEAKING

by Digitalis

Here's a tip for you; never get involved with a psycho, especially if she's a *houngan* with all the wrong contacts.

As you've guessed, I broke up with my girlfriend and yes, she was—a scary piece of work. When I hooked up with her, I was gonzo for her; she was "mad, bad and dangerous to know." That she knew a variety of people that I might never otherwise meet, from fast-track suits to other *houngans* and all kinds of "Familia" in between, just compounded the problem.

Looking back, though, I should have known. We had been going out for about two weeks, spending as much time with each other as we could apart from our studies and obligations of course. She spent the night with me after some heavy partying at our favorite club, and the next morning before she left, she grabbed one of my t-shirts and put it on, sticking hers into her purse. It was a little funny at the time, but I guess even then my subconscious was trying to look out for me. I asked her what she thought she was doing.

"I just want a piece of you," she said, smiling that killer smile of hers. "Symbolically speaking, of course."

You'd think the potential danger would sink in then, but no. At the time, I was very happy. The last thing on my mind was the possibility that she'd use this against me. What can I say? Her *malit tete* is Erzulie.

• Ah, the most beautiful and charming of the loa. To know a woman mounted by Erzulie is to know great joy. By the telling of your tale so far, however, you have seen her possessive side as well. She loves gifts. If you had objected, you would have seen her temper.

• Red Warrior

It wasn't until a few months later, when I began studying Qabballistic magic and spending a lot of time really delving into it, that she began to get very jealous. She'd scream at me, accuse me of bagging other women behind her back then

come at me with her nails. She even got a few swipes in now and then, but for the most part I could keep her at a safe distance until she calmed down. And though I was never the one at fault, somehow I always ended up buying her something to apologize. I'm not a rich mojo man, though, so I had to stop the pattern before I ended up selling everything I owned just to keep her happy. Her reaction when I told her I wanted to break up was far from what I was expecting.

"You want to be free of me?" she said. "You can leave all you like, but don't think for a moment that you're really free." She was very calm and even smiled at me. It occurred to me that maybe I should be alarmed at this, but then I figured that maybe she thought she had me wrapped around her finger and I'd be back. Tough chance of that, right? Even if I could make enough money to buy her all the gizmos she wanted, which I can't since I'm not a corp stooge and legit street work tends to keep you poor, I wouldn't take her back. Way too temperamental for me.

• Hey, I thought voodoo was outlawed. What's Digitalis doing messing with this chica, then?

• Bagger

• Only in the CAS, Bagger. Didn't you read about all the hoodoo durin' the comet fever? Even with as much information as the CAS gummin' has been amassing about the shedim since then, showin' they're somethin' entirely new, they've been keepin' a tight lid on voodoo practitioners until they're sure that they ain't the ones who summoned 'em. While the UCAS, and by extension Seattle, has been keepin' an eye on them, they ain't done anything else beyond issuin' that alert.

• CASper

And so, just yesterday as I was meditating and contemplating the Tree of Life of the Qabala, I got that queasy, uneasy feeling that something was on its way. Someone somewhere was *sending* something at me. I took a quick peek into the astral and sure enough, there was that tell-tale nimbus of building energies. Ritual sorcery. Worse, it looked like a spell designed to control my emotions—and not just by a little bit. I spared another look-see around just to be sure that no astral critters were lurking nearby and then took the full plunge into the astral. I needed to know who was doing this and from where before I put up my shielding, though I had my suspicions. I don't like to be jerked around, so I wanted to be able to find the hoopfragger when it was all over.

I found the source of the sending in my ex-girlfriend's neighborhood. I was pretty sure, at least; the astral energies were worse there than I remembered. The source ended at an astral barrier which looked like a shamanic lodge or hermetic circle. Coupled with my suspicions about who this was, I guessed that this was my ex and her *honfour*. I couldn't see anything inside it, so I didn't know if anyone else was with her. Attacking the barrier didn't seem like a good idea, so I went back and simply shielded against the spell. If I hadn't, it would have slammed me good. When the danger had passed, I prepared to pay a visit to my charming ex, politely ask her to leave

me the frag alone and take any ritual links to me that she might still have.

She seemed pretty pleased with herself when I showed up at her front door. After all, she had to have known that her spell failed, and here I was anyway. I don't think she counted on me being well and truly horked, though. I pushed past her and headed straight towards the place I felt sure her *honfour* was located. It made sense that those ritual links would be kept there. Then she got shrill with me.

"You stay out of there! That is *my* place!" she shrieked, grabbing at me. Her nails dug into my arm, hard enough to draw blood, and she started writhing in that way that said she was about to cast a spell. Big mistake all around. I shoved her off of me and she bounced into a wall hard enough to knock her out. You have to understand; I'm normally a pretty easygoing guy, my taste in women aside, but I keep myself in decent shape too. She did the wrong thing in making me angry.

- What, does it turn you big, green and ugly too?
- Bruce

I stepped inside the *honfour* and encountered a tall, dark and gaunt chummer who didn't seem to be pleased to see me there. I wasn't there to be nice, though—all I wanted were those ritual links—so I ignored him and looked for the items in question. There was my t-shirt and a doll that bore some resemblance to me, both sitting on an altar, but no sign of anything that counted as an actual ritual sample in my mind. No hair, no blood, no toenail clippings, nothing with my DNA. Just my shirt and a friggin' voodoo doll.

That's when it hit me. Somehow my ex-chica had cast ritual sorcery without having an actual material link. All she had were some items that could loosely be associated with me, or that were created to look like and represent me. I'd heard of similar things before, but this was the first time I'd ever seen it in practice. I've done some research into it since then, and I've become convinced that it takes a special type of metamagic common among certain traditions such as voodoo.

What this means is that you may not be safe from ritual sorcery just because your enemy doesn't have a sample of your body. With the right know-how, all that magician needs is something you once touched or owned, a photograph or even a friggin' drawing. I guess now I understand why some deckers never want to meet in person—who wants to show their face when it can be used against them?

- What a wake-up call. Not that I'm not careful with my things, but it is easy to forget that sometimes someone's desperate enough to get at you to use anything they can get. Paranoia doesn't look so bad, now.
- Penny
- Hey Digitals, don't leave us hanging! Did anything else happen in the *honfour*? What was up with the creepy guy?
- JR

- Well, to say that things turned inside out after that would be a huge understatement.

I was so focused on figuring out how she had used ritual sorcery on me that I didn't even notice what else was in the *honfour*—namely, a row of desiccated corpses lined up under the altar. That brought me back to the present, and I realized Mr. Creepy had been standing there the whole time waiting for me to pay attention. He casually reached over and placed his hand on the shoulder, like we needed to have a talk. But his hand exuded a numbing chill that shouldn't have been possible in a normal person. I jerked and fell over, kicking over the altar. I looked up at the man and paralyzing fear washed over me, rooting me to the spot. I think he even smiled. That's when I blacked out.

- Digitals
- You have got to be drekking me. You know that sounds like a shedim, if not a master shedim, right?
- Skeptic
- Skep, I'm as serious as a heart attack.
- Digitals
- Ha ha ha, that's funny. Oh wait, that wasn't supposed to be a joke.
- Mandrake
- So then what happened, Digit?
- Extractor

• Well, I came to when the same guy shook me awake. There was a big difference between this new touch and the one from earlier, though—mainly in that this touch was a lot more human and gentler. The story he related to me sounded strange, but since I wasn't conscious for part of it, it's the only one I have to go off of.

Basically, he introduced himself as a *houngan* whose *maltete* is that of Ghede. Previously, he and my ex were working together and shared the *honfour*. He had begun to suspect that she was starting to follow the Petro path, and so astrally projected one evening in order to follow her to be sure. That's when "the dark, bad spirit," as he called it, took up residence in his body. Since it was too powerful for him to dislodge, he says he went to Guinee and pleaded for Ghede's help. When I eventually came along, he claims that Ghede mounted me and drove the spirit off so that he could return to his own body.

- Digitals
- You mean to tell me that a loa stepped in and took on a shedim? On its own accord?
- Magister
- Sure, and why not? The shedim are trampling all over Ghede's backyard and are responsible, directly or not, for his followers getting in drekloads of trouble in the CAS and elsewhere. It's in



his best interests to answer a call for help in a case like this. What might be surprising is if a different loa answered the call. Their followers are in as much trouble, but something like this isn't quite their bailiwick, you see.

• Dumallier

• Regardless of the truth in his story—and some of it does jibe with the little I know of voodoo, shedim and such—I was okay. My ex was still out cold, and the houngan assured me that she would be taken care of. I didn't want to question what that would entail—the less I know, the better—so I just asked for the ritual links belonging to me and something to drink. Then I hit the road.

I tell you, though, I'm finding it hard to sleep at night. All I think about is that she can whip up a new little doll that looks like me whenever she pleases and send some mojo my way. She was right. With that hanging over my head, I never will be free of her.

• Digitalis

• No kidding. Shedim, Tutor and Imps, oh my! Add a serving of "fellow magician," mix it up well and voilà!

• George

• C'mon folks, it's not that bad. Haven't you seen the newest article in *Hermetic Digest*?

• Wiz Kid

• Not yet. What's the buzz, Kid?

• Silicon Mage

• It's a new technique. They're saying you can sever the connection between yourself and potential ritual links.

• Wiz Kid

• Hold on, then, and let me grab a copy of the article to post.

• Silicon Mage

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SEVERING RITUAL LINKS

by Dr. Ennosuke Uemura

January 2063, *Hermetic Digest*

• Dr. Uemura is a top researcher in MCT's Thaumaturgical Research and Development Department. He doesn't do much publishing, which makes him an odd bird if he were a university professor, but he's positively prolific for a corp researcher, considering most of the publishing the other lab monkeys in R&D do consists of internal company memos and reports.

• Kensai

It is a foregone fact that group magic, or ritual magic, is a force to be reckoned with, particularly when the members composing that group are puissant and knowledgeable wielders of mana. How then is a lone magician to ever stop such a

group, should he ever be singled out for their attentions? It would seem that, even were our lone magician an initiate of some tradition with power, he has not much chance to resist.

• I'm not a fan of ritual magic on the receiving end, but get a grip. Shielding can take care of that.

• Orkana

In observing and testing each stage of ritual magic and applying the basic theories from the *Manual of Practical Thaumaturgy, 24th Edition*, it has been observed that there is a tangible astral connection between magician and ritual link. Such a connection may be affected in the same manner that an astral barrier, ward or other astral phenomena, including spirits, might. That is, it may be banished or disrupted at least for a time, after which the connection re-establishes and solidifies.

• How can you people read this on a regular basis? I can't read this without falling asleep or feeling like I've got bees buzzing in my head.

• Fatima

• Liberal doses of soykaf, my dear, and turning on the bulldrek filter. To translate simply, what Dr. Uemura is saying is that you can sever the link between you and a ritual team. He compares it to overcoming astral barriers and the like.

• Silicon Mage

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• Hope you don't mind, Mage, but I condensed the rest. The article goes on and on for about ten pages at least. Even my bulldrek filter can only handle so much, so I can't imagine anyone else's taking much more.

• Talon

It has long been given that a ritual group may use this connection between a ritual link item and the item's metaphysical owner or source to, in effect, affect some degree of control on said owner. Dr. Rupert Calvin, in his work *Metaphysics and Metapsychology: Mind and Magic*, theorized that this degree of control is, in fact, bi-directional. Although he used such proofs as spells which allowed for telekinetic manipulations, which are far more direct than what this article deals with, when tested in the laboratory and in controlled field conditions, they largely bore out his theory and enabled further research in that direction.

• Translation: the link between you and a ritual team goes both ways, so you have a chance of doing something about it. This falls simultaneously under the laws of Association and Knowledge. It also reminds me of a story passed along to me. I'll post it after we're done with this article.

• Silicon Mage



The full extent of the control a mage may have upon his link, we speculate, is potentially quite large but not fully explored. As our research is tightly focused upon the conditions associated with ritual magic enacted upon the targeted mage, we cannot say what is possible outside those conditions. At this time, however, we can say with confidence that a mage whose knowledge and experience has initiated him into the higher mysteries may possess enough control over the link between himself and a ritual link item to be able to sever it and thereby negate the sending of a spell through ritual sorcery.

- Otherwise known as you can only sever a ritual link after the ritual team has locked on to you and while they're actually sending the spell over. Oh, yeah, and you have to be an initiate and know how. Nah.

- BethSheba

- Makes sense. You can't sever a link before the link is made, right? You have to do it after they've zeroed in on you—which means that you only have a small window of opportunity to save your hoop. You have to be quicker on the draw than the ritual team, and if you fail to notice the link in the first place, you're hosed.

- Fatima

- I've read some reports about a corp magical research group that will remain unnamed, indicating that they are looking into some way to prevent the ritual link from ever being established in the first place. The way I scanned it, they were developing some sort of masking or invisibility against ritual links, making it more difficult for the ritual team to tag you. Problem is, they haven't been able to get it to work yet when they know someone's trying to make the link, much less having some sort of "link shield" on all of the time.

- Grey Knight

Tests conducted with mages of lesser power helped reveal the reason why only mages possessing the minimum requisite experience were able to sever the link. When conducting interviews with the control group, several participants noted that in order to perform the cutting of the ties between them and their links, it was necessary to engage in a "tug-of-war" with the ritual group so as to exert or seize the aforementioned control over his or her link item. The secondary group reported no such struggle for supremacy and when asked afterward about this lack, each individual related that a sign of tension was not even felt.

- Okay, I can understand what tug of war means. So this means you've got to beat the guys at the other end before you can sever?

- Fatima

- You're learning. I'm not sure if it's before or during the actual severing, but the idea seems to be the same either way.

- Silicon Mage

Further studies and tests revealed that a mage may break his link even if he is unaware which link item is being used against him, but he has a higher degree of success when he is fully aware. The time it took each mage to break his link varied. Careful analysis between each case turned up a pattern which related to the mage's degree of sorcerous potency; the more potent the mage, the shorter the time spent on the severing of the ritual link connection.

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- Ugh, the reading is so dry, my mouth is getting parched.
- Fatima

- Agreed, so I'm afraid that even with Talon's kind condensation of the material, I'll have to stop it here. What this is saying, essentially, is that you can cut the link even if you don't know what material (or symbolic, as we've seen above) item they used to establish the link. The more powerful you are, the less time it takes.

- Silicon Mage

- Here's something I'll bet that article didn't cover. What about bonded foci? Does severing affect the bond?

- Penny

- Actually the article did. Dr. Uemura said that severing doesn't cut the bond, it just disrupts the link. This was the one point which really drew my attention more than anything, because I'm not sure exactly how a ritual link is different from the bond to a focus. I'd always thought of them as being the same thing, but maybe there's enough of a difference to where you can't just up and cut your bond whenever you feel like it.

- Wiz Kid

- Makes sense to me. A bond represents a pretty big investment of your power. In my estimation at least, only the investment into an ally spirit is bigger.

- Sourceress

- You've never written a thesis as an ordeal, have you?

- Raven

TURNING THE TABLES

by Diana Noctua

- A friend who reads everything related to law enforcement saw this posted in an obscure journal dedicated to quasi-legal jobs and wisely decided to show it to me. The biographical information about the authoress says that she is a shaman who follows the goddess Artemis, an idol of the Moon Maiden, and that she has been a bounty hunter for fifteen years. (Who would have thought?) The information she presents in here is definitely useful in other respects, so take notes.

- Silicon Mage



I may not be as well known as Andrea McBaine, but I can tell you that I have at least as many bounties on my record as she does. I've bagged some of the toughest skips to find, and I've never lost a skip. Never.

- Just so you can follow what Ms. Noctua is saying, a skip is what they call someone who is out on bail due to a bail bondsman, and has skipped showing up for their required court date. Bail bondsmen only get their money back when the people they insure show up for their court hearing, so they sometimes need to employ bounty hunters to bring them back for that hearing.
- X-Star

Anyone who's done a little bounty hunting knows you need an edge along with the basics every hunter needs (acting ability, contacts, smarts, good equipment and sheer nerve). My edge is magic, though some acquaintances say it's stubbornness. Since there aren't many bounty hunters who can also toss a spell or two, I don't mind sharing a little trick I came up with.

First, you need to have a good working relationship with at least one bail bondsmen, if not two or three. This trust factor will get you in and allow for this trick to work, otherwise it gets more complicated, and complicated means messy. Whenever your trusty bondsman has a potentially huge bond invested or the likelihood of a skip is high, ask to tag along when he or she has a little chat with the investment in question. You know the one: "Don't skip town, okay?" Naturally some of them take this as a challenge and do so anyway, which is where we come in.

During the talk—and for this, you have to have a light touch—you slip a little something into the soon-to-be-skip's pocket or handbag. This is the hard part, since that something needs to be small and it has to part of something you'll have access to later. I've used small pieces of brick from a particular abandoned building in the Barrens, petals of a flower, even a strand of my own hair when I was in a rush once. The important thing is to also cast a Preserve spell on the component, so that it remains viable as a potential material link. See where I'm going with this yet?

If our bond skips, that's when my hunt begins. Gramps always said, "It takes two to tango," so I just took that a step further. I whip up a little ritual sorcery and use whatever thing my planted object was a piece of (the brick building, the flower or myself, to continue the examples) as a material link to the component itself. Get it? It's sorta like ritual sorcery in reverse. Rather than using a small piece of something as a material link to the bigger thing, I do it the other way around, and use the big thing to track down the little thing.

- She's crazy. She's talking about planting a potential ritual link to herself on a criminal! What if the guy finds out and he's a mage, too?
- Penny
- That just makes my job easier, sweetie. Then I get to track the Sending, because he's gone and announced his location. Either way, I win.
- Diana

• The simple solution to that risk is to use something that's not connected to you. Find a tree in the middle of nowhere in some park, cut off a twig and cast Preserve on it. Drop the twig in someone's possessions. Odds are that even if the skip finds the twig, he won't realize what it's for. Even if he does recognize it as a potential ritual link, and he tries to track it back, all he'll find is some tree in a park. Unless you happen to be using the tree as a material link for ritual sorcery when he comes looking, there's no risk involved.

• Murphy

So, with a prayer to Artemis and a little luck, I can track the whereabouts of my planted item. Most of the time it's still in the pocket or handbag I dropped it, but once in a while the skip finds it and just carries it around. If nothing else, it'll be sitting in whatever drekhole he's hiding. From there it's just a matter of finding out if the skip is home or not. You can either look for him astrally if you checked him out the first time, or use your trusty friend, the telephone.

• Could you pull this reverse ritual sorcery trick against a symbolic link?

• Reciprocity Rik

• Theoretically you could, if you knew how to use symbolic links in the first place. It's trickier, of course.

• Digitallis

• I've used this technique not as a tracking device, but to save my own hoop from potential ritual sorcery. I took a nasty hit on a run once and left a nice pool of blood behind at the scene. Another magician was able to heal me quick, but I knew for a fact that the crew we had just scragged would use my blood to come after me with ritual magic. So before I even felt the tingle that told me a sending was coming, I called up my Initiatory group on the batphone. It was a close race, but I managed to cook away the blood before they had established the actual ritual link that would allow them to send some bad mojo my way.

• Eli

• Yeah, but if you don't destroy the material link before they've zeroed in on you, it won't matter. Once they've established a connection, they don't need it anymore.

• Junebug

PSYCHOMETRY

• Next we have something coming from the more legitimate side of law enforcement. Word has it that many outfits like Lone Star, Knight Errant and even Denver's Zone Defense Force provide new recruits with a crash course in psychometry, whether the student is magically inclined or not. The reasoning behind the mundanes learning about psychometry is twofold: 1) so that they know how it works on the outside chance they run

into it or need it during field duty, and 2) just in case any of the mundanes aren't so mundane after all. Although this is a metamagic, there's still enough folklore about people who supposedly naturally possess the ability that no one wants to take the chance on it not being true.

• Silicon Mage

Psychometry is the ancient art of sensing the history of objects and of the people associated with them. It is similar to divination in that both seek to discover information using objects, but differs in its focus. While divination is concerned with the future, psychometry deals with the past.

The word "psychometry" means "soul measuring." In its simplest form, it merely involves handling an object and opening the mind to the psychic and emotional energies associated with the object. Prior to the Awakening, psychometry was most often practiced by psychics and mediums and sometimes provided useful insights. Even bastions of skepticism such as big-city police departments occasionally employed practitioners to aid them (unofficially, of course) in some of their cases, particularly those involving missing persons or high-profile unsolved murders. After the return of magic changed everything, a technique that many regarded as a mere parlor trick took its legitimate place as a valuable tool. Psychometry has proven useful not just for law enforcement or for its original "fortune-telling" applications, but also for the study of history, psychology, archaeology and many other disciplines.

Magical theorists differ on the origin of psychometry's power; some claim that the visions come from spirits who then pass them on to the initiate, while others believe that they are a result of the energies that surround everything in the world—energies that, similar to magical background counts, become more powerful in the presence of strong emotions. This property in particular makes psychometry useful in criminal investigations, particularly in the area of violent crime.

• So how is this different from assensing?

• Blarney

• In a lot of ways it isn't. Think of it as kind of a super-powered version of assensing.

• Elvis

• That isn't quite correct—it would be closer to say that psychometry is a more refined version of assensing. You can get greater detail using psychometry than you can by simply assensing an object and, more importantly, you can pick up past impressions about the object.

• Winterhawk

• You mean if you find half of my Nuke 'em Burger in the trash at the Stuffer Shack, you can figure out it was me who was eating it?

• Jenner



- Quite possibly.
- Magister

- Especially if you were really emotionally involved with your Nuke 'em Burger, Jen.
- Wag the Frog

Psychic Impressions

Psychometry is not an exact art; the way in which it manifests depends on the particular practitioner's sensitivity, magical tradition and beliefs, and can even vary depending on the nature of the individual session. Common ways in which psychometric visions might manifest include:

- Emotional: The magician might feel emotions similar to those felt by people connected to the psychic impression.
- Sensory: The magician might get vivid visual, auditory, olfactory, tactile and/or taste-related sensations based on the impression.
- Somatic: The magician's body might react to the energies. For example, if the subject of an impression experienced an illness, the magician might manifest symptoms of the same illness. Irregular heartbeat and increased body temperature can also occur.

Regardless of their manifestation, the "visions" a practitioner of psychometry receives from an object are rarely straightforward. She might see a rapid series of disconnected events, suffer a quick flash of pain or nausea, feel a sudden overwhelming sadness or receive a brief impression of an odor or a taste. Standard procedure calls for the magician to record the session in some way if possible, either using an electronic device or employing another person to write down the impressions before they are lost. Psychometry can be a physically and emotionally harrowing experience.

- They're not kidding. Awhile ago I got hired to find a mid-level corp manager who'd gone missing. I used psychometry on his old fraternity ring, which we happened to find under the dining table when we searched the house for clues. As soon as I held it I started tasting wine, but then after a few seconds I got a vision of something dark coming toward me and the wine taste changed to blood. I nearly lost my lunch. Turns out the guy's ex-girlfriend had bashed him over the head one evening during a romantic dinner and buried him in a shed in her back yard.
- Cougar

Backlash

Sometimes, the "visions" manifested during psychometry can bring about violent reactions such as fainting, severe headache, nausea, exhaustion or emotional distress. This is especially true if the magician is highly sensitive to psychic energies or if the object was connected with a particularly intense physical or emotional event. Rare cases have been recorded where magicians suffered "psychic wounds," similar to those inflicted on an astrally projecting magician's physical body when his astral form is wounded.

It is occasionally possible that a magician will be unable even to hold an object associated with a violent past—any

attempt to touch the object causes physical and emotional discomfort that persists until contact is broken. It is still possible to read such objects, but the discomfort adds significantly to the difficulty. In such cases the decision regarding whether to proceed is left to the magician—if another psychometrist is available, the magician is urged to call him or her in for consultation.

- Yow. How serious is this backlash? Can you get brain-fried from it, or are we just talking about feeling like drek for awhile?
- Calloway

- I've never heard of anyone dying from it, if that's what you're worried about. But I speak from experience that it can be quite unpleasant.
- Winterhawk

- Don't be so sure about that no-dying part—a chummer told me about a friend of his who tried to read a necklace left at a murder scene. Just when it seemed like she was getting somewhere, she screamed and jerked her head so violently that she snapped her neck and keeled over dead. Turns out later that the murder victim had had her own neck broken too.

- Murphy

- Hmm. Is there any way to intentionally leave a nasty impression on an object? Sort of like leaving a trap for any psychometrists who come along?

- Twister

- Oh, great. Astral black IC. Just what we need.
- Barnaby

- You'd be amazed at what can be left behind if you know what you are doing.
- Binder-in-the-Dark

Countering Psychometry

Be aware in the course of your investigations that psychometry is not a perfect tool—as with most magical techniques, there are ways to counter it. Initiated magicians can use cleansing metamagic to remove traces from objects, making them useless to a psychometric examination. Even techniques for erasing astral signatures can make psychometry on those objects more difficult or impossible. In cases where you expect to find psychometric impressions and none are forthcoming, consider examining other objects in the area. As any forensics specialist is aware, it is very difficult to eliminate all evidence from a crime scene.

SIGNS OF THE TIMES

- Just to show some of you that sometimes there's a life outside of studying or shadowrunning, I've got an article to show you, it's from Halo and talks about dueling as a fashionable (and in some places, illegal) new sport, as well as a tool for dispute set-



ment. If that wasn't enough, then you might be pleased to know we've gotten a new metamagic technique called absorption out of the deal as well. Following that, I've got the low-down on a new trick that's been developed out of the most they call the Yucatán. In order to deal with the ravaged megasphere, some magicians have developed a technique to tear out the bad mojo.

• Silicon Mage

DUELS ARCANÉ

by Halo

I have to admit that the first time I heard about dueling, puffy shirts and swaggering swordsmen immediately came to mind. While the image was entertaining for a while, it didn't exactly thrill me and make me want to run right out and try it myself. Add to that the magic side of it, and I was also a little confused. What did a dodgy simflick or three have to do with magic? Then a friend, an avid duelist and friend to the occasional member of the upper echelons, clued me in.

Magic duels, or "duels arcane" as so-called higher society likes to call them, are based in part upon the seventeenth century sword duels banned in France during the reign of Louis XIII. As guns (well, muskets) slowly but steadily replaced the sword as the premier martial weapon for the soldiery, only the poor or very rich held onto their short swords, sabers and rapiers. Proponents of the sword held that guns were the province of the coward, who had only to propel without skill a bit of metal at his enemy from a distance to kill him. Swordsmanship was lent the qualities of nobility, honor, courage and skill. The aristocracy participated in dueling more often than the poor because of these notions. The poor would duel more out of desperation or need, such as holding onto some bit of property or avenging a female relative's damaged "honor."

• Damaged honor? Is that supposed to mean what I think it does?

• George

• If you mean "taken against her will" and possibly ruined for life, then yes.

• Labrys

• Halo has left out dueling for the sheer thrill and challenge. There's nothing like the sound of steel ringing in the pre-dawn air within a stone's throw of the Tuilleries.

• The Laughing Man

"Ha! Fragglin' Ha!"

So flash forward to our post-Awakening, post-comet times, and you more or less have the same thing going on. There are differences, in that magic isn't going to be outmoded any time soon and our aristocracy has titles like "CEO" or "Vice President" instead of Marquis or Duke, but the situation is essentially identical. The Ivory tower dwellers who practice magic now look to dueling as a fine tradition to uphold. One

organization which seems to favor dueling the most is the Illuminates of the New Dawn.

• Dr. Rozlyn Hernandez in a puffy shirt is a scary picture. Halo. Thanks. I think I'll listen to the soothing sounds of handrazors scraping a stainless steel sink now.

• Magister

• IOND? I always thought that "New! New! New!" was their mating call, not "Tradition." What gives?

• Whisper

• The plain truth is that their overblown egos are in love with dueling. It lets them show pretty definitively who can put the squeeze on who within their organization, a little like a pack of wolves sorting out who is alpha, who is beta and who is the runt of the pack. They just like to wrap it up all pretty in tradition and top it off with the shiny but trite claim that you can't build a New World Order without giving a nod to the Old Guard.

• Miss Tick

• It's not just the IOND, though; a lot of other magical orders, especially in some university circles, are all said to have their share of duellists. Supposedly they even have super-secret competitions between each other, with the winners getting whatever new magical prize they're squabbling over at a given time.

• Conspir-I-See

The Illuminates have even formally outlined the conditions for a duel. Condensed and paraphrased, they are:

1. The challenged dictates the terms of battle, which a challenger must accept. This includes the size of the area to be warded for the duel, limitations on spellcasting or foci use, the day and time of the appointed duel, whether spectators will be allowed or not and the winning conditions. Win conditions to choose from are: to unconsciousness, to incapacitation, first blood, whoever first scores a hit (which could be as mild as a sudden headache or as severe as a fatal wound), a certain number of hits and so on.

• They don't advertise it since it's illegal, but "to the death" is also an option.

• Thanatos

2. The area to be set aside for dueling must be warded in such a way as to prevent attacks from spilling over to spectators, as well as prevent outside magical interference.

3. Both challenger and challenged must agree upon a third party to mediate or judge the duel. The judge inspects the ward(s), assures that challenged and challenger have agreed to the terms set and are properly prepared for the duel, is the final arbiter as to when a duel must end and ensures that either contact information for next-of-kin or medical personnel and equipment are available afterward.



4. Challenged and challenger shall each have a minimum of one, but not more than two, seconds. The second will be the proxy for the challenged or challenger, as appropriate, should something happen to him or her. The second also acts as another witness to the duel and frequently is custodian for the challenged or challenger's equipment or possessions for the duration of the duel.

5. Only the challenger and the challenged fight in the duel. At any point if a third party joins in or an additional fight breaks out between seconds, the duel is halted immediately.

6. Each party must salute before beginning the duel and at the end of it, if capable. Should the duel be set up to resolve a dispute, each party must accept the outcome and pay the appropriate penalties, if any.

• And you better believe that they take it all very seriously. I've duelled against one of these fraggers and he was very peeved to know that I wasn't aware of some of the rules they use. The way he carried on, I was born in a sewer and had all the manners and intelligence of a hungry plasma. He calmed down quickly enough when my first volley slammed him. It was gently explained to him afterward that not everyone uses the same rules and he'd be happier remembering that next time.

• Flynn

• Something that hasn't been mentioned yet but should be is that there are actually two kinds of duels. One is the type that the magical orders love more, called supremacy duels (which others call "scorching" because it can burn out your magic). The other type, which is more commonly seen, is sorcerous duels where spells are tossed back and forth. While you'd never want to accidentally get involved in one or the other, at least you could walk away from a sorcerous duel with your magical ability more or less intact.

• Raven

Duels on the street are entirely different. They don't tend to have many rules or safety conventions. Not a lot of gangs have mages in their ranks, but the few that do, especially wizzer gangs, love to use dueling as part of resolving their turf wars. They turn it into an impromptu spectator event, even charging admission when they need a fundraiser. These events tend to have a little more structure to them and so they're a little less likely to spill over into the general public, though spectators have sometimes suffered backlash when the spells fly fast and thick. The free-for-all duels in the middle of the street, however, are what have alerted law enforcement agencies and led to mage duels being banned in some places, particularly Seattle, San Francisco, Los Angeles, New York and Boston.



• This hasn't stopped establishments from profiting, though. There is a network of underground mage duel "arenas," some of which operate even where dueling is still legal, like Las Vegas. Much like underground blood sports, which have a circuit of back rooms and other hidden fighting pits, some duellists become big names on the circuit. Organizations like the Mafia and the Yakuza organize the fights and book the bets. You have to be very good to remain on the circuit, though, because it's very easy for a magician to permanently burn out his magic with constant dueling.

• Hammer

Absorption

Perhaps not surprisingly, a new metamagical technique arose from all this. Unlike a majority of the metamagics, absorption allows you to go a little more on the offensive than the defensive. As it was explained to me, absorption is similar to shielding or reflecting in the way part of it works. Where your defenses would normally either allow a spell cast at you to flow harmlessly away or send it back to its caster, absorption turns your defenses into a funnel or a sieve. This lets you soak up the mana powering the spell without being affected by it, and then you can turn around and use that along with your natural juju to really pile-drive your opponent.

• Oh wow, so this is what I saw. I was watching one of those duels to the death in Vegas, and Jorge Alonzo Rodríguez had done a little song and dance right before he tossed a killer lightning bolt at Padraig MacInnis. I thought that fruity elf was going to fry for sure, but he just stood there and took it without a mark on him. He was sweating a great deal but he grinned as if he was at a kiddie amusement park right before he launched the biggest hoopfragging fireball I've ever seen in my life right back. Good thing the arena was warded because the folks in the crowd would have gotten charred to ash just like Jorge. There weren't even any bone fragments left.

• Dorian

• Interesting. If you look at this from a mythological point of view, this is a modern application of stealing power. For example, Biblical legend has it that Delilah stole Samson's strength by cutting his hair for the promise of money. In Greek myth, the Titan Prometheus stole fire from the gods to give to humanity; fire being a symbol of power, of course. And the ancient Egyptians believed that stealing one's shadow, or *khalbit*, steals one's magical power and/or life.

• Bullfinch

• And hey look! In each instance, bad things happened as a result. I certainly wouldn't call being chained to a rock and having your liver torn out every day a good thing. Coincidence? I think not.

• Jung

• I don't know if I'd call absorbing a spell that's meant to fry you "stealing." After all, if someone wants to fling spells at you, then you have every right to take advantage of the mojo channeled your way.

• Firelight

FILTERING

• I've heard some people accuse magicians of being unable to cope with the modern times, but this new technique proves the opposite. Faced with a curveball that the Awakened world threw at us, some magicians figured out a way to negate the side effects. I know this may set some of you on your ears, but you can thank Saeder-Krupp and Mitsuhamma for developing this handy technique. Instead of me doing all the explaining, though, I'm going to give Fauna, who works with the Astral Space Preservation Society, a chance to speak.

• Silicon Mage

by Fauna

Pollution in any form disturbs me. As a mage with some experience under her belt, pollution of astral space is not only disturbing but alarming. This is why I joined the Astral Space Preservation Society that Dunkelzahn created in his will. Many places in the Western Hemisphere—not to mention the rest of the world—have become dangerously contaminated, and the threat continues to grow with very little abatement despite significant effort. In Chicago's former Containment Zone, clouds of Strain III Beta are still a wandering menace thanks to the steady upkeep of its background count. The Tsimshian nation is facing massive industrial pollution from mining, logging and chemical harvesting and refinement, which in turn has poisoned the astral and drawn more shamans to the toxic path. In the Yucatán, Aztlán and the rebel groups have wrought such havoc on the land in their war that the spirit of the land itself has rebelled. This doesn't even include the phenomena at Crater Lake in Tir Tairngire, the astral rift in DeeCee, Los Alamos and Trinity in the Pueblo ... the list goes on.

Even attempting to cast a spell in the midst of such a garbage zone can be difficult, if not downright lethal. People visiting these areas can avoid doing anything magical in nature if need be, but the residents don't have this luxury—especially if it helps in surviving another day. Recognizing this, Mitsuhamma's Pentacle subsidiary cooperated with The Arcanum, a magical research company from Saeder-Krupp, and the ASPS in finding a way to filter out the worst effects. We believe we have been successful in the creation of a filtering metamagical technique.

• That was less cooperation than capitulation. Pentacle, conducting research on this for the problems in the Tsimshian nation, was knee-deep in it because someone turned up evidence that they stole some of The Arcanum's work. Before a big



fuss could be raised, everyone sat down and hashed out a plan whereby everyone could benefit.

- Pistons
- But where do the ASPS enter this? I don't imagine they just strolled into the room and said, "I say chaps, be kind and let us have a nip."
- Bung
- Well, no. The Arcanum grandfathered them in since it used some of the Society's people and facilities instead of theirs in exchange for the data they came up with. When the Pentacle deal came to the table, the ASPS sat in and raised their voices. It's a three-way top billing on the playbill. The only problem now is that the ASPS wants to take the results public, and both MCT and S-K are trying to put the kibosh on that so they can make money off of it. Thus this little article here. <display_grln>
- Silicon Mage

We conducted some cautious field trials in the old Containment Zone in Chicago first, under the guise of researching the long-term effects of Strain III Beta on a magical populace. We had to resort to this subterfuge because we all agreed that simply telling people might get their hopes up for something which may not work. Luckily it did, so we are conducting more trials in other areas riddled with astral pollution to be completely assured.

With this caveat in mind, I'd like to explain how the technique works in plain language. If you've ever had real orange juice from an orange, then you know that it often gets stray bits of pulp in it. If you're trying to drink the orange juice through a straw, then you know how difficult it is to get any orange juice through without the pulp clogging it up. You could simply not drink the juice, but most magicians will tell you that this is not an option. Magicians also can't throw the metaphorical straw away and drink it straight—at least, not yet—so that is not an option either. Filtering is like putting a catch guard on the mouth of your cup or a mesh at the end of your straw; the pulp, or the background count, is still there but you can drink more orange juice (mana) now. We could also apply this to other facets of our lives. We can filter our water, coffee, radio signals, mail and trideo, so why not magic?

- You know, that makes too much sense. She can't be a college graduate. So what's the drawback?
- Murphy
- Well it doesn't sound too easy, for one. Your filter itself may also get clogged, to borrow Fauna's metaphor, meaning you'd have to clean it out periodically before you can reuse it. This could happen even quicker in places nearly as bad as the mana warp of space. You'd probably get better or more efficient at it as you learned more, though.
- Digtails

• This makes me wonder. The big reason why there aren't many mages or shamans up in space is because it is warped to such an ungodly degree. Think it's possible that if MCT and S-K hadn't come up with this, Ares might?

- Stella Luna
- Maybe not, but would they take advantage? I think you can answer that.
- Nightfire
- Didn't Wuxing already have something like this in place?
- Gruß

• No, but I can see where you could get confused about it. Wuxing's geomancers can supposedly perform other interesting feats of magic that not many can understand, but they hadn't come up with a way to filter out negative energies. Come to think of it, I'm not entirely sure just what they can do and no one's been too forthcoming. Think they could cleanse a permanent, negative background count?

- Silicon Mage

• Well, it has been hinted that skilled feng shui masters can, but when taken into account with the previous material, I honestly don't know if that is true or not. I'm not a magician, but I am curious. I would be interested in hearing more.

- Snow Tiger

• Okay, from some posts in the past I know that feng shui is supposed to mean "wind and water," but that's about it. I'd like to hear a lot more if anyone can spare the cycles.

- Wiz Kid

• Fair enough. I'm more than curious myself as well, and I'd like to see a modern insight into its uses, what, how and why. Let me see what I can pull up.

- Silicon Mage

GEOMANCY

by Xiao Renwu

• That name translates into "nobody." The context here is that he or she considers himself to be small and beneath notice, and so is truly humble. I wonder who it is.

- Snow Tiger

Geomancy—the way I have studied it—is the art of *feng shui*. I know that there are others who are also familiar with the flow of *chi*, but I am not familiar with their ways so please pardon me. Perhaps those who follow these other traditions will annotate my words here and help provide another viewpoint.

Feng shui, to put a complex and ancient practice into simple terms, is about living in harmony with nature and your surrounding environment rather than against it. This includes many factors, such as astrology (concerning the date and

time a person is born, a building planned and erected, or when an endeavor is begun), how the land or a building is shaped, the direction in which buildings are placed and so on. What unites all of this, I call Tao. You may have seen elements of Tao in martial arts (like tai chi), acupuncture, divination (like I Ching), meditation and more. The energies of *yang* (light, maleness, the sun, creation and warmth) and *yin* (dark, femaleness, the moon, completion and cold) come from the Tao and flow through all, further influencing the five elements, or wuxing.

- For those who weren't aware of the connection before, this is where the Chinese megacorp Wuxing gets their name. No wonder they've been heavy on the hoodoo.

- Ang

- Feng shui practitioners are also called wujun, just to clarify things. Feng shui is simply more concerned with geomantic magic, using the power of the dragon lines, than other aspects of wujun practices.

- China Doll

- This reminds me of the druids over in England and the Aborigines down in Australia. Does this mean anyone who lives "in harmony with nature" can manipulate manalines? If so, the thought of a bunch of scruffy shamans having that much potential power at their fingertips scares me silly.

- Bung

Harmony and balance may be found in the interplay of the yin and yang. Do not confuse yin and yang with "good" and "evil"—each type of chi is necessary. Within one lies the seed of the other, and so the yin and yang flow in cycles, as well as the elements. When the flow is positive, or productive, the cycle goes like so: water nourishes wood, wood produces fire, the ashes produce earth, and condensed earth gives metal. If you have had a period in your life when everything seemed to click and go well (love, prosperity, luck, good family life), then that would be a tangible result of a positive cycle. When the flow is negative, or destructive, the cycle goes like so: water puts out fire, fire melts metal, metal destroys wood, wood pierces earth, and earth absorbs water. The elements do not merely represent themselves, but symbolize aspects of life and society as well. The destructive cycle has dominated many recent events like the despoiling of the Yucatán, and it is mostly for that reason I am sharing this information today.

- That would explain the proliferation of toxic shamans lately. They're locked onto this "destructive cycle," to use our narrator's term. I wonder if any of them are aware of this information. Heck, I wonder if this means that they could be rehabilitated, so to speak.

- Wiz Kid

- I suspect the possibility exists, but I wouldn't count on it. Some individuals and groups like Winternight are too fragged in the

head or too stubborn to ever change.

- Digitalls

- Maybe this is also why the area around the Aztec teocalli in Denver was so messed up. If so, then Wuxing's attempts to clean it up would probably mean trying to put things back in balance. When Ghostwalker destroyed it ... well, that was fire at work, right? And fire melts metal, which destroys wood, and so on, just like this person said. So Wuxing might build things like fountains for water and gardens for earth and wood. They're like mystical architects.

- Libra

- Yeah, but these things take time. I wouldn't expect any instant miracles.

- Skeptic

DIVINATION

Geomancers are also greatly concerned with the technique of divination. We do not use it so much for revelations of the future, but mostly to clarify and understand the present. Chinese astrology, the I Ching and dowsing are our divination tools. Dowsing utilizes the *luo pan*, or a traditional compass that is circular, wooden and set into a square board. A regular compass can be used as well. With it, you can find water, buried and forgotten power cables, natural materials like metal, lost items, and most importantly, the dragon lines.

- Speaking as someone with another viewpoint, dowsing also uses items like pendulums and various kinds of rods. The idea is that whatever you choose to use, it should help you detect electromagnetic energy like what you would find in a manaline.

- Labrys

- Actually, what our geomancer is saying isn't about divination, but sensing. The Australian koradji use it to navigate and avoid the mana storms, but it would seem feng shui practitioners use it for something else.

- Dancer

- Actually, Dancer, it's both divination and sensing. The compass is for the latter, and astrology and I Ching are for the former. I once worked as a bodyguard for a Wuxing exec, and he consulted a feng shui master for a house he wanted to build. The master was a very old stoop-shouldered guy, and he hobbled around the site carrying a compass and muttering to himself. Finally he stopped in one spot, said "Right here!" and then proceeded to tell him what direction his front door should face, where he should put his bedroom, what shape to make the house, you name it. As he talked, an architect the exec had tagging along made some rough sketches of the whole thing. The master rattled off some dates as to when it would be good to start building—even I lost track of all the animals he mentioned, since Chinese astrology uses them to predict the character or personality of any given period of time. Then he squat-



ted down on the ground and started flipping coins. By the time we left there, I think the only question left was how much this fragger was going to pay for the services rendered.

• HK Kid

• Wait a tic. Find "natural materials like metal?" This is how Wuxing's geomancers knew where to find orichalcum deposits?

• Skeptic

• Well, I don't know how true this is, but apparently there's some Native American folklore that basically said you could find gold like this. The claim is that gold could be found at "vortices," which I'm taking to mean manaline nexuses. So it doesn't seem too far-fetched to me that Wuxing could find orichalcum. Let's just hope you can't find diamonds like that, or else companies like DeBeers-Omnitech will make more of a killing than they are now with the diamond-turned-orichalcum mines.

• Greenhorn

• You mean power sites, and unfortunately some megacorps have taken it into their heads to try grabbing some. They haven't been as successful as you'd think, fortunately, thanks to the fact that most of the major ones are under someone else's power or protection, like T'ai Shan and Callanish.

• Oakthorn

The compass can also determine if the flow of chi, also known as the dragon's breath, is good or bad. When it is good, the energy is active, running like a healthy stream or brook and circulating. When it is bad, the energy either stagnates or rushes out of control, like a brackish pond or a raging river, and moves in a straight line. In a natural environment, good chi can be found in places with rolling hills and bodies of water. Bad chi accumulates in flat areas, irregularly shaped plots of land or where the dragon's breath is blocked. The same principles apply to an indoor environment. For example, a straight path from the front door to the back door of a house or business can guarantee that many things—luck, wealth, happiness—will never stay. This can be changed with landscaping, building other structures, mirrors, plants and more that change the flow for good or ill. I have seen the fortunes of companies change in this way; creating or leveling hills, moving a pond from its back to its front, and in the widely-known case of Wuxing, turning all outside windows into mirrors.

• That last one is a reminder of the feng shui war Wuxing had not long after the Skytower was built. This sort of thing is actually more common now than most people really know. It used to be that people were content with just improving their own fortunes, but now more corps like Tan Tien, Eastern Tiger, and Shibata Construction and Engineering are taking a closer look at feng shui to find more ways to claw at their rivals.

• HK Kid



- Dragon's breath and geomancy walking hand in hand, Lung sitting in a big power site like Tai Shan, Wuxing in possession of the Jade Dragon of Wind and Fire, and Japan just suffered a big beating during Halley's Comet! Don't you see? The fight between Lung and Ryumyo is almost over, and Lung is winning! Soon Lung, who is using Wuxing (come on, Wu Lung Wei?) to grab all the orichalcum, will make his move and take over the world!
- Dragonslayer

- Intelligent as usual, I see. Still, the part about the Jade Dragon of Wind and Fire reminded me of something. Wuxing has been sitting on a power site which has only grown more powerful thanks to the comet. They have imprinted it, even, much like many older megalithic sites like Stonehenge, which itself was built according to astrology and sacred geometry and in harmony with the land. The druids built Stonehenge, and feng shui has had a heavy hand with the Wuxing Skytower. Stonehenge was and has been used in ritual, religious observances, but for what greater purpose was the Skytower built? The easy answer is "money" and increasing Wuxing's power, but there has to be a deeper reason than that.
- Raven

- Was Stonehenge imprinted by the druids, or did the extant power site imprint the druids? What I mean to say is that this is an argument which has constantly made the rounds in many academic circles. Some say the druids felt the potential power there and built Stonehenge atop it to focus the power, and some say the druids built it first, and then the power came, attracted to the energy they raised. With more power sites appearing randomly, as well as temporarily due to highly emotionally charged religious ceremonies, for all anyone knows it could be both.
- Prof. Wheel

- From what I'm given to understand, then, imprinting a power site sort of gives you control over it, right? At least for a while, which also explains the fight between Tsimshian and the Salish. Not only is it getting polluted, but the Salish don't have control over it—for now, though I suspect that's going to change if they can help it.
- Tango

- Tango, you are making a scary amount of sense. The Aztlan teocallis, the site of the Great Ghost Dance, Uluru, toxic mana sites ... I hope you realize I'm going to have nightmares now.
- Miss Tick

- Geomancy has never been a comfortable subject, my dear, though it is one that I hope certain people in certain countries are learning for the good. Like attracts like, after all.
- Wordsmyth

SYMBOLIC LINKS TABLE

Material	Modifier
Favored Object	+2
Often-Handled Object	+3
Recently Handled Object	+4
Symbolic Representation	+6
Symbolic Representation:	
Not created by user	-2
Only 2 successes achieved on Skill Test	+2
Only 1 success achieved on Skill Test	+4
Symbolic Link Focus	-Force

GAME INFORMATION

Some say that there's nothing new under the sun, that everything's been done. And then there are some who say that anything is possible if you only believe. It would seem that these are diametrically opposed points of view, but they aren't. Simply stated, take what's available and put a new spin on it, shining a light on new possibilities. The opening essay from Silicon Mage serves to illustrate this in a way that should help the gamemaster in creating his or her own new metamagical techniques and give some depth to gameplay. They are not hard and fast rules, simply guidelines for flavor.

This section provides new advanced magical rules. In addition to *SR3*, gamemaster will find *Magic in the Shadows (MITS)* especially useful for applying the new rules in this section. This chapter also introduces several new metamagic abilities available only to initiates (see *Initiation and Metamagic*, p. 57, *MITS*).

SYMPATHETIC MAGIC

Sympathetic magic is a general type or "flavor" of magic that can and has been used in various pre- and post-Awakening magical traditions. For characters who prefer the more subtle side of magic, the various forms and methods of sympathetic magic can be a boon. Gamemasters may also find them useful in situations that call for trickery. Investigations (kidnapping, theft, tracking a killer) or outwitting devious opponents on the part of player characters.

Symbolic Linking Metamagic

An initiate who learns this metamagic has the option of using *symbolic links* rather than material links when it comes to the Linking Test (p. 36-37, *MITS*) for ritual sorcery. Only initiates capable of wielding Sorcery can learn this metamagic technique.

When the location of the target cannot be seen, either physically or with astral perception, and there are no material links available for use, a symbolic representation of the target or an item handled by the target can be used instead. The more closely the object is tied to the target, the better it will work. Symbolic links are not quite as effective as material links, how-



ever, and so even a beloved childhood toy will not work as well as having a lock of the target's hair.

Consult the Symbolic Links Table (p. 47) for the appropriate modifier to use in conjunction with the Linking Test Table (p. 37, *MITTS*).

Symbolic Links Table Key

Favored Objects denote items—clothing, jewelry, toys, mementos—which the target frequently wears or carries on his person and have significant emotional value to him. A dead lover's locket, a scrap of a childhood security blanket tucked into a pocket and similar objects fit into this category.

Often-Handled Objects include frequently worn clothing (a lucky shirt, a daily-worn company uniform), a familiar weapon (a trusty Predator, a katana used since training days), a favorite pen and other such objects. These items tend not to have as deep an emotional attachment to the target as a Favored Object, but are used often and have been in his or her possession for some time.

Recently Handled Objects have the least amount of attachment to a target. A coffee cup used at breakfast, a telephone receiver, an office toy or a fast-food wrapper—items which have been in the target's possession for a minimum of five minutes—all fit under this category. These objects have limited effectiveness, however; they can only be used for a number of minutes equal to twice the target's Essence. If the ritual begins before this amount of time runs out, the link remains effective for the duration of the ritual, after which the link is gone. If the ritual is interrupted, the link is similarly lost. Also, the object in question may not be a Favored or Often-Handled Object for someone other than the target; not only will the Linking Test fail for the intended target, but the gamemaster may decide that the ritual group inadvertently succeeds in targeting someone else!

Symbolic Representations are drawings, sculptures, dolls and other media that resemble the target. The character creating the representation must make a Success Test with an appropriate skill (Sketching, Painting, etc.) against a target number of 4 using the modifiers from the Representation Modifiers Table. The character must achieve at least 3 successes for the symbolic representation to be adequate as a symbolic link. If the character achieved only 2 successes, apply a +2 Linking Test modifier; if the character achieved 1 success, apply a +4 modifier; if 0 successes were achieved, the representation is unusable (which the character will not know until the Linking Test fails).

It is not necessary for the magician using the representation in ritual magic to be the representation's creator, although a +2 modifier is applied to the Linking Test in such a case.

Symbolic Link Foci

To make a more potent representation, such as the voodoo dolls used by some *houngans*, a character may enchant the representation into a symbolic link focus. To do this, the character must craft the representation as above and then use Enchanting (Artificing) skill to create a focus from it (see *Artificing*, p. 42, *MITTS*). The focus formula for a symbolic link focus has a base time of 10 days. The Enchanting target number for symbolic link foci is 4, and the representation counts as handmade *telesma* (–1 Enchanting Test modifier).

The Force of a symbolic link focus is used as modifier to the Linking Test. No symbolic link can ever have a Force higher than 6, nor can the Force exceed the number of successes achieved on the artistic Skill Test to create the symbolic representation.

Severing Metamagic

Severing is a form of metamagic that can be learned by any initiate capable of astral perception.

Despite his best intentions, a character can become the target of ritual sorcery or ritual tracking. Usually, the best way to defend against attacks from such is to hide in a warded area or under another type of astral barrier; this can,

however, severely hamper a character's mobility while the threat exists. The severing metamagical technique is an active defense against ritual sorcery, allowing an initiate to break the connection between him and the ritual team. Severing can only be used after the ritual team has successfully completed the Targeting and begun the Sending stage. The initiate can only sever the link if he knows it exists (in other words, he noticed the Sending, or someone else has alerted him). Severing metamagic only works in cases where a ritual link rather than a spotter is used.

When the ritual link is established, the gamemaster must keep track of how many successes the ritual team achieves on the Linking Test. The initiate attempting to sever the ritual link makes a Severing Test, rolling his Magic rating versus the ritual leader's Magic rating +1 for every additional magician participating in the ritual sorcery. If the severing initiate does not know the specific nature of the material or symbolic link used against him, he suffers an additional +2 modifier. If the severing initiate rolls more successes on the Severing Test than the ritual team achieved on the Linking Test, the ritual link is broken. The ritual ends immediately and the ritual team must make an immediate Drain Resistance Test. The material or symbolic link they were using cannot be used for the same purpose until another (severing initiate grade) hours have passed. If the severing initiate rolls equal or less successes on the Severing Test, the ritual continues unhindered.

REPRESENTATION MODIFIERS TABLE

Condition	Modifier
Creator is familiar with the target	+0
Creator has met the target	+2
Creator has only seen the target	+4
Creator last saw target more than 1 month ago	+6
Creator has assented the target	–2
Target is in view during the creator's efforts	–1



SEVERING TEST MODIFIERS TABLE

Condition	Modifier
Per magician in the ritual group other than the ritual leader	+1
Initiate does not know the nature of the ritual link	+2
Initiate is severing for someone or something other than self	+2

Severing takes time equal to $(10 - \text{initiate grade}) \times 10$ minutes, with every grade level including and above 10 reducing the time by 1 minute further. The amount of time may not be reduced to less than 1 minute. Thus a Grade 3 initiate would need to spend 70 minutes to successfully sever the link between himself and a ritual link, while a grade 11 initiate would need only 8 minutes. If the initiate does not spend the full amount of time, the link is not severed. Also, should the sending (or the tracking) complete before the initiate is able to complete the severing, the sending wins through.

An initiate can also use severing metamagic to break ritual links established on objects and people other than himself, though he suffers a +2 target number modifier to the Severing Test. The severing initiate must be able to astrally perceive the target during the full time it takes to sever the link. If the initiate stops perceiving astrally during the time it takes to sever the target from the ritual link, the severing fails.

It is important to note that when severing a ritual link that was established by using a focus as the material link, the bond to the focus itself is not broken. Rather, the ability to use the focus as a ritual link is temporarily negated for (severing initiate grade) hours—and the focus is also temporarily useless to the bonder for the same amount of time. If the ritual team chooses, they may try to use it as a ritual link again in another ritual after that time has passed; the focus is not consumed or “used up.” Characters will not have to re-bond with foci in this circumstance.

This metamagic can be used versus a ritual link more than once, and more than one person can attempt the severing also. In both cases, however, each Severing Test is treated separately; the successes are not cumulative. Count only the highest number of successes.

Ritual Magic In Reverse

Magicians are familiar with the concept of using a material link to target someone with ritual sorcery, but in reality the mystic link between the material link and whatever it came from can be exploited from both directions. There are many ways in which initiated and non-initiated magicians can put this to use.

Ritual magic in reverse is an expansion upon existing rules for ritual magic. Using a person (even himself) as a material link in ritual sorcery, a magician can attempt to create a ritual link to any tissue samples, locks of hair or other “parts” of that person (anything that could be used as a material link against that person, in other words). Likewise, a magician can use a whole object as a material link to any components that were once an integral part of that object. A magician can also

use this same process to conduct ritual tracking “in reverse.”

Only components that are still viable as material links can be targeted with this reverse ritual magic. It is more difficult to mystically track down a component of a larger thing than the reverse, so the magician or ritual team suffers a +2 target number modifier to the Linking Test. Additionally, the specific material link item that is being targeted must be

known to the magician/ritual team; it is impossible to target a potential material link item without knowing what it is.

An initiate who knows symbolic linking metamagic can perform reverse ritual magic against symbolic links, though the same +2 Linking Test modifier applies as do the modifiers from the Symbolic Links Table (p. 47).

Psychometry Metamagic

Psychometry is a magical technique that can be learned by any initiate who possesses the ability to astrally perceive.

Psychometry represents the character's ability to read psychic impressions left behind on an object, place or even a person. Psychometry is much stronger than astral perception, allowing the initiate to extract deeper impressions, feelings and even sensory input. The more recent the impressions, the greater the likelihood that the initiate will gain useful insight.

To use psychometry, the initiate must come into contact with the subject (whether an item, person or place) and open his mind to its energies. The initiate must also assense the subject and examine the astral patterns around it.

The gamemaster rolls a number of dice equal to the initiate's Aura Reading skill against a target number based on the length of time that has passed since impressions were left (see the Psychometry Table, p. 50). If the initiate scores any successes, he gains information from the psychic impressions left behind on the subject as shown on the Psychometry Table. The gamemaster should tailor the information to be as specific, vague or dramatic as suits the story. The gamemaster also determines what form the psychic feedback takes (visual, auditory, emotional, somatic, etc.). A roll of all ones results in vividly presented but completely false information.

Note that a subject may have more than one set of impressions imprinted upon it (for example, a church where daily ceremonies occur and also where a murder occurred a week ago). In this case, compare the results of the Aura Reading roll to the individual target numbers for each separate impression. The initiate may gain information on more than one impression at the same time.

The base time it takes an initiate to pick up a psychic impression is equal to the impression's base target number (or the highest target number in the case of multiple impression) minus the initiate's grade in minutes. At the gamemaster's discretion, certain episodes of psychometric feedback and visions may take longer for the initiate to experience. For the duration of this period, maintaining the psychometry is considered an Exclusive Complex Action, and the initiate suffers a +4 modifier

PSYCHOMETRY TABLE

Psychometry Target Number

Time Since Impressions Formed:

Less than 1 day
Less than 1 month
Less than 1 year
1 year or more
10 years or more
Each additional 10 years

Base Target Number

6
8
10
12
14
+2

Target Number Modifiers:

Subject is a place
Subject is a metal object (ring, watch, pendant, etc.)
Subject is a bonded focus
Subject has a strong connection to others depicted in the impression (wedding ring, beloved toy, etc.)
Initiate has a strong connection to others depicted in the impression (friend, relative, childhood home, etc.)
Impression of violence or strong emotions
Impression of violent death
Chaotic or noisy surroundings (difficult to concentrate)
Subject carries more than one significant impression
Astral signature(s) relating to impression has been erased
Cleansing metamagic has been used to remove impressions
Each subsequent attempt after the first to read the same object

Modifier

+1
+1
-(Force rating)*
-2
-2
-2
-3
+1
+1 for each
+1
+6
+2

* Modifier only applies to impressions related to the person whom the focus is bonded to. Stacked foci give only the highest rating as a bonus to Psychometry.

Successes

0
1
2
3
4+

Results

No information received
Brief flashes of insight, disjointed impressions, very superficial results
Longer sequences and deeper insights, though visions are still disjointed
Greater detail, multiple sensory types, clearer vision, more coherence
Lengthy sequences, multiple senses, coherent visions, significant information

to Perception Tests. If an initiate is in the middle of a psychometric experience and wants to break it off to perform some other action, a Willpower (6) Test is required.

If the initiate successfully picked up any impressions, he must then roll his Willpower against a target number of 12 minus the modified target number used for the Aura Reading Test. If the initiate rolls no successes, he experiences psychic backlash equivalent to a Light Stun wound. The gamemaster determines the form this backlash takes (nausea, headache, emotional distress, etc.) A roll of all ones on this test causes a temporary pho-

bia against performing psychometry—treat this as a mental Flaw that requires a Willpower (6) Test to allow the initiate to use the technique again. The Flaw persists for 10 days minus the initiate's Willpower. At the gamemaster's discretion, particularly potent impressions may cause more severe backlash. For example, the gamemaster could rule that the impression from a ritualized torture and murder session inflicts Serious Stun damage on the initiate who relives the horrifying experience.

Cleansing metamagic (p. 74, *MITS*) and astral signature erasure (p. 172, *SR3*) can significantly increase the difficulty of reading psychometric impressions, as noted on the Psychometry Table.

An initiate can attempt psychometry on a given subject multiple times; however, each subsequent attempt imposes a +2 target number penalty to the attempt. The initiate must also wait a number of hours equal to 10 minus his initiate grade before making another attempt.

Dorian is attempting to gain information about a kidnapped child by using psychometry metamagic on one of the child's shoes, which was dropped during the kidnapping. The

gamemaster rolls her Aura Reading 5 skill and gets 2, 3, 3, 7 and 12. The gamemaster determines that the base target number of the impression of the kidnapping incident is 8 (the kidnapping occurred less than a month ago) and that it is modified by -2 (impression of violence), for a final Target Number 6. With her two successes, Dorian picks up a series of quick disjointed visions: the child being grabbed by two large dark-haired men, the letters C and K, a flashing neon sign.

As the mage relays this information, the child's father stiffens—he has a business rival named Charlie Kellerman who owns a restaurant that might have a neon sign.

SIGNS OF THE TIMES

Magician culture, like other cultures, has varied interests and subgroups with different agendas. While some are content to live their lives unconcerned with anything but what they see day to day, others are reaching for more. Whether in the streets, corporate boardrooms or some elite magic society's warded rooms, magicians employ duels arcane to resolve power struggles, test their strength or teach lessons. Other magicians are more concerned about the ecology of the astral and its impact upon hermetics, shamans and others. New metamagics have arisen from these as a result.

Magic Duels

Dueling, in both a historical and fictional perspective, is an idea that has refused to fade away, even in the world of *Shadowrun*. Its association with antiquarian, gentlemanly ideals contrasts sharply with *Shadowrun* and its near-futuristic atmosphere, providing the basis for magic dueling's allure. Replacing fencing foils, rapiers and sabers with spells and foci, skill and cunning remain the focus of this potentially deadly sport. Whether wizard gangers vying for supremacy over their gang, a fight to "test blood" to satisfy a corporate mage's quest for legitimacy from a colleague or a mage teaching a student a lesson, dueling is an underground phenomenon slowly gaining popularity among magicians across the power spectrum.

In general, magic duels involve two magicians who are pitting their power against each other. They may or may not put certain conditions on the duel such as the ones mentioned in the fiction, depending on the type of duel, the situation at hand, and so forth. There are two types of duels: supremacy duels and sorcerous duels.

Supremacy Duels

A supremacy duel (also known as "scorching") works much the same as a banishing contest (p. 189, SR3), except that the contest is against a magician instead of a spirit. This is the most direct way of proving one's power against another mage or shaman, as a magician can potentially permanently burn out his own or his opponent's magic ability in the process, which is what the slang term "scorching" refers to.

This type of duel consists of a Success Contest, where each participant rolls his or her Sorcery skill with his or her opponent's Magic rating as the target number. Spell Pool may not be used, but power foci may be allowed (but only to increase the character's Magic rating, not providing extra dice) if both parties agree. Each net success reduces the opponent's Magic attribute by 1, until either the duel is called to an end (either by the winner or a third party appointed to referee) or the opponent's Magic is reduced to 0. If a character's Magic reaches 0, his aura is momentarily disrupted and he passes out, taking Deadly Stun damage, much like astral combat (p.176, SR3). He must afterward check for permanent Magic loss (p.160, SR3), but other-



wise his Magic rating will return or "refresh" at a rate of one point per hour. Supremacy dueling is an Exclusive Complex action between two magicians only.

Sorcerous Duels

Sorcerous duels are simpler affairs involving mainly spell-casting, though there are rumors that some magicians will also use spirits as well as or even instead of themselves, making it into little more than spirit cockfighting. These can happen at any time or place, even in the astral, and can involve more than two magicians. They may use any type of foci, metamagical techniques or any other magical ability available to the magicians in question. This is particularly where formalized rules enter play, usually to protect bystanders: a warded area for the duellists, a third party mediator, seconds to act as proxies or witnesses, and so on.

Absorption Metamagic

Absorption metamagic can be learned by any initiate capable of using the Sorcery skill.

The absorption metamagic technique allows an initiate to absorb spells cast at herself or even at other characters. Absorption is similar to shielding and reflecting metamagics (pp. 78-79, *MITS*) in that it uses spell defense (p. 183, *SR3*). But whereas reflecting redirects the spells back to their caster, or shielding simply prevents the spell from reaching or affecting the target, absorbing allows the initiate to take in the mana energy fueling the spell.

When using the absorbing technique, the defender allocates Sorcery and Spell Pool dice to absorbing with the same limitations as spell defense. When a character protected by absorption dice is targeted by a spell, the initiate can choose to use absorption dice against that spell. Each success from absorption dice on the Spell Resistance Test removes one of the attacker's successes normally and puts one die into a temporary Absorption Pool. If a spell is reduced to 0 successes, it fails to affect that target. Against area spells, absorption dice will only protect those characters who have absorption dice allocated to protect them. Other characters will be affected normally, even if the spell is absorbed (because only part of the spell's energies are absorbed). Area elemental manipulations are an exception; if any target of such a spell successfully absorbs it, the entire spell is absorbed (a stunning visual effect) and will not affect any others.

Absorption Pool dice can be used much like Spell Pool dice; for all intents and purposes, the pool acts as a second Spell Pool. This allows the character to use this pool in addition to her normal Sorcery and Spell Pool dice.

An initiate cannot have an Absorption Pool greater than twice her Magic rating. Absorbing raw mana is also a draining experience. At the end of any Combat Phase in which an initiate has absorbed a spell, that initiate must make a Drain Resistance Test with a Damage Code of M and a Power equal to the number of dice currently in her Absorption Pool. If the Power exceeds the initiate's Magic attribute, the Drain is Physical damage rather than Stun.

Maintaining an Absorption Pool is similar to sustaining a spell. The initiate suffers a +2 modifier and cannot perform

Exclusive actions. If the initiate takes damage, she must make a Sorcery Test against the number of dice in the Absorption Pool (plus any injury modifiers) to maintain concentration; if she fails, the pool dice are lost.

An initiate can only hold on to this absorbed energy for a number of Combat Turns equal to her initiate grade. After this time, the initiate automatically suffers one box of Stun damage (or Physical damage if the pool dice exceed her Magic rating) at the end of each Combat Turn during which she continues to maintain the pool. An initiate may release the absorbed dice at any time (or a portion of them) with a Free Action; these energies dissipate harmlessly into the ether.

Dre has allocated 6 absorption dice to protect his two teammates, Maga and Tony Two-Chins. Moments later, they are both targeted with a Force 4 Serious damage manaball, which achieves 1 success on Maga and 3 on Tony. Dre rolls the 3 absorption dice protecting Maga and gets 1, 4 and 5, so the 1 success against her is absorbed. He also rolls the 3 absorption dice protecting Tony and gets 1, 2 and 6, so only 1 success against him is absorbed. Dre has absorbed 2 dice into his Absorption Pool, and Maga is completely unaffected by the manaball. Tony, however, still faces Deadly damage.

Dre already has 4 dice in his Absorption Pool, so at the end of that Combat Phase he must resist 6M Stun (his Magic rating is 6) for absorbing more mana. His initiate grade is 1, and he has already been maintaining the pool for 1 Combat Turn, so Dre will take an automatic box of Stun damage at the end of the Combat Turn if he doesn't use that energy soon.

Filtering Metamagic

Filtering is a metamagical technique that can be learned by an initiate that knows cleansing metamagic (p. 74, *MITS*).

Cleansing metamagic can clear up temporary background count and allow a character to cast spells without that penalty, but as yet there is no way to clear up a permanent background count (pp. 83-86, *MITS*). This is where the filtering metamagic technique can help instead; filtering does not cleanse, but constructs a temporary "matrix" that allows the initiate to access "clean" mana despite mana static and warping. Much like panning for gold, filtering can sort through the dross that is the background count and get to the useful mana, reducing or negating all the penalties imposed. This metamagical technique can be used for both temporary and permanent background counts, and can even apply towards aspected power sites and mana warps (pp. 84-86, *MITS*).

To use the filtering metamagic, an initiate must attune herself to the area and create a "filter" for her magic; the initiate takes an exclusive Complex Action and makes a Magic Test against a target number equal to the background count. Every 2 successes temporarily reduce the effective background count against the initiate by 1. This will remain in effect for a number of Combat Turns equaling initiate grade x (10 - background count), after which the filter becomes "clogged" and the initiate must filter again in order to continue to benefit.



Note that filtering only temporarily reduces the effects of the background count for the initiate using these techniques; the background count remains at the same level, along with penalties, for everyone else in that area.

Zhan is trekking through an irradiated hellhole (a mana warp with a background count of 6) when he is attacked by a swarm of mutant critters. Wanting to use magic with as little obstruction as possible, he attunes himself to the area, rolling his Magic attribute of 9 against the Background Count 6, getting only 1 success. He blows Karma for a re-roll, gets lucky, and rolls 3 more successes. His 4 successes allow him to temporarily reduce the effective background count against him by 2 ($4 \div 2$), to a Background Count 4. This means he will only suffer a +4 modifier rather than +6, and he will not suffer the Magic reduction, increased Drain or astral damage normally associated with the mana warp. Zhan is a Grade 3 initiate, so this filter he has created for his magic will only last for 12 Combat Turns ($[10 - 6] \times 3$).

GEOMANCY

Though it has been at least fifty years since the Awakening, old lore and traditions previously thought of as "quaint," "crackpot" or simply forgotten surface more and more often. They bring with them their own unique perspectives, knowledge and arcane practices. Geomancy, though practiced for thousands of years, has been one of the most enigmatic of these, operating quietly and in plain sight but just under the radar in the post-Awakening magical community. References to it have been made now and then in the world of *Shadowrun*, and yet not many seem to know anything about it beyond its ties to the path of wuxing (p.17, *MITTS*) through *feng shui*. Whether this is a cover-up, deliberately keeping people from the truth, or simply a sin of omission, is something the gamemaster may decide for his or her game. At this point, no one really knows and not many are forthcoming since many geomancers work for corporations like Wuxing, who would not be pleased to see "company secrets" made public, or belong to secretive societies, like the Druids in England.

Geomancy deals with manalines (also called in some traditions song lines, ley lines or dragon lines), power sites and other fixtures of astral topography. More information on them can be found in *Magic in the Shadows* (pp. 84-85) and *Target: Awakened Lands* (pp. 99-100). Additionally, geomancers are particularly familiar with the sensing (p. 110, *T:AL*), cleansing and divination (p. 74, *MITTS*) metamagical techniques, among others.

Imprinting

As a general rule, any magical group that controls a manaline or power site for a period of at least one lunar month (28 days) can temporarily imprint their own aspect to the mana in that area. Some groups may wish to imprint a site for a lengthy period, perhaps permanently. Maintaining control over a site requires prolonged ritual and mundane use, which favors the group. In the context of geomancy, a druidic ritual group would

hold a monthly, highly charged meeting supplemented with the seasonal religious observances (the Equinoxes and the Solstices). Likewise, a toxic group might systematically pollute the surrounding environment, summon toxic spirits and cast spells such as Acid Stream or Toxic Wave in some bizarre rites.

As a general guideline, if a ritual group uses a manaline or power site on a regular basis for a minimum of eight, usually more, times a year, that site will remain aspected towards that group for at least one year. If a ritual group remains unopposed in their use of that site, over time (with a minimum of five years but usually more) the imprinting may become permanent. The cleansing metamagic technique may be used to combat this permanency, if the background count has not become permanent.

Dowsing (Intelligence)

Dowsing is a Knowledge skill that is sometimes used much as the prediction skill needed in the divination metamagic (p. 74, *MITTS*); in geomancy, however, it is a Complementary skill to the Sensing Test for the Sensing metamagic technique (p. 110, *T:AL*). See the rules for Complementary skills on p. 97, *SR3*.

Default: Intelligence

Specializations: Compass (western or Chinese *luo pan*), Pendulum, L-rod, Y-rod, Bobber

A geomancer may use any tool (listed above in the specializations), but some are specific to certain traditions, such as the *luo pan* for *feng shui*. Y-rods and L-rods are generally sticks, usually of wood but sometimes metal or wire, in a Y or L shape. Bobbers resemble something akin to fishing rods, made out of a flexible wood or metal rod with a weighted string affixed to the end. The geomancer walks over the ground he or she is dowsing with the chosen implement in either one or both hands, depending on the chosen tool, as he or she is using the sensing metamagic. The geomancer will typically have an individual system whereby the behavior of the tool is interpreted. The more skill the geomancer has in dowsing, the better he or she may interpret the nuances of his or her chosen dowsing implement's behavior.

Astrology (Intelligence)

The astrology skill has been covered in general in *Magic in the Shadows* (p. 74).

Default: Intelligence

Specializations: Chinese, Mayan, Native American, Vedic, Western

Geomancers make extensive use of the divination metamagic as well as sensing. Those who practice *feng shui*, however, use Chinese, or Oriental, astrology and not the western system. Where the western system is solar-based, the Chinese system is based on the lunar. The Chinese have 12 animals (Rat, Ox, Tiger, Rabbit, Dragon, Snake, Horse, Ram, Monkey, Rooster, Dog and Pig), and these color, or give personality, to a given year. The five elements and the qualities of yin or yang further define a given person's birth date (or date in which a new project is started or a building is begun or finished) to the month, day and hour. The Chinese New Year begins in late January or early February, and so someone born just prior to that is regarded as falling under the animal sign of the previous year.

SOLDERS OF FORTUNE



Whoever said, "The more things change, the more things stay the same," obviously hasn't been around the past few years. First the UCAS deploys troops to Seattle after the Renraku arcology lockdown. Then came Salto, the Pueblo annexing LA, and a three-way Mexican standoff in the Mojave. Then the Salish and Tsimshian decide to let personal feuds heat up into a border war. Now it seems like we're only one international incident away from a full-scale shooting war that could rage the entire Pacific coast from San Diego to Kitimat.

With this in mind, I thought it would be a good idea to update the earlier Fields of Fire download, since it was about seven years obsolete. I sent a request to our resident gun-for-hire, Matador, for the latest buzz in the merc world. I got a rude shock when a reply came months later from Picador, Matador's second-in-command. Turns out Matador finally bought it during a patrol of the Salish-Tsimshian border when a sniper put a bullet through Matador's head.

Still, Picador was gracious enough to fill in for her former boss. So keep the newbie hazing to a minimum and listen to what Picador has to say; otherwise you could end up like Matador.

• Captain Chaos

Transmitted: 05 January 2063 at 09:36:31 (PST)

Hola, comrades in the shadows. I am Picador, and I come at the request of Captain Chaos bringing news of the latest word in the circles of mercenaries and other soldiers of fortune. Some of you were perhaps expecting Matador, a regular visitor to your digital world, to be sharing this information with you.

I regret to inform you that Matador, Colonel Juan Samuel Pererya, my commanding officer, is no more.

On our most recent contract, we were performing border patrolling for the Salish along the Chillicotin River. We were about to halt for the night when several high-pitched whistles shattered the twilight's tranquility. Matador barked out orders for us to disperse, but that proved to be his undoing. I had just turned to look at him when the telltale crack of a sniper's rifle rang out above the din of the artillery barrage. Next thing I knew, blood sprayed over my face as a large-caliber round vaporized Matador's head. It is a sight that will haunt me for the rest of my life.



• Damn, Carmen, I'm sorry to hear that. I knew Sam long before you signed on with him. He was one of the few class acts in the league.

• Arctic White

• I'm sorry to hear about Matador, too. But I have to add that I don't think Matador was just a random casualty of war. It's nothing I can put in words—call it a gut feeling from more than 20 years of soldiering. But if I were you, Picador, I'd suggest watching your back; someone was gunning after Matador, and they may come after you next.

• Colonel Cobra

• Gracias for the warning, mi amigo. I have my suspicions. I'll get in touch with you later at the Outpost.

• Picador

Nevertheless, Shadowland must have meant something to him; ever since that upload he sent from Peru seven years ago he'd been a regular visitor here. On several occasions, information obtained here saved our hoops, but there were also times where some idiot shadowrunner tagalong nearly got all of us killed by his own stupidity. So in addition to a glimpse of what changes the world has wrought the merc world, I also offer a basic primer on our stock in trade. Pay attention, and maybe next time you'll save us all a lot of trouble.

GUNS FOR HIRE

To understand what it is to be a merc, first you have to understand that a merc is different from a shadowrunner. "How?" you may ask. After all, at first glance it seems we both perform similar functions: we both perform dirty work for hire. Sometimes we even resort to violence.

• Hah! And there we see the difference already. On a run, if you pull a gun, the job's hosed.

• Jaxon

• That's not always the case, you elitist bastard. Sometimes the only way you can succeed at a shadowrun is where you have to make noise.

• Wedge

• And if you're implying that mercs only make noise, Jaxon, well you obviously don't know a damn thing about merc work. When you're on a LRRP (long range recon patrol, for you civvies) fifty clicks inside enemy lines, noise is the last thing you want.

• Flak Jack

But what really sets mercs apart from shadowrunners is where we work. Both in the geographical and metaphorical sense. Those of you who run the shadows live and work in the Sprawl, in the confines of ordered society. True, many of you

live and work in the cracks of society, but it is the Sprawl that creates those cracks, raising the walls that cast the shadows in which you thrive.

But while the Sprawl is the runner's domain, mercs thrive in the Wilderness. The ordered society that frames your world does not exist out on the battlefield. Shadowrunners may live and die on legwork and meeting contacts, but mercenaries often go for days on end without seeing another soul. We learn to be self-sufficient, to live off the land and whatever we carry in our rucksacks. Shadowrunners worry about Lone Star, Knight Errant and other law enforcement agencies, but out here in the field the only law enforcement to worry about is the law of the jungle, where only the strong and smart survive.

• Sheesh, what is this slag, a mercenary poet?

• Sandeep

• Never met Picador, have you? Before she hooked up with Matador's outfit, she used to be a literature student in Madrid. Takes all kinds, I guess.

• Hangfire

MISSION ESSENTIALS

I had reviewed Matador's earlier *Fields of Fire* from seven years ago to see if there was anything for me to build upon, but it seems he spent most of the time ranting endlessly about honor, professionalism and discipline. Understandable in its own way, because it was the stupidity of the shadowrunners we worked with that got us all nearly killed; were it not for them, Matador wouldn't have been in the hospital for eight months writing that little diatribe of his. Unfortunately, he left little in the way of practical, useful information applicable in the field. Honor means very little when one is trying to clear a minefield, after all.

The first thing you should understand is that the type of work that we mercs commonly perform isn't the same as the kind of work you shadowrunners pull off. You rarely find us pulling a corporate extraction in the middle of the sprawl, after all. And the tasks and missions we perform call for different tactical approaches and battle drills than what you in the shadows may be used to.

Remote Security

Ever since extraterritoriality gave corporations the right to arm themselves, the merc's bread and butter has been providing security for facilities, compounds and other corporate buildings in remote out-of-the-way places. The plain truth is that the megacorps simply have too many places to guard and not enough guards to watch them all. So they turn to us to pick up the slack.

• Not enough guards? Three companies of Jaguars watching Aztechnology's Seattle pyramid aren't enough guards? Sheesh, I'm glad I didn't run into them when they were at full strength!

• Trixie

• It's called economy of force. While the Azzies were reinforcing the barricades to keep out your skinny hoop, they were depleting garrisons in Tijuana, San Antonio and who knows how many other facilities around the world.

• Arcilght

Most corps like to keep their house units in high-visibility public places in the big cities, so often the places we're asked to protect are way out in the boondocks, especially in hot areas where there's a brushfire war or guerilla insurgency taking place. Places like Siberia, Africa, South America or even upper Saskatchewan. It's not uncommon to be dropped off at a lab or mine out in the middle of nowhere, with the nearest sign of civilization at least a few hours away by air. Since help could be at least a day or more in coming, the important thing here is to know how to be self-sufficient and tough it through the worst situations.

If you're contracted to protect a remote facility, the opposition forces (or OPFOR, as they're sometimes called) come in many varieties. Raids by shadowrunners or other mercs are always a risk, but they only occur intermittently. More likely, the type of enemy you'll see are guerillas, partisan forces or paramilitary militias. Usually these forces are small and possess inferior weapons, but the real problem is that they snipe at you constantly from under cover with a lot of harassing fire and hit-and-fade tactics. The important thing to remember is not to break under all that harassment. Guerillas have an uncanny sense of knowing when you've broken, and when that happens, they bum-rush you.

The other thing you can do is take the fight back to the guerillas. Whenever we got one of these babysitting contracts, we rarely spent the whole time hunkered down under cover. Matador hated sitting still, so he sent patrols out into the surrounding woods to flush out and light up the guerillas. That way he sent the message who was the boss in the area, and we hardly got any trouble afterwards.

• Picador forgot to mention about one other type of opposition: the non-metahuman kind. Ever since the Awakening it's been a lot less safe to go into the woods, what with the wild metacritters lurking out there. Sometimes the critters can be a lot more frightening than the guerillas; I once took a contract with Mitsuhama to protect one of their research labs in Macedonia a few years ago, while the Balkan warlords were having one of their usual spats. Recent shelling around Tetovo had displaced some of the local wildlife, and a pack of those three-headed Cerberus wolves decided to migrate south and mark their new hunting grounds right where our lab was located. I lost three buddies to the wolves before we were able to exterminate them. Even now I still get the creeps when I hear a wolf howl, even if it's only on the frid.

• Dio

• Sometimes on these remote security jobs, you're not hired to keep intruders out, but to keep something in; for example, prison work camps, POWs, paranormal holding pens, even

some corporate R&D labs in which work assignments are less than "voluntary."

Depending on the type of inmates and your employer, the rules of engagement can vary from camp to camp. Sometimes your employer may forbid deadly force unless absolutely necessary (for example, even recalcitrant corp chromedomes are still expensive to replace). In other cases, your employer may prefer you to shoot first and not ask questions later.

Oh, and just because you were hired to keep something in, that doesn't mean you don't have to worry about outside intruders. As a matter of fact, simply because you're keeping someone or something in (probably against their will), it's more likely that someone from outside is going to come to spring them.

• Bishop Frost

Patrolling

Patrolling is similar to remote security, but on a bigger scale. Instead of a single site, you're asked to protect a stretch of land. It may be a district that's having problems with guerillas. Or it may be the border between two hostile nations. The list of possibilities is endless.

• Or it may be important routes, like highways, railways and supply lines. Between Awakened critters and the general Balkanization of the world order, a lot of routes have become more vulnerable to attack. Heck, just recently the Pueblo have been hiring mercs to patrol I-10 between Palm Springs and the Palo Verdes because of their brushfire war with the Anasazi and other Mojave bandits.

• Punkrabbitt

The rules of remote security also apply here; after all, if you think about it, you're providing remote security on a larger scale. Most contracts usually engage company or even battalion-sized units, because of the size of the area being covered.

• Back in the day, when there used to be superpowers and the United Nations actually meant something, a lot of patrolling contracts would have been considered peacekeeping missions. Sometimes you're being asked by a local warlord or banana republic to keep the populace quiet while their forces are off fighting elsewhere. If that sounds like something you're doing, a word of warning: if the warlord is asking you to keep the peace, it means he's having trouble paying his own people to do so. So what's to guarantee he'll be able to pay you? Caveat emptor, and ask for some advance pay before you sign.

• Dancln' Hanson

If you find yourself working one of these contracts, I recommend treating the locals well and hiring a guide. Guides know the lay of the land well, and they can show and tell you things you wouldn't discern by reading a map alone. Like the fact that the Barghazi Pass was mined during a battle four years ago and still hasn't been fully cleared. Or that the Strietswald Forest is home to wild packs of fenrir wolves who hunt at night. Or that while the residents of Pak Tat may show their loyalty to



the warlord of Lanzhou, they really hate him and are secretly aiding the warlord's enemies. Guides are worth their weight in orichalcum, and you will only get a good, trustworthy one if you earn the locals' respect.

Reconnaissance

Reconnaissance simply means scouting out a certain area of ground to get some information. Sometimes you're just trying to get a feel for the lay of the land, looking for key terrain to take and defend, potential ambush sites, and lots of other things you can't tell by looking at a map. Most of the time you're tracking an enemy force, trying to determine which units are there, what they're doing, how they're operating, any habits and tendencies they favor and so on.

Reconnaissance missions vary in scope and duration, but the types of missions we mercs get generally involve covering a large region (a dozen square kilometers or more) for weeks or even months, usually behind enemy lines. On these types of missions, what you take along becomes critically important as your opportunities to stock up on equipment and supplies come few and far between. It's not so bad if your unit is mechanized or motorized; at least your vehicles are the ones humping the load. But if you're a foot-infantry grunt, better learn to live off the land, because that rucksack gets really heavy really fast.

- For several years the Texas Rangers have been contracting mercs to perform long-range recon patrols in the Aztlan-occupied parts of Texas, and even a few kilometers southward beyond the Rio Grande. All we were supposed to do was simply watch: which Aztle units moved in, their strength and training, who were the various unit commanders, strengths and weaknesses and peculiar habits, et fragging cetera. That way, if the boys at Fort Hood ever got the word to roll, they'd have the intelligence edge over the Aztles.

- Riggs

- One interesting trend, especially among North American mercs, is that mercs specializing in recon ops have been turning to mounted recon—not on vehicles, but on horses! Horses can carry more than your regular grunt, they travel farther and faster in a day, and they don't have the heat, noise and radar signature of combat vehicles. One unit, the Desert Rangers, has even gone so far as to develop reinforced saddle pintles, so they can fire their heavy and automatic weapons while in the saddle.

- Flint

The one important thing to remember about recon missions is to keep quiet. The longer the enemy doesn't know you're there, the easier it is to shadow them. And on the other side of the coin, once they find out about you they'll change all their plans, so those weeks spent out in the cold and rain meant nothing.

Raids

If there's anything that mercs do that most resembles shadowrunning, raids are probably it. Break into somewhere,

do something, then break out again. Pretty simple, no matter how you cut it.

Well, that's where the similarities end. From what I have seen from shadowrunners, shadowrunners favor stealthy tactics when on a raid: sneak in, grab what they came for, and (hopefully) sneak out again. Shadowrunners prefer to beat defenses by not alerting them to their presence. Their favorite tools and weapons include silencers, invisibility spells and sleaze utilities.

With mercs, our tactics are different. Most of the targets we hit are out in the wilderness, with backup forces at least several hours' travel away. So instead of stealth, we go for surprise and shock. Hit them hard, hit them fast, do our job and beat feet before they can recover their wits.

- And when Picador says hit hard and hit fast, she does not mean maximize the body count. What she means is to pound them relentlessly, so as to break their wills. When the whole world is blowing up around you, it's very hard not to turn tail and flee. To put it in other terms, think of this as intimidation by superior firepower.

- Roadblock

- Like a lot of shadowruns, some merc raids take place to grab something that the other side wants. But that's not always the case. The objective of a merc raid maybe to take out someone or something: a fuel dump, an ammo transfer point, a certain general and his command staff and so on.

- Scrap Iron

- And sometimes it's just to get a message across. A few years ago, my unit was hired to raid a series of poppy farms near Mandalay in Myanmar. Our orders were to leave all the facilities and personnel intact (as much as possible), but to torch every poppy and all the heroin derived from it. Turns out all those poppy farms were owned by a warlord in the Myanmar interior threatening to go to war with his neighboring warlord downstream on the Irrawaddy. The message was pretty clear: you attack me, and I cut off your cash flow. The two made peace pretty quickly.

- Duy uy Minh

Show of Force

A show of force is a diversionary mission. Rather than an attack to seize an objective, a show of force accomplishes no other purpose than to attract the enemy's attention to yourself. The only reason to do so is to distract them, usually from an assault or infiltration taking place somewhere else.

These types of job aren't very popular in merc circles. True, deception and distraction is an essential part of tactics, but you risk heavy casualties for no real purpose. Matador always charged more for a show of force mission than a regular raid.

- I once took a contract to light up a UniOil facility near Seattle almost ten years ago, while a shadowrunner team snuck into another facility. I ended up losing more than two-thirds my com-

pany, including my best first sergeant, Johnny Roman Nose. Anyone asks me to pull off a job like that again, I'm telling them to take a dive into Puget Sound.

• Hampton

Desert Wars

It would be inconceivable to discuss mercenaries without a mention about Desert Wars. After all, most of you wouldn't even know about us if it wasn't for this little media spectacle.

I'm sure you've heard the story of how it began: back in the day, two corp teams went to war in the Libyan Desert over some tech prize. Each called in back-up, and before long a major battle was brewing. A media team got wind of the conflict, managed to insert a trid crew into the middle and hit bonanza with the ratings. The rest, as the saying goes, is history.

Since then, both the corps and the networks have been paying mucho dinero for us mercs to fight each other or the corporate armies in the North African wastelands. The prize purses can score some big money and offer tempting incentives for units just starting out. Especially tantalizing is the Mercenary Challenge, which offers a prize purse in the millions for the best two and further bonuses for taking on the megacorps' best teams.

In fact, the Desert Wars have gotten so popular that the networks are spinning off two new Desert Wars series. The first one will take place in the Gobi Desert, with the central broadcasting headquarters located around Baotou, Inner Mongolia. CBC and ABS are producing the series, which is set to air this fall. From what I've heard, the networks have already put out calls for units, and a few North African veterans are supposed to be on the ground there already.

• They're going to be in for a shock, then. Fighting in the Gobi is nothing like the Libyan wastes. Out in North Africa, there's nothing but sand as far as the eye can see, which makes it prime tank country. The Gobi, however, is rocky terrain, and that portion near Baotou has quite a few highlands and mountains. This kind of terrain favors t-birds and helicopter-borne air assault. If you get a glg out there, make sure you've got some good air defense vehicles, like the Ruhrmetall Falkener or Vogelhund.

• Reaper

• While the Gobi may be rockier and more uneven than North Africa, it's not exactly Rocky Mountain T-bird country either. Me and my wingman Szechuan were playing t-bird tag with some mercs contracted to Shlawase. Szechuan went in to make a bombing run on a few APCs in a low canyon. At the end of the canyon Szechuan pulled up too early; just as he had cleared the canyon walls, a laser from an overwatching Kellor assault tank nailed him in the underside. The bastard scored a lucky hit and hit one of Szechuan's interior rocket pods, cooking off the rockets in there and blowing his T-bird apart.

• Hipot





• I think there's more to these Gobi Wars than just ratings. Some folks I know in Manhattan tell me that CBC is the lead producer, and Mitsuhama owns CBC. Mitsuhama, which runs several mines in the Russian Far East, is pretty ticked at Yamatetsu, who had just beat them out in securing some exclusive mineral rights around the Gobi. Sounds like the Gobi Wars are just a screen for some MCT sniping at Yamatetsu.

• Datura

• There's a hidden agenda, but it's not Mitsuhama's. Though CBC is the lead producer, the original concept came from ABS, who got CBC to front the costs in the partnership. From what media wags have told me, Gobi Wars came on ABS's drawing boards in late February—soon after the great dragon Lung laired up on T'ai Shan in Shandong. And if you check the books, you'll find that ABS is owned by ... Saeder-Krupp! Methinks perhaps Lofwyr may be using the Gobi Wars to screen some sort of power play against Lung.

• Black Knight

The second spinoff is set to broadcast somewhere a little closer to all of you in Shadowland—as a matter of fact, practically in your backyard. EEX, an entertainment studio out of Los Angeles, will be broadcasting some of the running battles taking place in the Mojave Desert between mercs, the Pueblo security forces, desert marauders and some of the wilder beasts living in the desert there. From some of the talk I've heard from mercs out around Barstow, the Mojave Wars are being billed as a "reality show," and aiming for grit and edge, as opposed to the glitter and hype normally found in North Africa.

• And who owns EEX? Amalgamated Studios, which was recently bought out by ... the Pueblo! Considering how much trouble they've been having in securing the Mojave, it looks like the Pueblo are trying to make the best out of a bad situation.

• Studio Tech

Safari

Safari—the hunt for big game. Every now and then there comes up a call in the merc community for a job to go out into deepest darkest Nowheresland to find and capture some undiscovered species of Awakened metacritter (usually dangerous). Alternately, the call comes up to exterminate a pack of wild somethings that's been threatening a remote facility. Either way, it's work for us.

More often than not, light foot-infantry units get these missions over mechanized units; all the heat and noise vehicles put out usually scares off the local wildlife. If you ever get one of these jobs, I'd recommend getting a lot of high-powered weapons. I don't recommend using any sort of anti-vehicle or indirect fire weapons; most of these have a minimum arming range, and critters, from my experience, have a nasty knack of getting in way too close for comfort.

• If you ever get one of these safari or bughunting jobs, I'd really recommend taking along a few flamethrowers. For a long

time these things were considered tactically obsolete, because the short range couldn't keep up with modern heavy weapons. But metacritters don't play by conventional tactics and fear of fire seems to be a very common primal trait. It's no surprise that flamethrowers made their comeback after the Awakening and the appearance of all these metacritters.

• Recondo

• Just because paracritters don't observe the rules of warfare doesn't mean they're dumb, either. You still need to use smart tactics, or you may find yourselves being the prey instead. Our platoon had been hired out to hunt down a pack of rabid agropelters (you know, those psycho goblinized lab monkeys) that had been terrorizing several Salish-Shidhe tribes in the eastern Council lands. Reading through after-action reports of Salish Rangers who tried hunting them down earlier, we could tell that brute force simply wasn't going to work; they simply scattered, regrouped and counter-ambushed the Rangers when their guard was down.

So what we did was split into two groups: flushers and trappers. The trappers set up an ambush area, using the local woods and plants to set up some Malayan tiger traps, pits, vine nets, even some collapsing trees if they came from above. (Agropelters have a wickedly good sense of smell, so we couldn't use anything artificial.) Meanwhile we flushers combed through the woods making lots of noise and letting off all sorts of stink bombs, which drew out the agropelters to attack. When they did, we fell back to the ambush area, and the agropelters rushed in, setting off the traps, which caught them and held them in place. With the agropelters pinned down and unable to move, we had no trouble wiping them out.

• Haydn Sikh

THE ART OF WAR

Because the jobs we perform have different objectives, time frames and big-picture scopes than what you in the shadows may be used to, we approach our biz in a different manner. Here's what you need to know if you want to work in our world.

The Contract

For most shadowrunning jobs, your team is hired to perform one specific mission. You get the job, spend a few days on legwork, and then make the run. After the run, you hook up with your client, review the results or hand over the goods, get paid and walk away. End of shadowrun.

It isn't like that in the merc world. While the shadowrunner's world may revolve around a single job, ours revolves around the contract. Sometimes the contract calls for our services for a single mission, but in most cases the terms specify a tour of duty for a given duration of time, like a month, three months, six months or whatever. During that timeframe, we may engage on several missions, battles, or engagements, all the while serving under the same contract.

- Which makes employer trust all the more serious in our line of work. When you're working for the same "Johnson" for months at a time, you get to know their subtleties and quirks—and they yours. Such intimate knowledge makes betrayal even more painful. And considering how close-knit mercs are, word travels fast. So if you do pull a double-cross around mercs, you may as well put a machine gun to your head, because some other merc certainly will.
- Hangfire

Chain of Command

Just about all the mercs I've known used to come from some military background, and they still maintain the old military organizations and command structures. And with good reason, too. There are no lone wolves in the merc community. When you are out in the field with no other contact other than the enemy, you learn to work together with your teammates.

With that in mind, I thought I'd give a quick primer on basic military unit structures. Keep in mind that different countries (and even different merc units!) may have slightly different nuances, so your mileage may vary.

Squad: No matter what army you're talking about—merc, corporate, or national—the squad is still the basic fundamental unit. Most grunt squads comprise of eight to ten people, mostly junior enlisted types led by a buck sergeant, while in mechanized units, a single vehicle crew of three to five (still led by a sergeant) makes up a squad. Occasionally squads may split up into two teams, but only on a temporary basis.

- Though most squads consist of junior enlisted, in merc circles you'll also see squads of high-level NCOs (noncommissioned officers, a.k.a. sergeants) or junior officers led by a senior officer. Those kinds of squads are actually military advisors—they get hired on by government or corporate sponsors to train militias or insurgents, provide tactical advice, and "report" back to their clients how their pet armies are doing.
- Arctic White

Platoon: Take three to five squads, add a lieutenant (the lowest officer level), and you've got yourself a platoon. Platoons are the smallest unit that can realistically garrison a compound, so the large majority of remote security contracts negotiate terms in definition of platoon-sized units. If you ever see a contract for a squad-sized unit it's likely to be for a small, short-term mission, like a safari or a quick raid, unless it's an advisor group.

Company: The company is the next level up, consisting of three to five platoons and a mid-level commanding officer (like a captain). Companies have their own internal support structure (cooks, mechanics, clerks, etc.), so they can stay out in the field on their own for months at a time. Some of the smaller merc units out there are actually company-sized units, most of which are just starting out.

Battalion: A battalion is probably the biggest unit you're going to find in merc circles. Consisting of three to five companies, a battalion is run by a senior officer (like a full or lieu-

tenant colonel) and actually has its own command staff. It also has a full company of support units and personnel, so it's self-sufficient and can operate on its own almost indefinitely. The large majority of merc organizations out there are actually battalions. Only the big worldwide merc orgs, like MET 2000 or Tsunami, are larger than battalion-sized.

- Rank is largely relative within merc organizations, since there's no common system. Most mercs come straight out of military service, so they usually take the rank they had when they left. Once they sign in, though, anything goes. There are plenty of stories of merc privates earning a field commission for combat leadership and becoming senior officers. (Look at Picador, for instance.) There are also plenty of stories of merc officers who got busted to private nobodies after a major, contract-ending hose-up.
- Raptor

• Some of the larger organizations, like MET 2000 and Tsunami, do have formal training and promotion programs instituted to train and promote officers and NCOs, even if you enlisted straight off the street. Just like with the regular military, however, getting into these programs requires a considerable amount of bootlicking and hoop kissing. For example, your odds of getting a promotion in Tsunami aren't very good if you're a kowaru (or even worse, a gajjin), unless you know something you can hold against the brass.

- El Desperado

Jacks of All Trades

Soldiering means being proficient at a lot of difficult tasks besides fighting. This applies just as much for regular military service members as it does for mercs. It's a common gripe amongst soldiers of all stripes: to win in battle, soldiers have to master many different skills, but there is never enough training time available to practice all of them adequately.

Next to combat, the most important thing a soldier can learn is to keep his head down and stay hidden. With the advent of automatic weapons in the last century, being out in the open is a surefire way to get a medal awarded posthumously. This is particularly true for those assigned as snipers or artillery spotters. Once the rounds hit their mark, it won't take the other side long to figure out where they came from.

Almost as important as that is land navigation, the ability to figure your way from point A to point B. You would think that in this age of GPS and advanced autonavigation systems no one would get lost in the woods, but our NCOs still get a laugh when some green junior lieutenant gets lost on an exercise. If you can't tell a draw from a valley or understand why magnetic deflection matters, then all those fancy electronics will do is make you more confused when you *do* get lost.

Whether you can find your way through the woods or not, one very important skill to know is how to survive in the wilderness. Unlike the sprawl, where you don't have to wander more than a kilometer to find a Stuffer Shack or coffin motel, these things aren't easily found out in the wilderness.



And between pollution and the Awakening, finding something that won't kill you when you eat it, drink it, or hide in it is even harder than it's been before.

- Most people think that toughness and physical endurance helps your chances of survival. One of the most important things you can do to improve your odds of surviving is not panic and keep a clear enough head to remember how to do those foraging and sheltering tasks you have to. During my enlistment with the CAS Army, I went through their grueling Ranger School course. (In summary, twelve weeks spent in four types of hell.) One interesting thing I remember is that a lot of the bigger candidates were more likely to drop out, because the larger frames required more maintenance; troll candidates usually were among the first wave of dropouts. The ones who did the best were the team player types, who did what they were told to do, despite being cold, tired, wet, hungry and generally miserable.
- Unreal McCoy

Information Warfare

Saying "Information is the only valuable thing today," is trite and clichéd. Nevertheless it's the truth, both in the shadows and on the battlefield. Since Echo Mirage, the Matrix has added a new dimension to warfare for which tacticians have to plan.

Much as in regular military forces, Matrix warfare in merc forces is pretty specialized and usually not seen in lower echelon units. It's unusual to see deckers in merc companies or lower, unless the company in question specializes in military intelligence ops. A typical combat battalion sometimes has a special team of deckers in their organization, and they loan out individuals from the team to subordinate companies or platoons as needed and available. There's no room for slackers in a field unit, so merc deckers still must have basic proficiency in firearms, survival and other basic soldiering skills.

- Mercs are too on-the-go to be tied down by bulky mainframes, so merc deckers tend to be more offensive-minded, loading up particularly on attack and sleaze utilities. Merc deckers also generally double as senior technicians and electronic warfare specialists, so they're a lot savvier with the warez than your typical shadowrunner decker.
- Seminary
- One job that merc deckers tend to draw a lot more than usual is reconnaissance patrols. Not too surprising: when you're getting info on the enemy, you cover all the angles including cyberspace. Most shadowrunners think of combat deckers as being good shooters, but the truth is that combat deckers are better sneakers than they are shooters.
- Copperhead

Supertroopers

Strange as it may sound, cybernetic (and bioware) implantation is more common amongst mercenary ranks than it is in regular corporate or national militaries. Much of the reason has to do with turnover—in your typical line units, most people

enlist for one term, maybe two, before getting out. Given how much time and money is invested with cyberware, this high turnover doesn't justify implantation in regular line units, subsequently limiting it to elite and special forces.

In the merc world, however, more of us here are lifers than not, so getting implantation is more justifiable amongst us. On the other hand, don't expect to see many cyborgs or cyber-zombies here. Unlike the corporate or national forces, we operate on a limited budget, so any cyberware tends to be the basic garden variety.

- So if you happen to run into any mercs sporting beta- or deltaware, consider a tactical retreat, because it means you're dealing with the best of the best.
- Big Boa

• No, it means you're dealing with the most spendthrift merc units out there. Let me tell you, our unit has little cyberware, and none of it even alpha-grade. Yet we've consistently smoked MET 2000 and Tsunami hotshots regularly. How? By training hard, employing sound tactics and making the most of lucky breaks. Despite what the MET brass may think, you can't buy yourself a victory.

- Ballidou

Combat Magic

Nowadays, you can't talk about any sort of trade or profession without mentioning how it's adapted to magic's appearance in the world. The merc trade's no exception. Magicians are so useful for just about everything that you'd be a fool not to have one in your unit.

The biggest mistake I've seen merc units make is using their magicians as front-line fighters. A lot of their spells are less effective against armored or mechanized forces, and once they first start slinging spells, they draw enemy fire. ("Geek the mage first" is as prevalent here as it is in the shadows.) You would be better served using magicians in a supporting role, for reconnaissance, astral defense or medical support. When on the offensive, use magic as a special weapons team to take out something you couldn't by conventional means.

- And besides, chances are that the other side has magicians also. So until you take out the other side's magician, your own spellslinger is going to be tied up providing spell defense and other magical countermeasures.
- Warlord Gray
- Don't forget combat engineering. Magicians can dig up whole trenches with a blink of an eye. In my last unit, we had one of those aspected conjurer magicians who couldn't cast spells, but could summon elementals. We used him to call up earth elementals to dig out entrenchments, lay tracks for our vehicles, build tank traps and even clear out minefields.
- TDC

One unusual trend I've noticed is that magicians seem to be more prevalent in lower level merc units than they are in corpo-

rate or national armies. In those armies, they tend to concentrate their magical assets at the brigade, division or higher levels, only assigning them sparingly for lower units, typically one per combat battalion. In merc circles, however, we rarely have those large units, so magicians tend to get spread out more, frequently appearing at the company and battalion level. I've even seen a platoon with its own staff mage, but that's really rare.

SITUATION REPORTS

I think I've ranted enough. You wanted to know about the merc world the past few years, so I should cut to the chase.

MERC HANGOUTS

If you're looking for mercs, we tend to congregate a lot around military bases, particularly army bases. Part of it's because many of us are products of the army, and we like associating with those who've shared the same experience. Part of it's also for recruitment purposes. Veterans leave the services every day, and most of them don't know what to do afterwards. A lot of them end up with us.

- Since the Salish-Tsimshian border war flared up, there's been a lot of buzz going around in the suburbs around Fort Lewis, particularly Tillicum and Stellacoom, as Johnsons on both sides of the border have been hiring mercs left and right. This has made the MPs on Fort Lewis a little jumpy, especially since both are close to where General Colloton has her headquarters.
- TacFire

Lisbon

Ever since the beginning of the Euowars, the capital of Portugal has become one of the primary mercenary havens in the world, if not the biggest altogether. After the action ended during the Russian campaign, Alliance for Allah forces out of Morocco staged an amphibious assault into Spain and Portugal across the Straits of Gibraltar. With Portuguese forces deployed in Central Europe, the Portuguese government and local megacorps hastily contracted dozens of merc units to defend against the Islamic incursion and eventually repulse Alliance invaders from Portuguese territory.

Since then, the merc presence in Lisbon has grown thanks to ongoing hostilities in North Africa, not to mention its relative proximity to the Desert Wars theater in what used to be Libya. Additionally, the influx of Brazilian refugees fleeing from the Amazonian takeover of Brazil have inextricably tied Lisbon to conflicts in South America, particularly those around the Amazon.

- Ah, Lisbon. That charming hellhole of cutthroats that I call home. Not only is this the place to come to get the scoop on wars from Caracas to Cairo, but it also boasts some of the wildest and most decadent nightlife west of Berlin. There's a reason the locals call it "A Cidade do Delinquo" (Sin City): nightclubs, fight pits, bordellos and gambling dens line the dockside areas and outlying regions.
- Flak Jack

Of course, mercenary contracting is not Lisbon's only claim to fame. Tourism is also a major money maker, thanks to Lisbon's eclectic mix of Iberian, Brazilian and Moorish cultures. Thanks to the seaquake and flood that washed out most of downtown Lisbon in 2021, the cityscape is an unusual mixture of eighteenth century mansions and twenty-first century glass towers.

The city also has a thriving smuggling trade going, dealing with the Barbary Coast and Canary Islands, not to mention Mediterranean smugglers from Malta, Greece and Lebanon. If you're looking for black beetles from Maghreb, wild desert paracritters from Africa, exotic telesma from Amazonia or military electronics from Israel, Lisbon's a good bet to find it.

- If you're thinking about getting a cut of Lisbon's smuggling scene, watch out for the Kussondulola Ghost Cartel. The Kussondulola originated from the Galo Negro, an Afro-European polyclub, but their interest turned away from politics towards organized crime. The Kussondulola control most of the smuggling scene between Lisbon and Africa and they are ruthless. Their leader, Jah Soba, was apparently indicted for war crimes in Angola several years ago.
- Sepherim

- Don't deal with Soba. Ever. He's persona non grata in Lisbon's merc community, and with good reason.

- Flak Jack

Macao

As Lisbon is to the West, so is Macao to the East. Considering that Macao used to be a Portuguese colony, the symmetry is particularly fitting. Sitting on the mouth of the Pearl River opposite from Hong Kong, Macao reverted back to Chinese rule a few years after Hong Kong returned to China. Like Hong Kong, Macao enjoyed special administrative status after returning to Chinese rule, but unlike its Chinese-British counterpart, did not attract a lot of big business interests. Instead, Macao attracted other interests, particularly organized crime, due to the legal status of gambling in its territory.

- Syndicate activity is still pretty strong in Macao. In addition to gambling, the syndicates also have their fingers in Macao's chip and flesh trade. Because of the stranglehold the Triads have over the Hong Kong underworld, both the Yakuza and the Rings moved to Macao instead. They still have to contend with the local Macao Triads, though.

- China Doll

- Gunrunning and smuggling is also a notable trade in Macao's underworld. Most of them are independents, but quite a few smuggling operations are run by the Rings. The smuggling is two way, with Russian and Chinese arms being sold to Guangxi and Vietnamese pirates, and heroin and Indochinese magical compounds flowing back to Vladivostok and Shanghai.

- Mekong Michelle



Macao started becoming a mercenary haven in the late twenty-twenties, during a border clash between the Canton Confederation and the Guangxi nation, both recently emerged from the rubble of China's collapse. Since then, the ongoing recurrence of brushfire wars and civil disturbances in Southeast Asia and amongst the Chinese warlords has kept Macao in business. And with the recent withdrawal of the Japanese from the Philippines, both the Huk and the Japanacorps have been visiting Macao to look for reinforcements willing to entangle themselves down there.

- Macao is a real rough-and-tumble territory, and I don't mean that in a good sense. It always seems to be in the shadows of Hong Kong, so its nightlife doesn't seem quite as lively. I really don't understand why Combat, Inc. decided to move back here, Hong Kong seems like a much safer place to do business.
- China Doll

- From what I've heard, Combat, Inc. didn't really have a choice.
- Johnny Hotel

- With the new Gobi Wars spinoff set to air for the upcoming season, the merc activity around here has picked up quite a bit. CBC and ABS negotiators have been spending a lot of time in Macao recently. On the other hand, so have representatives from the Henan neo-communists, as well as the Imperial

Kingdom of Beijing. I don't think they buy the Gobi Wars as a purely media spectacle.

- Tai Ho Leng

Constantinople

Mercs tend to gather around merc havens like Lisbon and Macao because they're relatively close to major conflict zones. But in the case of Constantinople, it's located smack in the middle of one.

Formerly known by its Turkish name of Istanbul, Constantinople used to be a part of Turkey up until the end of the Euro-Wars in 2036. During that year, Mullah Sayid Jazir, clerical head of the Alliance for Allah, was assassinated while touring Istanbul, and the Alliance collapsed. Turkey itself split apart, between western ottomans seeking to form a secular state and eastern fundamentalists trying to keep the Alliance alive. Istanbul itself got caught in the crossfire until 2042, when it seceded from Turkey, renamed itself as Constantinople and claimed the region around the Bosfor Straits as an independent commonwealth. It received immediate recognition from Ukraine, who sent warships across the Black Sea to support Constantinople's claim, thus forestalling any reaction by the other warring Turkish factions.

- The Ukrainians weren't the only ones pushing for Constantinople's claim. During Constantinople's first few years after independence, they got a lot of financial aid and military contracts from Saeder-Krupp. Considering that S-K had just

acquired the Caspian pipelines tapping the Russian oil fields on the other side of the Black Sea, they probably wanted to make sure their tankers had secure passage through the Bosporus Straits.

• Felix

Even today, Constantinople maintains a precarious existence. The split between secular west and religious east in the rest of Turkey still creates occasional flare-ups and clashes between factions. Meanwhile in Europe, Bulgaria, Romania and the Balkans have fragmented into quarrelling Muslim, Western and Slavic enclaves. And let's not forget the nearby Middle East and its perpetual Arab-Israeli antagonisms. Were it not for the fact that so many mercs congregate in Constantinople regularly, it would have fallen back into chaos many years ago.

• Constantinople is an odd town to live in. As the name change suggests, the region has undergone a Byzantine revival, but the Muslim and Arabic influences are still around. Though Turkish still remains the official language, the written alphabet has switched from Roman characters to Cyrillic. Ukrainian is the second most popular language, though many residents also understand Greek and Russian as well.

• Zartan

• Though Constantinople is a nominally secular state, the Orthodox Church wields a lot of influence in daily life. (No surprise, since Constantinople was the Orthodoxy's birthplace.) The Orthodoxy's return to its historical roots has raised concern within the Vatican. Word is that the New Jesuits are trying to set up a mission in Constantinople to see what the Constantinople Orthodoxy may be up to.

• Titus X

The Outpost

The Outpost is an unusual mercenary haven. It has no physical location, but rather exists solely on the Matrix. The hardware is built on the old American AUTOVON system, a network that connected American military posts across the country and also NATO posts in western Europe. As the United States withdrew from Europe and later broke up following the Treaty of Denver, many military installations in ex-US territories were shut down but the AUTOVON infrastructure remained mostly untouched. (After all, why waste time digging up thousands of kilometers of cable?)

For a long time the AUTOVON infrastructure lay forgotten, until the early 2040s. Mercs in the newly-defined field of Matrix warfare (most of them Eurowars veterans) decided to set up their own haven and dug up all the records for the old AUTOVON system. With a few well-placed calls around Europe and North America, they managed to acquire several of the more remote AUTOVON nodes (mostly for minor depots). A few upgrades later, they created a distributed network, later dubbed the Outpost.

Since then, the Outpost has become a primary virtual haven for mercenaries worldwide. Here mercs deployed in

Johannesburg can swap war stories with counterparts in Fort Lewis, while others search job lists for current and upcoming contracts. One of the subprocessors, the War Room, features a 3-dimensional globe tracking various military conflicts (mercenary-related or not) around the world. But probably the most popular feature is a virtual room called "The Range," where merc deckers can hone their combat decking skills, either against IC targets or against each other.

• Terms of service for using the Range forbid usage of any lethal or deck-damaging utilities; after all, the Range exists for practice. There is a sub-channel on the Range, however, for grudge matches where anything goes. The admins deny it exists, but they turn a blind eye as long as they get paid off in advance.

• Kraker-Jack

• Man, I can't believe that rumor is still going around. The grudge matches are a myth. End of story.

• Televiper

• Sure, you'd say that, being an admin and all.

• Kraker-Jack

BROTHERS IN ARMS

In the past half-century or so of wars, a few mercenary organizations have managed to distinguish themselves in combat and rise to prominence, rivaling even some of the world powers. Here's a look at some of the top merc organizations right now.

MET 2000

Based out of Hannover, Germany, MET 2000 is the largest mercenary organization in the world, with several divisions on assignment across Europe, the Middle East and Africa. With major backers including the German confederate government, the German defense manufacturer Ruhrmetall and Euro-industrial giant IFMU, MET 2000 has the financial muscle to raise, train and equip large mercenary battalions. It should come as no surprise that they specialize in armored and mechanized infantry combat.

Though MET 2000 is capable of worldwide deployment, in reality the large majority of their work takes them to Africa, the Middle East and the Balkans. They have had some tours in South America and India, though those are few compared to the other contracts. As part of their funding agreement with the German government, they still have to maintain a standing garrison in Germany as a national reserve. Consequently, most of their service obligation is spent patrolling the border around the SOX nuclear wasteland.

• They may have the biggest tanks and the loudest explosions, but that doesn't necessarily mean that they're the best. Their unofficial motto is "Tactics? Who needs tactics when you've got advanced weaponry?" All that equipment and training may give them the advantage on the battlefield, but if you put up a



decent fight and pull a surprise here and there, they'll fold like a house of cards.

- Ballidou

- I'd expect you to say that, Ballidou. Still sore from that hoop-kicking we gave you in Tunis last year? Just name the time and place—we'll show up for the rematch and kick your hoop all over again.

- METalhead

- I thought Matador's loathing of MET 2000 was simply a personal pet peeve, but from all the reports I read about Tunis, I can see why Matador felt the way he did. You'd better hope I don't find you've been in the Northwest when Matador went down, or there'll be trouble the next time I'm in Lisbon.

- Picador

Tsunami

Tsunami is number two in size, but not by much. Headquartered in Okinawa, Tsunami is also a worldwide organization, though they tend to favor Pacific theaters. Like MET2000, Tsunami also has a sizeable amount of outside sponsorship, mostly from the Japanacorp. Unlike MET2000, they tend to spend their venture capital more on chrome and bioware rather than armored vehicles and heavy weapons. On an individual level, a Tsunami merc is probably more dangerous than a MET2000 merc, simply because of all the implants the Tsunami guy is packing.

- What I said about MET2000 I also say about Tsunami. They may have flashy chrome, but that doesn't mean they're better. Too often they rely a lot on chipped skills. That may be okay in ordinary situations, but combat is hardly an ordinary situation. Skills learned the hard way are a lot more reliable.

- Ballidou

- Because they receive a lot of backing from the Japanacorp, it tends to dictate a lot of their policies. For example, Tsunami employs very few metahuman mercs and their officer ranks are completely human and mostly Asian. This has recently put them in a bind, because the Imperial Regent has been pressuring them to open up to metahumans. If they don't, the Imperial government has implied they might revoke Tsunami's special extraterritorial status on Okinawa.

- Akyna

10,000 Daggers

Based out of Constantinople, 10K Daggers was founded a few years after Constantinople's independence by several ex-Ukrainian officers and Turkish war veterans. Unlike MET2000 or Tsunami, the Daggers don't have a lot of advanced equipment. They make up for it by being experts in their specialty: commando operations, long-range reconnaissance and other assorted black ops. These guys are particu-

larly masterful at night operations; I've heard they hire a lot of orks and elves for their exceptional night vision. Take it from me, these guys are real sneaky bastards; getting the jump on them is very rare.

- 10K Daggers doesn't seem to have any major backers, but they do seem to be pretty well off. Probably because they get paid well for all those black ops they do. They do seem to have a lot of influence within the Constantinople government, but that's no surprise. Constantinople needs the Daggers more than the other way round.

- Flak Jack

- Everyone thinks that Mossad was behind the hit on Ibn Elsa (even the man himself), but I have to wonder if maybe the Daggers might have done it and pinned the blame on the Israelis. After all, Ibn Elsa was pushing for a united Islamic government, and that would include Turkey as well. That would definitely not sit well with Constantinople, who could possibly call in a favor from the Daggers.

- Zartan

- I'll bet the Israelis are hoping that the Jihad is considering that possibility too.

- Saevor

Combat Inc.

Originally headquartered in Hong Kong in the New Territories, Combat Inc. recently announced that they were moving across the Pearl River Estuary to nearby Macao. Regardless of location, Combat Inc. is the top mercenary contractor in the Pacific Rim, both on the Eastern and Western Hemisphere. Their particular specialty is operations in Southeast Asia and Australia.

- Combat Inc.'s relocation to Macao wasn't exactly voluntary. They ran afoul of Wuxing back during the Orichalcum Rush, when natural orichalcum was popping up all around. As fate would have it, every time Wuxing tried to jump a new claim, they found Combat Inc. troops already there on guard for their various clients (namely Shiawase, Mitsuhamma and the Atlantean Foundation). After the fifth or so run-in between the two, Wuxing sent a message to Combat Inc. that Hong Kong wasn't big enough for the two of them.

- Johnny Hotel

- They may not have to worry about Wuxing for a while. Lately they've been getting a lot of contracts in North America, both for the Salish-Tsimshian border war and the Mojave war. There's word they're also planning to enter into a bidding war with Tsunami for some of the Peruvian border contracts as well.

- Mk I Eyeball

BATTLEFIELDS

The world has changed a lot in the past few years. Some hotspots have died down, while others have faded to the point where, while both sides hate each other, actual hostilities don't take place. On the other hand, new hostilities in new places have arisen. Here's a list of the current mercenary favorites.

North America

Right now, there is no place hotter in terms of military conflict than the North American continent. The Salish-Tsimshian Border War, possible civil war in the Algonkian-Manitou Council, Saito's California campaign, Pueblo entanglements in the Mojave or the continual Mexican standoff in Texas—there's no shortage of work opportunities west of the Mississippi.

The Philippines

The recent withdrawal of Imperial Japanese forces from the Philippines has left the region in a lurch. Without the Marines to avoid, the Huk have unleashed havoc across the islands and the Japanacops in the region have come under fire from rebel retaliation, forcing them to augment their security with mercenary assistance. It may be a long time before peace and order return to the Philippines.

- Japanese apologist. We don't want your kind of help, you hired murderer. We'll bring about our own justice!
- Tikbalang

- Justice? Don't you mean revenge? Where is the justice in slaughtering innocent researchers and Filipino workers at Renraku's marine lab on Leyte? At least when the Marines were here, we had order. You Huk terrorists are no better than the Imperial oppressors.
- Naing

The Yucatán

The Yucatán has always been a hot conflict zone, but Aztlan's recent reversals of fortune have worsened the turmoil. Despite their military presence, Aztlan forces seem to be a rout away from full retreat. The rebels, however, aren't faring well either. Though they're not being slaughtered wholesale by the Azzies, they've still been unable to take advantage of Aztlan's misfortunes. If anything, contract prospects for the Yucatán campaign have increased on both sides.

- The pay may be better, but I am more resolute than ever before about not accepting a Yucatán contract. From what my magician friends tell me, the war has spilled over into the spirit world, with toxics on one side, nature spirits on the other and both the Azzies and the rebels caught in the middle. If I go somewhere, I would like to have at least some assurance of coming back spiritually intact.
- Arctic White

Peru

With the withdrawal of Japanese military forces from Peru as well as the sudden flare up around the Nasca Lines, relations between Peru and Amazonia have degenerated rapidly. Amazonia has threatened to see that the Japanacops operating in Peru follow the Imperial Marines in leaving South America. Add to that increased activity from Sendero Luminoso and the Ghost Cartels, and you've got a grab bag of opportunities. Quite a few companies I've known have gotten contracts to patrol the Peru-Amazonia border. Furthermore, the bulletin boards of the Outpost have been stuffed with contract offers from the various Japanacops to protect their compounds deep in the Peruvian jungles.

Africa

The "Dark Continent" has always been a ready source of work for mercs. Ever since they started cutting loose from their European colonizers, there's always been fighting going on at one place or another on the continent. If anything, it seems like magic's return has exacerbated the conflicts even more.

Recently, two significant events have lit up the continent anew on the War Room globe. Down around Kenya, the megacops were set and ready to build a mass driver at the summit of Mount Kilimanjaro until spirits native to the mountain attacked the corporate teams and put those plans to a halt. Local warlords over the borders in Somalia, Ethiopia and Tanzania have taken advantage of the chaos to cross the border and raid corporate holdings in Kenya. Things just seem to go from bad to worse for the corps and the Kenyan government.

- Sounds like a classic case of the schoolyard bully getting a black eye. When the other kids see someone stand up to the bully and win, they aren't afraid of him any more. If I was the corps, I'd better put down the locals first, or else they're going to be too preoccupied to worry about the mountain.
- Huey Short

The other event that's gotten Africa fired up took place on the western end of the continent, in the ghoul nation of Asamando. For a while Asamando had been sitting pretty, as deposits of naturally occurring orichalcum started appearing next to Asamando's hauls of gold, diamonds and other precious metals. But when the orichalcum veins started to dry up, so did Asamando's dreams of glory. In May, the Asante Nation started cracking down hard on the smuggling of metahuman flesh into the Asamando Nation, claiming that the trade, traffic and stockpiling of dead bodies posed a serious threat from shedim possessing them.

Before you knew it, both sides had engaged in several bloody border skirmishes almost bordering on war. For a while it looked like the two would deadlock into another stalemate, but a few months ago, Asamando forces inexplicably pulled back and retreated within their borders. The Asante now control the intervening countryside between the two nations, but two attempts they have made to invade



Asamando have been repulsed. From what my friends in Lisbon are saying, the Asante have put out a call for mercenary reinforcements for a third push.

- Thanks, but no thanks, I don't intend to become ghoulish chow.
- /ng3lph54r

• The Asante aren't the only ones looking for merc assistance in this little war. DeBeers Omnitech has a refinery and processing plant on the Volta, about halfway between Asante and Asamando. DBO doesn't want to be taking any chances it can afford not to.

- Flak Jack

• The one thing I found odd is Asamando's sudden unexplained retreat. Anyone got any ideas? Me, I think Asante's warnings of the shedim threat are valid, and Asamando may be taking it on the chin for it. And from what I've heard in Lisbon, quite a few DBO execs looking for merc protection also feel the same as the Asante.

- Sepherim

Yakut (Siberia)

Ever since the Siberians took most of Siberia from the Russians, it's been a near-constant skirmish between the two forces along the length of the Trans-Siberian Railroad. Both sides made pushes to try to shift the borders, but neither side has had success in rewriting geography.

Well, I don't know if that's going to change in the near future. I do know that there's been a lot of new contracts floating around Constantinople for merc work in Central Asia. Some of them are for legit garrison work, but a few I've recognized as front companies for the UGB Border Guards, as well as the MVD. If I know the Russians, they're up to something. Consider yourself warned.

• The word that's been floating around Kaliningrad is that the UGB think that the Siberians have had some sort of internal falling out. From the small databits we sussed out of the UGB systems, something happened last year that shook things up in Yakutsk. That's all I've got; make of it what you will.

- Westend Girl

• I'll bet it's SURGE. All these Awakened folk go on bragging about nature being on their side, but I think they're just as bigoted as anyone else. Serves them right if they got a taste of their own medicine.

- Novichok

• Look to the White Rock for the answer.

- Tsangara

• Huh? What's that supposed to mean? White Rock? Do you mean Tunguska?

- Jaxon

- Frag, I hate it when they get all enigmatic like that.
- FastJack

TOOLS OF THE TRADE

If you're going to operate in the merc world, you have to have at least passing familiarity, if not thorough proficiency, in the equipment we use. Most people tend to focus on the guns and explosives and overlook the other, less glamorous support equipment. Big mistake. If you don't think about the field gear, you won't even be in adequate fighting condition when the shooting starts.

THE GREAT OUTDOORS

Fighting out in the field is nothing like running in the city. Too many times I have seen shadowrunners equipped for a mission like a walk in the city park, only to be taken out of action not by bullets or fireballs, but by hypothermia, malnutrition or Montezuma's Revenge. Any time you go into the wilderness for an extended time, you have to know how to survive out there and prepare accordingly. It doesn't have to wait for a trip to the Mojave, North Africa or Siberia; even this evergreen haven called the Pacific Northwest can be deadly for the unprepared.

Outdoor Equipment

Modern camping gear shies away from heavy, high-maintenance canvas and takes advantage of lightweight nylon, polypropylene and Kevlar weaves. Electric fuel cell and improved battery technology has not only resulted in quieter field generators, but also compact power cells to improve heaters, lights and other powered equipment. With the right equipment, you can make a month-long patrol feel no worse than a few days in the house.

Survival Tents: If you ever find yourself going to Siberia, the Mojave or any other harsh environment, I would strongly recommend you take these along. These single-person pup tents come with a compressed gas cartridge, thus making the tent self-inflatable by jerking the rip cord. Additionally, the tent is insulated and contains a self-powered climate control unit that can either heat or cool the tent (but not both, so you'll have to choose beforehand). Most brands usually say the climate control lasts 48 hours, but with a little judicious rationing, you can stretch it to about three times that duration.

• One other thing Picador forgot to mention is that these tents also come with an emergency radio transponder that helps search-and-rescue teams to locate them. If you're out in the field on a recon or covert op, though, the last thing you want is some emergency transponder giving your position away! As standard procedure, our unit always disables all the emergency transponders except one in the case of extreme emergency.

- Breaker

Rations: Forget the barely-edible canned C-rats and paraffin heaters you see in those old war flatvids. Modern field rations come prepackaged in hermetically sealed plastic, and

some of them are actually pretty decent. (One of our sergeants actually eats these everyday, even in garrison. Yes, I think he's strange also.)

Additionally, practically all rations contain their own internal heating elements, generally activated by exposure to air or adding water into the heating pouch. These heating elements can also be used for other purposes, such as hand warmers, heaters or fire starters. Our company mechanic actually saves these up to dry off the primer cells and ignition switches for our generators and vehicles!

• Here's another trick some veteran mercs know about ration heaters: the water-activated heaters produce hydrogen gas when it reacts with water, so these veterans crumble up the heating chemical and stuff it into a plastic bag or bottle. Add a little bit of water, and you've got yourself an improvised explosive. Most of the time the vets use these "bottle bombs" as a firecracker or smoke bomb to distract the enemy, but a few of the clever ones can whip up an improvised grenade or mine with them.

• Baldwin

Camouflage Equipment

Camouflage is a valuable art that is often poorly practiced. Depending on the circumstances, camouflage-patterned clothing and face paint is simply not enough. Sometimes more specialized camouflage equipment may be required.

"Ghillie" Suits: Sometimes the most fundamental concepts are the most effective. A ghillie suit is a poncho-like cloak that drapes over the entire body. Unlike a regular poncho, a ghillie suit has layers of cloth strips, netting, simulated foliage and other assorted garnishings sewn across the fabric, not to mention additional holes and straps for the wearer to improve upon the pattern. All of these add-ons serve to obliterate the body outline and makes a person practically invisible amongst the terrain when lying still. Field snipers commonly use this suit when they're in place and ready to shoot.

• Yeah, but the main downside to ghillie suits is that they make it almost impossible to move around when wearing one. The best you can do is a slow crawl, and you can forget about running in one of these!

• Longarm

• Not always, depending on the type of ghillie suit you're wearing. Some adventure catalogs offer what's called a stalk-



er suit, as a "lite" ghillie suit. Okay, it's not as good as a full-blown ghillie suit, but it does allow you to make a slow jog while you're wearing one.

• Grognement

• If you can find one, get yourself a ruthenium poncho. It takes the ghillie suit concept one step further and uses ruthenium weaves to literally blend in with the environment. Furthermore, the poncho doesn't have all those gewgaws attached to it to slow the wearer down, but the poncho shape does smudge up the body outline enough to be more effective than a sneak suit. The only down side is availability; you're not going to find a ruthenium poncho in your basic outdoor adventure catalog.

• Bateau

Camouflage Nets: Concealing yourself is all well and good, but if your vehicle, bivouac or emplacement isn't also concealed, it's not going to do you one bit of good. To cover large objects or areas, mercs often use camouflage nets, large diamond or hexagonal-shaped netting with synthetic leafings and foliage sewn in between the gaps. Additionally, camouflage nets also incorporate painted metal reflectors and ther-



mal-baffling materials in their composition, so they're equally effective against technological sensors as they are against the Mark I eyeball.

- The biggest mistake I see made in the field with camouflage netting is that soldiers often drape it over vehicles or tents, way out in the open. Like that's going to help! You need to use poles with spreaders (which come with every netting system) to hoist it over the object you're covering, with at least half a meter of spacing, so as to break up the object's profile.
- Soodan

Web Gear

Web gear: rucksacks, combat vests, load bearing harnesses and other assorted belts, pouches, hooks and loops used for hauling equipment. So basic that they're taken for granted, but if you don't have it, you won't be able to take along the gear you need. Even worse, if you have the wrong kind of web gear, you could lose precious minutes rummaging for the specific equipment you're looking for.

Generally speaking, you should configure your harnesses for the specific mission. In our unit, we prefer combat vests that have very few pockets but lots of pouch loops for hanging ammo and gear pouches. That way, we can add or remove specific pouches as necessary for the upcoming mission.

In our unit, we reserve rucksacks (sometimes known as backpacks in the civilian world) for extended field missions. Though they come in many sizes, our sergeants preach to our troops to carry only a small ruck unless carrying necessary specialist gear. With a large ruck, the temptation is to overload it with excess equipment, which slows you down in combat.

- One other thing to look for in a ruck: a quick-release assembly on the shoulder and waist pads allowing you to drop the ruck on the ground in a split second. Most military rucksacks will have these, but you may not find it on a regular camping backpack in your general sporting-goods store. Believe me, when bullets are flying thicker than tsetse flies in the air, you want to get rid of that excess weight in a hurry!
- Dancin' Hanson

HELL ON WHEELS

Make no mistake, despite all the developments in the past century, combat still comes down to the footsoldier carrying a rifle. But in the past century or so, vehicles have become an indispensable part of modern combat. They carry a lot more equipment than your common grunt, get from point A to point B faster, protect against weapons and the elements and pack one hell of a punch.

When people think about mechanized warfare, they mostly fixate on tanks and t-birds, but in a lot of merc work, the primary vehicle workhorse is the infantry fighting vehicle. A lot of our work involves getting up close and personal, *mano a mano*, with the locals or with the enemy. You just can't do that in a tank or t-bird. When you're trying to flush guerillas out of the woods, a squad of infantry backed up by an armored IFV mounting a chain gun works every time.

Drones are also an important asset. They can get into all those places an IFV or even a jeep can't, but they're still resistant to small arms and can carry those heavy weapons. They also have a lot of drawbacks, too. Their decision-making is pretty lousy, and their skills aren't all that great. You'd be best off using them for laying down suppressive fire. Anything requiring controlled precision fire should stay in the hands of your grunts.

- There's also the electronic warfare problem. A good jammer will cut those drones off from your remote control network, or even worse, turn your own drones against you. If you're going to use drones, make sure you have good ECCM and encryption protecting your network.
- MC Jammer

Artillery

It may not mean all that much to you in the shadows, but to us artillery fire support is crucial. In national militaries, artillery tends to be concentrated at high-level commands, but given the smaller size of merc units, it's been finding its way down to the lower levels, even as far as the company level.

- That's not always the case, but Picador's pointing out a trend that's starting to be popular. Too often merc forces get burned by their government or corporate clients, who promise fire support in the contract but always find some more urgent priority when the fighting gets hot and heavy. A lot of mercs I know are starting to clue in on the merits of having your own artillery, answerable to no one but you.
- Colonel Cobra

One important rule to follow is not to stock up too much on artillery forces. While it's invaluable when needed, battles are still won and lost in the trenches. Most professional militaries usually establish a fixed ratio of one artillery battery (artillery term for company) supporting a maneuver battalion (consisting of three or four armor or infantry companies), about a 3:1 ratio. That's not a bad yardstick to follow, if you ask me.

Because of its sheer size and weight, most artillery inevitably ends up as vehicle-mounted weapon systems. While there are some portable mortar systems out there (like the M-12), the firepower of even a massed platoon isn't sufficient for anything but torquing off the enemy, in my opinion. On the other hand, you don't want too heavy an artillery piece, because mercs inevitably tend to get dropped into the most inaccessible places. An airdrop-capable piece is highly suggested. I would particularly recommend a heavy mortar or light howitzer system (both about 100-120 millimeter caliber). Both sizes are pretty suitable for company or battalion-level operations. Hell, if you've got nuyen to blow, you could even get a section or two to support a platoon operation.

Improved Conventional Munitions: There are lots of different munitions available for heavy artillery, but if you ask me, the best general-purpose, all around use shell would be the improved conventional munition (ICM). When these things are just above their intended target, they burst open in midair, releasing hundreds of miniature submunitions that

scatter and detonate on impact. Unlike conventional high-explosives, which create tremendous blast in the center but only marginal concussive damage further out, the blast damage is applied evenly across the same area. This makes it particularly useful for taking out formations, encampments and other targets where you've got multiple soft targets spread over an area.

- There's also another type of ICM available called the dual purpose Improved conventional munition (DP-ICM). The submunitions in a DP-ICM shell are shaped charges, which maintain a downward orientation by trailing a streamer behind them. They're effective against unarmored or lightly armored vehicles, but they don't do all that much against heavily armored targets like a tank or t-bird.
- Molyneaux

FIRE IN THE HOLE

I suppose there has to be some basis to all the clichés and stereotypes. Much as I hate to admit it, it is true that we mercs handle explosives and demolitions work more often than shadowrunners. Probably has something to do with this delusional conceit about shadowrunning being a quiet profession.

- One of the first mistakes a novice sapper (demolitions specialist) makes is assuming that anything can be blown with more explosives. While this is generally true, there are two things working against this. First, big explosions have big side effects: too much collateral damage can sometimes be worse than mission failure. Second, no matter how much you can haul, you will never have enough explosives to do the job. Being a good sapper means getting the most damage with the least explosives.
- Jackhammer

Bangalore Torpedo: A bangalore torpedo is a pretty useful tool to have for clearing minefields, short of having a combat engineer squad in direct support. Consisting of ten solid explosive cylinders, about 1.5 meters long and only a few centimeters in diameter, these sections are screwed together to the appropriate length, slid into a minefield and then detonated, clearing a path approximately half a meter wide free of mines, concertina and other antipersonnel obstacles.

- Picador overstates the bangalore's capability slightly. While the explosive core of the bangalore has improved over time, so have the resistance of many mines and concertina wire. If there's one thing that these things are absolutely brutal against, however, it's monowire. For all the cutting power it has, monowire doesn't have a lot of resistance to shear stress.
- Drake
- Maybe so, but bangalores are still pretty useful if for nothing else than their improvisation value. Come on, we're talking

about a one and a half meter pipe bomb! The threads on the ends of each section are compatible with plumbing pipe, so you can intersperse with ordinary pipes to create a gap in the explosion. You can even substitute bangalores for regular pipes; on one extraction job we had in a chemical plant, we were able to infiltrate the site the day before as a maintenance team and replaced several sections of piping with bangalores. When we made our run the next night, we detonated the bangalores behind us on our escape route, which tied up the guards and allowed us to make good on our getaway.

- Crazy Hillary

Claymore Mine: This basic fragmentation mine is still a mainstay among combat forces around the world because it's so simple to use. All a soldier has to do is set it in the ground, sight it ("Front Towards Enemy") and set the blasting cap. Then when the enemy walk into the kill zone, all that's required is to squeeze the detonation clacker. Furthermore, the blasting cap uses a standard voltage, so a resourceful soldier can improvise to make a tripwire or hook up to a basic proximity sensor. Claymores can even be daisy chained with others to increase the area of effect.

- Just make sure you're either under cover or a good distance behind the claymore when it goes off. These things have a nasty backblast inside of 16 meters.
- MacDoog

Cratering Charges: These things are heavy, but they're great for tearing up big holes in the ground. Though it weighs in at more than fifty kilos, most of it is taken up by the heavy rocket charge. To use these things, you set up the tripod stand and sling the rocket charge into the harness. Once it detonates, the rocket launches directly into the ground and burrows about 2-3 meters before the time-delay fuse sets off the main charge deep in the ground, resulting in a giant crater between 6 and 8 meters in diameter—very useful for tearing up large sections of roadway and creating tank traps.

- And if you can find enough construction material to turn it on its side, also very useful for busting through reinforced barriers and walls.
- Cherry Bomb

Detonation Cord: Though hardly seen outside of combat engineering or civil demolition circles, det cord is a very basic staple of demolition operations. Basically, det cord consists of a flexible fabric tube filled with high explosives. The real advantage, though, is that det cord is engineered to transmit the detonation wave very rapidly, even faster than ordinary electrical wire. This makes it instrumental if you've got some really complex demolition set-up going; you can't afford to wait even the split section delay between electrical wire and det cord.

Mine Detection Gear: Mine detection gear has changed a lot in the past half century. With the advances in plastic explosives and semi-conductive polymers, ordinary metal detectors



are practically obsolete. Modern mine detection gear involves some sort of spectrographic analyzer that "sniffs" out explosives, aided by some sort of ultraviolet or high-radiation catalyst to encourage outgassing. It's not as accurate as modern security scanners, but it's a lot more portable, and a hell of a lot better than crawling on the ground probing with a long stick.

GAME INFORMATION

This section provides game information and rules for using the material presented in *Soldiers of Fortune*. Included in this section are rules and statistics for new equipment and information and suggestions for gamemasters interested in running a *Shadowrun* merc campaign.

RUNNING A MERCENARY CAMPAIGN

Running a merc campaign is substantially different than an ordinary shadowrunner campaign. Besides the generally higher caliber of weaponry involved, a mercenary run takes place among different surroundings and circumstances than a normal shadowrun.

The major difference between merc runs and ordinary shadowruns is the relative scarcity of human contact during merc runs. Most shadowruns take place in a city or other urban sprawl so shadowrunners almost constantly interact with other NPCs, whether for legwork, obtaining gear or services or regular daily interaction. Mercs, on the other hand, spend most of their assignments in the field and so only see other people on an occasional basis. This can become a challenge for gamemasters, since roleplaying interaction is significantly reduced.

A helpful tool gamemasters may use is to play up the suspense of any would-be encounters, even those that turn out to be false alarms. A lot of combat missions consist of long, boring hours of feeling stressed-out waiting for something to happen, punctuated by brief moments of frenzied activity when something actually *does* happen. Mercs on a mission are out in the field mostly by themselves and in most cases do *not* want to run into anyone else. So whenever something happens, gamemasters should play up the suspense of a would-be encounter. Is it the enemy? Have they spotted the mercs? Are they moving in to attack? Or is it just some damn deer skipping through the woods?

Contracts

Merc work revolves heavily around the contract between the merc's unit and his employer. Unlike normal shadowruns, which generally involve a single job or mission for a limited duration of time, a merc contract can span from several weeks to several months, and during that time there may be multiple separate missions the employer may require the merc to perform. In a merc campaign, a contract can serve as a story arc or mini-campaign, tying several separate adventures together.

Guide Contacts

A guide is a special type of contact unique to merc campaigns. Guides are local residents who know the lay of the land intimately and can help a merc unit function in unfamiliar terri-

tory. Guides can often be more valuable than simple map reading; guides have an intuitive feel for the land and know things that wouldn't appear on a map (like the types and habits of local flora and fauna, attitudes of local villagers, and so on). In some cases, a guide can warn of danger, simply by telling that a particular location doesn't "feel" right. Guides will often have the Sense of Direction Edge and possibly also the Home Ground Edge (see pp. 24 and 18, respectively, *SRComp*).

Guides can also be helpful when it comes to dealing with the locals. They speak the language, but more importantly, they're from *around here*. In the natives' eyes, if the guide has chosen to work with these strangers, then maybe they aren't all that bad after all. A guide can also help introduce merc characters to other local contacts, if necessary.

Uses: Rural contact, can help with navigating an unknown area, interacting with local residents, information and intelligence on activity in a rural region.

Places to Meet: Local villages or towns in the region.

Similar Contacts and Connections: Smugglers, scouts, mercs, tribal people, nomads.

B	Q	S	I	W	C	E	R
4	3	3	5	3	4	6	4

INIT: 4 + 1D6

Dice Pools: Combat 5

Karma Pool/Professional Rating: 2/2

Skills: Athletics 3, Biotech 2, Etiquette 3 (Local Area 6), Navigation 3, Stealth 3 (Wilderness 5), Rifles 3, Survival 4, Unarmed Combat 3

Knowledge Skills: Current Events 4, Local Landmarks 6, Local Politics 4, Native Language 5 (Local Lingo 7), Secondary Language 3, plus two other "Street" Knowledge Skills at Rating 4

Gear: Campaign gear, NavStar GPS, survival knife

NEW EQUIPMENT

The following gear can be found in the possession of mercenaries around the globe. Though shadowrunners sometimes make use of it, many of the munitions are too "heavy" for standard shadowrunning purposes.

Vehicle Weapons

Heavy Mortar: The heavy mortar is a heavier, vehicle-mounted version of the M-12 Portable Mortar System (p. 26, *Cannon Companion*). As with all mortars, the heavy mortar lobbs a 100 millimeter-caliber projectile at high arc; with its extended range, heavy mortars are used almost exclusively in indirect fire mode.

Heavy mortars have a Weapon Value of 4. Each CF of ammunition storage holds 20 mortar shells. A heavy mortar can fire a maximum of 1 round per Combat Turn, regardless of the number of actions available to the firer.

Light Howitzer: The light howitzer is the lightest of artillery cannons, with a caliber ranging between 90 and 110 millimeters. Light howitzers are used exclusively for indirect fire support, but their relatively low fire arc gives them better range than mortars.

VEHICLE WEAPON RANGES

Target Number:	4	5	8	9	
	Range in Meters				
	Short	Medium	Long	Extreme	Scatter
Heavy Mortar	200–800	801–2,000	2,000–6,000	6,001–8,000	3D6 x 5 meters
Light Howitzer	0–1,000	1,001–3,500	3,501–7,500	7,501–12,500	3D6 x 10 meters

Light howitzers have a Weapon Value of 6. Each CF of ammunition storage holds 10 howitzer shells. At least 2 CF must be dedicated to ammunition storage.

Ammunition and Explosives

The following ammunition types are available for both heavy mortars and light howitzers. Shells are not interchangeable between systems; they must be designated as either mortar or howitzer shells when purchased.

Antipersonnel Shell: This fragmentation shell is very effective against troops out in the open. Apply the rules for flechette ammunition (p. 116, *SR3*) to this round.

Anti-vehicle Shell: This smart shell homes in on vehicles and fires an explosively-formed penetrator when in proximity of the vehicle. They use the anti-vehicular ammunition rules.

High Explosive Shell: This is a standard explosive shell, designed for general mass destruction.

ICM Shell: The improved conventional munition (ICM) mortar round dispenses small submunitions when above its target. When this round explodes, apply the same damage code on all targets within a 20-meter radius of the impact point.

DP-ICM Shell: The dual-purpose improved conventional munition (DP-ICM) is based on the ICM, except that it uses shaped-charge submunitions effective against vehicles. As with the ICM round, the DP-ICM inflicts the same damage code on all targets within a 20-meter radius of impact. Vehicles do not reduce the Power or Damage Level when attacked by a DP-ICM round, but they do gain the benefit of their full Armor rating.

Jammer Shell: The jammer shell doesn't contain explosives, but instead carries a payload of jammers and ECM for electronic warfare. The jammer shell can be set to jam standard radio communications (see *Jammers*, p. 291, *SR3*), sensors (see *Electronic Countermeasures*, p. 138, *SR3*), or rigger remote control networks. Jammer shells have a Rating of 4 and a Flux of 8. They affect a spherical area with a radius equal to 2D6 meters times the number of successes generated on the Gunnery Test, plus 10 ([2D6 x successes] + 10); systems out-

side this radius are unaffected. Jammer shells affect all transmissions of its type, whether friend or foe.

Seeker Shell: Seeker shells are sophisticated rocket-like devices capable of homing in on a target marked by a laser, microwave or radar target designator. Seeker shells enable the character using a mortar or howitzer to take advantage of target designators for indirect fire (see *Indirect Fire*, p. 99, *Cannon Companion*). Every mortar or howitzer shell listed is also available as a seeker shell.

Solar Shell: The solar shell aids in night maneuvers by creating a bright white flash that burns for 5 minutes, making the area brighter than full daylight and making it difficult for anyone in the immediate vicinity to see.

When the mortar strikes, everyone looking in the direction of impact suffers a +8 target number modifier for any vision-required Success Tests (including combat). Reduce this modifier by -1 per 10 meters from the point of impact; flare compensation reduces the modifier by 2. This effect is reduced by -2 per full Combat Turn.

The bright light produced by the round will negate all visibility modifiers for darkness out to a 100-meter radius, but anyone looking directly towards it will suffer a +4 glare visibility modifier (+2 if the viewer has flare compensation). The round will burn out after 5 minutes.

Smoke Shell: These rounds deploy a 30-meter radius smoke cloud that lasts for 4 minutes. This smoke obscures standard vision; apply vision modifiers to relevant tests (see p. 106, *Cannon Companion*, for smoke rules). The IR variant produces smoke with hot particles that obscure thermographic vision as well.

Firearm Accessories

Ammunition Pouches: Ammunition pouches are weather-durable pouches that can be easily attached or detached to combat vests or equipment harnesses. Gamemasters may use them to limit the amount of ammunition readily available to characters. A pistol pouch holds two pistol or SMG clips, a rifle pouch holds three rifle clips, while a shotgun pouch holds

Vehicle Weapon	Ammo	Mode	Damage	Weight	Avail.	Cost	Street Index	Legality
Heavy Mortar	1	special	As mortar	150	15/21 days	10,000 ¥	3	1-K
Light Howitzer	1	SS	As shell	1,000	—	100,000 ¥	—	1-K

twenty shotgun rounds. Each ammunition pouch takes up one harness slot.

Combat Vest: A combat vest is a custom-designed vest made for attaching equipment and ammunition pouches for ready access. Gamemasters may use combat vests to limit the amount of ammunition and equipment carried. Combat vests possess twelve harness slots and may not be worn in conjunction with security or military grade armor.

Load-bearing Harness: A load-bearing harness consists of a large belt and suspenders worn atop field gear. Gamemasters may use harnesses to limit the amount of ammunition and equipment carried. Load-bearing harnesses possess eight harness slots and may not be worn in conjunction with security or military grade armor.

Explosives

Bangalore Torpedo: A bangalore torpedo consists of ten sections of explosives formed into a solid 1.5-meter cylinder. Any and all sections may be screwed together to form a longer length of detonation. This creates a lozenge-shaped impact zone centered along the length of the torpedo. This is particularly useful for bypassing barriers, by drilling a hole and sticking the torpedo through to the other side.

Claymore Mine: A claymore mine is a fragmentation mine that is so simple to use that it is standard issue amongst soldiers and mercs alike. A claymore mine primarily affects all targets within a 60-degree frontal arc. Reduce the Power of the claymore against targets within the blast radius who are outside the 60-degree arc by half (round down).

Cratering Charges: A cratering charge consists of a tandem explosive suspended on a tripod. When detonated, the first charge drives the explosive into the ground. The second charge detonates the buried charge, creating a large crater. Used against roadways, it creates a crater with a diameter of 5

+ (1D6 ÷ 2, round up) meters and a depth half the diameter. Additionally, it tears up the ground in an additional radius equal to half the crater's diameter around the crater's rim; treat as uneven ground for movement purposes. Ground vehicles attempting to drive over or around the crater must make a Crash Test to avoid falling into the crater.

Detonation Cord: Detonation cord is a flexible fabric tube filled with plastic explosives. Det cord is well-known for transmitting explosive shockwaves very well, even faster than electrical wire. If used as an explosive, detonation cord has a damage code of 12S equidistant along its length.

Mine Detection Gear: Mine detection gear consists of spectrographic and radiological analyzers configured to detect explosives, particularly the plastic explosives commonly used in mines. Mine detection gear uses the same rules as chem-sniffers (p. 90, *SRComp*), but increase their rating by 1 when trying to detect mines. Against all other explosives, reduce their rating by 1.

Survival Equipment

Camouflage Nets: Camouflage nets protect vehicles, encampments and other large objects or areas. People and objects underneath a set up camouflage net receive a +4 modifier against Perception Tests, and a +2 Signature modifier against sensors. Camouflage nets come in the shape of 10-square meter diamonds. Setting up a camouflage net takes 5 minutes per diamond involved.

Camping Gear: Camping gear consists of tents, sleeping bags, canteens, mess kits and other tools necessary for living outdoors in relative comfort. Having adequate camping gear on hand for all characters reduces the target number for Survival Tests (see p. 106, *Target: Wastelands*).

Equipment Pouches: Equipment pouches consist of weather-durable pouches that can be easily attached or

Mortar/Howitzer Shell	Concealability	Damage	Blast	Weight	Availability	Cost	Street Index	Legality
Anti-Personnel	2	24D (f)	-1/m	12	24/3 wks	500¥	4	1-K
Anti-Vehicle	2	20D	-8/m	12	24/4 wks	500¥	5	1-K
High Explosive	2	6LN	-1/m	12	24/3 wks	500¥	4	1-K
ICM	2	4LN	Special	12	24/4 wks	750¥	5	1-K
DP-ICM	2	4LN	Special	12	24/4 wks	750¥	5	1-K
Seeker	—	As round	As round	+2	+2/+1 wk	+2,000¥	+1	As round
Smoke	2	—	—	12	18/3 wks	300¥	3	1-K
Smoke (IR)	2	—	—	12	18/4 wks	400¥	3	1-K
Solar	2	Special	Special	12	18/4 wks	400¥	3	1-K

Explosive	Concealability	Damage	Blast	Weight	Availability	Cost	Street Index	Legality
Bangalore Torpedo	3	20D	-1/5 m	6 kg/section	14/2 wks	25,000¥	—	1-J
Claymore Mine	6	16D	-1/m	1	8/2 wks	200¥	2	1-J
Cratering Charge	—	special	special	50	14/2 wks	50,000¥	3	3-J
Detonation Cord (30 meters)	3	12S	-1/m	1	14/2 wks	2,500¥ per	2	3-J

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Mine Detection Gear	—	1.5	Rating/72 hrs	12,500¥ x Rating	2	8P-U

detached from combat vests or equipment harnesses. Gamemasters may use them to limit the amount of equipment readily available to characters. A small pouch contains approximately 5,000 cubic centimeters (about 100 ECU, or 0.04 CF), while a large pouch holds approximately 12,500 cubic centimeters (about 250 ECU, or 0.1 CF). A small pouch takes up one harness slot, while a large pouch takes up two harness slots.

Field Rations: Field rations are a tremendous improvement over the measly ration bars in a basic survival kit, since they consist of complete, filling meals preserved in hermetically sealed bags. Additionally, field rations in the 2060s incorporate their own integral heater pack, which ensures that meals are always hot. Having adequate rations to feed all characters reduces the target number for Survival Tests (see p. 106, *Target: Wastelands*).

Ingenuous characters may use the heater pack in a field ration to create an improvised explosive. To do so, make a Demolitions Test against a Target Number of 4. If successful, the character creates a "bottle bomb" explosive, with a Power equal to 3 plus the number of successes (maximum Power 10), a base Damage Level of M, and a Power reduction of -1 per half meter. This "bottle bomb" explosive may only be triggered either by impact or by heat.

Military Rucksack: A military rucksack is a backpack especially designed for mercs and soldiers. Gamemasters may use them to limit the amount of equipment readily available to characters. A small rucksack holds approximately 15,000 cubic centimeters (0.2 CF), while a large rucksack holds approximately 65,000 cubic centimeters (0.5 CF). Military rucksacks employ a quick release mechanism that allow a character to ditch it quickly; doing so requires only a Free Action. Unslung them normally requires a Complex Action.

Civilian versions are available without the quick release mechanism and cost only half the listed amount.

Self-inflating Tent: A self-inflating tent is a single-person pup tent equipped with a gas charge for self-inflation. Additionally, it contains its own integral climate control unit, good for 48 hours. A character may increase the duration by making a Survival (4) Test. Each success increases the climate control duration by 12 hours, for a maximum of 144 hours (6 days). A self-inflating tent counts as a full set of camping gear for a Survival Test, and the Climate Control modifier applies as long as the tent's climate control is functional.

NEW VEHICLES

The following military vehicles may find use in a mercenary setting or campaign.

BAE-Alvis Agincourt Mortar Carrier

Under Britain's regimental modernization program in 2058, the Ministry of Defense contracted BAE to build a new mortar carrier for their armored and mechanized infantry regiments. In response, BAE's Alvis subsidiary unveiled the Agincourt, one of the first few armored vehicles to incorporate an electric fuel cell engine.

Similar Models: Mesametric Quana, Mitsubishi Type 621vs, United Defense Javelin

Other Features: Medium turret (heavy mortar, 5 CF Ammo Bin), Electronics port (with Rating 3 radio)

Eurocopter Tiger

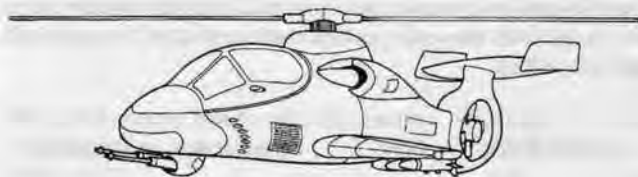
The German and French Tiger, long since the typical European combat helicopter, has begun to show its age. Its outmoded design has seen it phased out of all but a few armies. The approximately 1,800 models from the last series (2007/A4, built from 2027 to 2034), however, are still flight capable and have made their way onto the open market. Most are in use with corporate troops that are limited by small budget allocations.

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Ammunition Pouches						
Pistol	8	—	2/12 hrs	8¥	1	Legal
Rifle	8	—	2/12 hrs	11¥	1.5	Legal
Shotgun	8	—	2/12 hrs	8¥	1.5	Legal
Camouflage Netting (10 sq. meters)	—	5	4/48 hrs	150¥	1	Legal
Camping Gear						
Tent	4	1.5	2/12hrs	275¥	1	Legal
Canteen and Mess Kit	8	0.1	2/12 hrs	15¥	1	Legal
Sleeping Bag	4	1.5	Always	175¥	1	Legal
Combat Vest	—	—	2/12 hrs	190¥	1.5	Legal
Equipment Pouch						
Small	8	—	2/12 hrs	12¥	1	Legal
Large	6	—	2/12 hrs	30¥	1	Legal
Field Rations (self-heating)	8	0.1	4/48 hrs	5¥	1	Legal
Load-bearing Harness	6	—	4/48 hrs	35¥	1.25	Legal
Military Rucksack						
Small	—	0.5	2/12 hrs	110¥	1	Legal
Large	—	0.5	2/12 hrs	140¥	1	Legal
Self-inflating Tent	2	4	4/48 hrs	500¥	1	Legal



Similar Models: Embraer-Dassault DASS-49 Mégère.

Other Features: Crash Cage, Datajack Port, Drive-by-Wire 1, ECM 2, ECCM 2, 2 External Fixed Hardpoints (located under chin), Medium Launch Control System, Rigger Adaptation, 2x3 Rocket Mounts (Wingtip).



Messerschmitt-Kawasaki Sperber

This newest entry to the Messerschmitt-Kawasaki helicopter family traces its design to the CHX-2050 joint study performed between Germany and Japan to develop a universal-frame, configurable attack/support helicopter usable for both military and police work. Its high price tag, however, makes it undesirable for all but the most critical security work, making it a much more common sight in the military.

Similar Models: Embraer-Dassault DASS-55c Faucon, Toyota-Singarms Kaitou.

Other Features: ECM 2, ECCM 2, 2x3 External Rocket Mounts (Wingtip), Medium Launch Control System, Mini-turret (located under chin) (security variant); ECM 5, ECCM 5, Thermal Baffles 1, 4 External Rocket Mounts and 1 Fixed Firmpoint on each wing (8 mounts and 2 firmpoint total), Medium Launch Control System, Mini-turret (located under chin) (military variant).

Naval Technologies Vodlanol Assault Hovercraft

The Vodlanol Assault Hovercraft is the latest development to come out of Yamatetsu's Naval Technologies division. Designed for amphibious assault operations, this hovercraft sports heavy armor and sophisticated electronics. Naval Technology already has several orders placed, primarily with the Russian Naval Infantry as well as the Combat, Inc. mercenary organization.

Similar Models: Esprit Phoque, GMC Sea Lion, Shiawase Great White

Other Features: EnviroSeal (Gas with Cabin Overpressure), Radar Absorbent Materials 1 (factored in), Electronics port (with Rating 3 radio), Thermal Baffles 1 (factored in); on personnel carrier version: 2 Ring Mounts; on fire support version: Small Turret (5 CF Ammo Bin), Medium Launch Control System, 8 Internal Missile Mounts

Nizhnyi BMV-2 Low Altitude Assault Vehicle

The BMV-2 is an upgrade over the BMV-1, Russia's first attempt at a low altitude t-bird during the Euro-Wars. Despite some impressive trial runs, the BMV-1 had exposed thrust vectoring ports, making them notoriously easy to detect and target on aerial scanners, and resulting in heavy casualties amongst Russia's airborne forces. The BMV-2 corrected most of the BMV-1's fatal flaws and later went on to serve in the Russian military until the 2050s. Though retired from active service amongst the Russian military, the BMV-2 can still be found among many merc forces and Third World governments around the world.

Similar Models: GMC Thunderbird, Saab Viggen 406

Other Features: Small Turret (10 CF ammo bin), Medium Launch Control System, 4 Internal Missile Mounts

Ruhrmetall Falkener Heavy Air Defense Vehicle

The Falkener (Falconer) is a tracked air defense vehicle designed to provide anti-aircraft fire support to armored and mechanized forces. Built on the same chassis as Ruhrmetall's Hellhound Infantry Fighting Vehicle, the Falkener strips out most of the Hellhound's secondary armament in favor of eight Vogeljäger SAMs. Ruhrmetall retained the main gun, the Vigilant autocannon, and upgraded its mount to be AA-capable, thus giving it both a secondary antiaircraft weapon as well as some form of ground defense.

Similar Models: Mesametric Sidewinder, Mitsubishi Type 189

Other Features: ECCM 6, ECD 4, EnviroSeal (gas with cabin overpressure), Medium Turret (Vigilant autocannon on AA-mount, 15-CF ammo bin, medium launch control system, 8 internal missile mounts), Radar Absorbent Materials 1 (factored in), Eelectronics Port (with Rating 3 radio), Thermal Baffles 1 (factored in).

Ruhrmetall KM SPz Frettchen Support Tank

In war, information is everything; the Frettchen supplies that. The concept of this support tank is to infiltrate behind enemy lines and spy on enemy movements. The Frettchen may be an expensive purchase, but its value exceeds its price. Standard armament for defense includes two Vanquisher heavy miniguns. BattleTac and surveillance systems may be integrated as desired.

Similar Models: Toyota-Singarms Kamenoko, UCAS A925 Ghost

Other Features: Amphibious Operation 3, Contingency Maneuver Controls 3, Drive-by-Wire 2, ECD 6, ECCM 9, ED 6, EnviroSeal (gas, water, engine), Large Smoke Projector, Life Support (100 man-hours), Medium Turret (AA capable, 6 CF for 6,000 rounds of HMG ammo), Radar Absorbent Materials 3, Rigger Adaptation, Ruthenium Polymer Masking (with 40 picture files), Smart Materials.

Ruhrmetall KM Keller A4 Assault Tank

Speed is decisive not only in the boardroom, but also on the battlefield. A typical example of this is the Keiler A4 light assault tank from Ruhrmetall. Though the base design originated during the Euro-Wars, even today the Keiler is still a worthy segment of ground forces. Standard armament includes a medium railgun and choice of combat laser or HVAR mounted in a micro-turret atop the main turret. ECM and other combat electronics are available at extra charge.

Similar Models: Toyota-Singarms Kaitou, Saeder-Krupp Landsknecht, Nizhinyi Tagil Inc. T-030 Dikaja Koschka.

Other Features: Amphibious Operation 3, Contingency Maneuver Controls 9, Drive-by-Wire 1, EnviroSeal (gas, water, engine), 2x4 External Rocket Mounts, Large Smoke Projector, Large Turret (1.6 CF ammo bin for 160 railgun slugs), Life Support (100 man-hours), Medium Launch Control Systems, Micro-turret (AA capable, Recoil Adjustment 4, 0.5 CF ammo bin for 5,000 rds HVAR ammo), Rigger Adaptation, Smart Armor System, Smart Materials.

Ruhrmetall KMA7-C Leopard III Heavy Tank

For the 30-year anniversary of the Leopard III, Kraus-Maffei (subsidiary of Ruhrmetall) presents the KM A7-C Leopard III, one of the few state-of-the-art heavy tank models on the world market. The Leopard III may be configured as

desired, but standard armament normally includes a heavy railgun and HVAR or combat laser on a separate micro-turret.

Similar Models: Nizhinyi Tagil Inc. T-047 Mstitel, Toyota-Singarms Kikkou, Dassault AMX 72 Hyena, UCAS A31-2 Schwarzkopf.

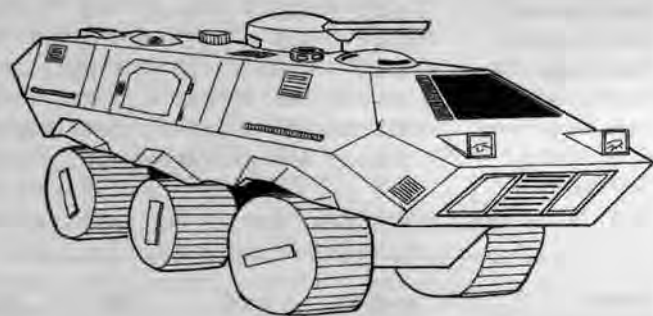
Other Features: Contingency Maneuver Controls 6, Drive-by-Wire 2, Rigger Adaptation, EnviroSeal (gas, water, engine), 2x4 External Rocket Mounts, Extra-large Turret (0.8 CF Ammo Bin for 80 railgun projectiles), Large Smoke Projector, Life Support (150 man-hours), Medium Launch Control System, Micro-Turret (AA capable, Recoil Adjustment 4, 1 CF Ammo Bin for HVAR ammo), Radar Absorbent Materials 2, Smart Materials, Thermal Baffles 2, Turbocharging 1.

Ruhrmetall Vogelhund Light Air Defense Vehicle

Ruhrmetall developed the Vogelhund (Birdhound) concurrently with the Falkener. Fitted in a standard 4x4 utility truck, the Vogelhund was primarily developed to provide aerial defense for rear-echelon support areas, but the Vogelhund has also found popularity with light motorized merc infantry units as well.

Similar Models: General Motors Condor, Keruba Daikyu

Other Features: ECCM 4, ECD 3, Small Turret (2 medium launch control systems, 8 internal missile mounts), Radar Absorbent Materials 1 (factored in), Electronics Port (with Rating 3 radio), Thermal Baffles 1 (factored in).



Ruhrmetall Wolf II AFV Armored Personnel Carrier

This six-wheeled combat vehicle, popular with MET 2000, has seen action in India and the Ukraine. A modular design, this airdrop-capable vehicle has seen many configurations: troop transport, air defense vehicle, medical transport, mobile staff command post, even a light tank! Listed statistics indicate base configuration only—configure as desired!

Similar Models: Nizhinyi Tagil Inc. BMP-052 Napadatel, Toyota-Singarms Kannka.

Other Features: EnviroSeal (with gas seal and cabin overpressure), Life Support (60 man-hours), Runflat Tires, Small Turret (AA capable), Thermal Baffles 2, Turbocharging 2.

Steyr-Daimler Kreuzritter Self-Propelled Gun

The Kreuzritter (Crusader) is a light self-propelled howitzer system built for air-droppable deployment. Its low profile and modular subcomponents make it easy to break down for loading onto cargo transport aircraft. As such, it is frequently seen among light and medium merc forces.

Similar Models: Panhard-Renault Trebuchet, Saab BvC 206s, Ares Excalibur

Other Features: EnviroSeal (gas with cabin overpressure), Medium Turret (Light Howitzer, 10 CF Ammo Bin), Electronics Port (with Rating 3 radio)

United Defense Semaphore Mobile Command Center

The Semaphore is a revolutionary development in military command and control. In addition to the newly-developed electronic deception and counter-deception systems, it also incorporates an integral remote control deck and rigger protocol emulation module, allowing it not only to command military drone networks but also to wage electronic warfare against enemy networks.

Similar Models: Ruhrmetall Hussar, Norinco YW 374T, Esprit Commandant

Other Features: ECM 8, ECCM 8, ED 5, ECD 6, Electronics Port (with Remote Control Deck 6, Rigger Protocol Emulation Module 6, Signal Amplifier 6), Remote Control Encryption Unit 6, Small Remote Turret (2 CF ammo bin), 4 additional electronics ports

Model	Hand	Speed	Accel	Body	Armor	Sig	Auto	Pilot	Sensor	Cargo	Load
BAE Agincourt	4/4	80	6	7	6	5	3	—	0	48	1,000
Eurocopter Tiger	3	300	21	5	5	3	3	—	5	3	1,600
M-K Sperber											
Security	4	350	32	5	5	4	3	—	5	5	880
Military	4	350	32	5	9	5	3	—	6	2	580
N. T. Vodiano											
Personnel Carrier	4	150	10	5	6	4	3	—	4	42.5	2,400
Assault Craft	4	150	10	5	6	4	3	—	4	26.5	2,375
Nizhinyi BMV-2	3	250/750	40	6	9	3	2	—	4	27.5	2,375
Ruhr. Falkener	4/4	90	7	7	6	4	2	—	8	22.5	1,010
Ruhr. Fretchen	4/4	85	6	10	22	11	2	—	10	10	1,445
Ruhr. Keiler A4	4/4	120	10	10	28	2	2	—	7	12	1,775
Ruhr. Leopard III	4/4	90	8	12	40	4	2	—	8	33	2,095
Ruhr. Vogelhund	4/3	120	9	4	3	2	2	—	8	7.5	253
Ruhr. Wolf II AFV	3/5	105	8	6	12	2	2	—	—	9	900
S-D Kreuzritter	5/5	75	6	7	6	2	3	—	2	16	2,000
U. D. Semaphore	4/4	90	7	7	6	4	4	—	7	18.75	3,507

Model	Seating	Entry	Fuel	Econ	S/B	L/T	Chass	SI	Avail	Cost
BAE Agincourt	1+1+2b	1h+1h+1r	EC (200 PF)	1.5 km/PF	—	—	APC (Track)	3	13/13 days	256,700¥
Eurocopter Tiger	2	2	Jet (3,000 l)	0.3 km/l	—	VTOL	Attack Hel.	3	—	982,500¥
M-K Sperber										
Security	2	2d	Jet (3,500 l)	0.3 km/l	—	VTOL	Attack Helicopter	2	—	1,123,250¥
Military	2	2d	Jet (4,500 l)	0.3 km/l	—	VTOL	Attack Helicopter	3	—	1,380,000¥
N. T. Vodiano										
Personnel Carrier	1+2+2b+2b	1h+2h+1r	Jet (500 l)	0.5 km/l	—	—	Lg Hover	3	24/24 days	468,600¥
Assault Craft	1+2+2b+2b	1h+1h+1r	Jet (500 l)	0.5 km/l	—	—	Lg Hover	3	25/25 days	489,600¥
Nizhinyi BMV-2	1e+2e+2b+2b	1h+2h+1r	Jet (7,500 l)	0.05 km/l	—	VSTOL	T-bird	3	NA	1,844,750¥
Ruhr. Falkener	1+2+1b	1h+2h+1r	D (250 l)	2 km/l	—	—	APC (Track)	3	31/1 month	619,600¥
Ruhr. Fretchen	4	2h	FC (600 PF)	1 km/PF	—	—	Med. Tank	4	—	16,800,000¥
Ruhr. Keiler A4	4	2h	Jet (1,200 l)	0.6 km/l	—	—	Med. Tank	4	—	4,600,000¥
Ruhr. Leopard III	3	2h	D (1,200 l)	1.8 km/l	—	—	Hvy. Tank	4	—	7,290,000¥
Ruhr. Vogelhund	2+1	2d+1t	D (100 l)	6 km/l	—	—	SUV	3	13/13 days	257,000¥
Ruhr. Wolf II AFV	6	1d + 1h + 1x	D (800 l)	3 km/l	—	—	APC (wheeled)	3	26/26 days	332,200¥
S-D Kreuzritter	1+1+3b	1d+1h+1x	D (200 l)	2.5 km/l	—	—	APC (Track)	3	14/14 days	279,400¥
U. D. Semaphore	1+2+1+2	2d+1h+1x	D (250 l)	2 km/l	—	—	APC (Track)	3	NA	1,196,500¥

KEEPING THE RABBLE OUT



I never cease to amuse me that the same corps that find it so necessary to support and utilize a thriving shadowrunner subculture are also consistently devising ways to deter shadowrunners—and making a profit off it, of course. It's been a while since we here on Shadowland have taken a look at the latest schemes and tech the corporate security boys have prepared for us. So when this 2063 catalogue from that Motor City security firm found its way into my mailbox, it was a natural choice for this SOTA update. A lot of this is old news, but a refresher course never hurts, and there's enough new data to pay attention to—the state of the art waits for no one in the shadows. It's oriented toward the corporate management crowd and gated community association set, of course, so flip on your corpspeak filters.

I've thrown in two little somethings after the catalogue to balance the perspective. First is a piece from Grey Knight, an Ares colonel who doesn't mind giving us plain talk on how security specialists like himself pull all of these security devices into a working system. Second is an exposé on the tricks and methods that B&E experts use to bypass all of this drek and get the goods anyway.

• Captain Chaos

Transmitted: 05 January 2063 at 09:54:40 (PST)

CORPORATE SECURITY

Welcome to Knight Errant's Security Catalogue, 2063! In the ever-evolving world of strategic asset protection, corporate managers must keep pace with advances in security in order to keep unauthorized visitors to a minimum. Criminals slow down for no one, but Knight Errant is always one step ahead of the technology curve, providing our customers with the very latest in intrusion prevention and detection technology. The new year brings some exciting new products in our Barrier, Sensor and CCSS Infrastructure product categories. Also this year, we offer expanded Integration Services to advise our customers how to construct the security plan that fits your budget and needs, in addition to training your staff and administration in security procedures. Knight Errant still offers the highest quality staffing solutions to provide you with all of your security needs!



• Ugh, I know half of you are probably asleep already, but did anyone catch that bit about fitting your budget? Aside from metahuman sloppiness, that's the weak link in the corpsec defense. Most corps don't have wads of cred to blow on nova electronics and gadgetry, much less maintain it all regularly or update it to counteract the latest shadowrunner tricks. The bottom line counts, chummer. On the flip side, most of the places that we really, really want to get into will splurge for the big, nasty, shadowrunner-killa systems. It's never easy, eh?

• Murphy

PHYSICAL SECURITY

The foundation to every good security system is construction that helps prevent criminal elements from accessing your facility. No single system alone can thwart unwanted intrusions, but when combined with Knight Errant's expertise in installation and training, your facility can deter most, if not all, criminals from their illegal aspirations. Perimeter fencing, exterior and interior lighting, specialized exterior and interior wall construction, security doors and a variety of locking mechanisms meld efficiently to create a barrier to both the criminal element and wayward employees.

Landscaping

Your security plan should take into account the local geography outside your facility. If Nature fails to provide defensive measures, Knight Errant can. Space permitting, lakes, tank traps, and artificial hills and gullies can be added to keep intruders from getting close. These features can be used to conceal gun ports, drones, sensors, tiger-pits and tripwires. Unrestricted clear-fire zones can also be constructed for increased access control.

Fencing

The first segment of Knight Errant's security plan is a good perimeter. Chain link fences provide an optimum price-performance point for perimeter defense in a variety of roles. The ability to see through the chain link fence to the area beyond your facility is a good deterrent for mischief-makers, allowing security to keep an eye on anyone approaching the facility.

Knight Errant fencing is manufactured from premium high-quality alloy or electrically conducting densiplast. The spacing between links is optimized to prevent even slighter metahumans from using the links as footholds. Standard fencing stands 3.5 meters tall, and we recommend a bottom clearance of no more than 2 centimeters from the ground. In particularly sensitive areas, the bottom of the fence should be buried underground to impede both wildlife and criminals, with at least 3 meters remaining above ground level to impede taller metahumans from easily climbing over the top. Culverts are added to prevent washout channels from developing underneath the fence.

Extra defensive features can be applied to Knight Errant fencing, such as concertina or barbed wire. Attached to the top of the fence at a 45-degree angle away from the facility to be protected, "razorwire" provides a significant deterrent to anyone attempting to climb over the fence. Monomolecular wire can also be employed at high-threat areas as a more effective deterrent to intrusion. All wire can also be electrified, and Knight

Errant will even hook it up to a separate power line from the fence in case saboteurs disable the line servicing the fence itself. Low power levels serve as an adequate warning, but lethal voltage should be used with care due to legal concerns. Finally, proximity tripwires can be applied to detect bypass attempts and trigger active security measures.

• Monowire is a "deterrent?" Is that corpspeak for "No fraggin' hands left?"

• Left Hand Lucky

• Watch that electric wire—some corps use a switchable voltage. It's low when you first cross the fence, easily overcome with a rubber mat. But on the way out, after you've tripped an alarm or three, it'll fry you.

• Hghwire

Walls

Knight Errant offers a wide selection of exterior walls, from inexpensive plasticrete to intermediate concrete to the expensive steel-reinforced concrete. Exterior walls can be constructed with varying thickness to meet your specific needs, up to and including defense against terrorist car-bomb attacks. Concentric walls with staggered entry points are suggested for greater security.

• Ares Industrial sells plasticrete under the Plascrete brand name. There are several knock-off versions, mostly from PacRim companies, which are much easier to climb or demolish. Some cheaper plasticrete will actually dissolve if sprayed with the right solvents, just like Plastisteel-7.

• Al

• Staggered entry points means no ramming through the high security gates, and no easy burn-rubber-at-high-speed escapes. And they're not kidding about defending against explosives—KE uses angled wall bases and even blast plating in the real high-end stuff. Nothing ruins your day faster than the shockwave from a few kilos of shaped C-12 being blasted right back at you.

• Drive-By

• Luckily, employees tend to have reservations about working in environments that resemble prisons, so a lot of corps skimp in this area. But the smart ones just pretty it all up with flowers and sculpture and scenic landscaping.

• Midnight Gardener

Interior wall construction does not need to conform to the same standard as exterior walls. Knight Errant utilizes 1 centimeter ballistic weave lined wallboards that minimize collateral damage from a firearms violation. This provides excellent protection to both equipment and personnel.

• Note which one comes first.

• Seenik





• Hey, at least they're honest. Rescan the stats on that wallboard, though. Add in both sides of the wall and that's 2cm of ballistic weave plus however many centimeters of insulation, pipes, ductwork and wiring. It might as well be made of plasticrete for all the effect bullets will have on it.

• AI

Lighting

Proper exterior illumination is an often overlooked but essential part of security. Knight Errant offers six styles of lighting, covering a range of tasks and areas of the light spectrum.

• Lights? What's the point of this junk?

• Farkman

• The second rule of not being seen is knowing how others can see you. How a corp lights up that research lab will influence how you disguise your entry.

• Highwire

All of the following styles come in handheld, portable floodlight and fixed floodlight assemblies. Some are also available in weapon-mounted varieties.

Polls™ Incandescent: Perfect for task and ornamental lighting.

Citizen™ Fluorescent: Energy-efficient corporate and business lighting.

Vibrance™ Gas-Discharge: Long-term, high-wattage exterior lighting.

Daylight™ Halogen-Quartz: Premiere high-wattage lighting for both indoors and out.

Nightshot™ Active Infrared: Unobtrusive security lighting for augmented vision and sensors.

Spectra™ Ultraviolet: Forensic and security lighting, perfect for catching dye-marked trespassers and locating fingerprints and biological evidence.

• Watch out for those Daylight lamps. Some sadistic fragger had one of these concealed in a room next to the access panel I was cracking. When a sensor was tripped (hey, I didn't do it), this little slitch came on and blinded me despite my flare-comps. Good thing my buddy dragged me out; I was still seeing spots a week later.

• 3I Blind

• Active Infrared lights work both ways. Trolls and dwarfs will see the place like daylight. And what sammie worth his salt doesn't have a thermo package with his cybereyes?

• Highwire

• Want to hear a neat trick? Infrared works on a different part of the spectrum, right? Well it just so happens that certain surfaces that aren't reflective to normal vision are reflective on the infrared spectrum, so they work like a mirror—but only if you have thermographic vision. I found this out when we hit a facility that had lined every corner with infrared-reflective boarding. All of the

guards had thermo, so they could see us coming from around the corner. Luckily, we had a troll in our team who picked up on this real fast and used it to her own advantage.

• Angler

Exterior lighting should be placed within the perimeter of the facility, targeted away to give security advance warning of potential intruders. Properly placed exterior lighting can deter intruders from approaching restricted areas.

Lighting Switches

Security lighting can be controlled with several mechanisms: photoelectric, timer switches, electronically operated or manual switches. Area effect lighting is best enabled via photoelectric switches, which will turn them on when the ambient light reaches a certain level. This provides some of the more powerful lamps with the long warm-up time they need.

Timed switches can also be utilized on exterior lighting but suffer the disadvantage of susceptibility to tampering via control circuits and/or power loss. These switches are best utilized in conjunction with more discreet lighting technology around areas that have a regular schedule of activity, such as a loading dock illuminated by a timed incandescent lamp for delivery hours and continuously lit by an active-infrared lamp. Electronically operated switches can be controlled either via a secured Matrix connection or by the recommended closed-circuit simsense system network.

Electronic switches are flexible, able to be pre-programmed to activate on certain conditions or activated on command by security, but can be subverted by hostile deckers or riggers. Electronic switches are best utilized on emergency lights or to indicate a security violation, and can be tripped automatically or by remote security command. Manual switches are the most vulnerable to tampering; they require the most intervention to activate and are best used on task-specific lighting, such as guard-operated floodlights, indoor lighting and handheld lamps.

• You can deck electronic and timed switches that are hooked into the Matrix. Of course, the real trick is finding which host has them slaved to it. Not all switches are connected to the public grid.

• Highwire

Windows

Windows are a common security flaw that tend to draw those bent on mischief. Knight Errant solves this problem by securing windows and their frames with alarms and damage-resistant materials.

In addition to ballistic and armored glass, polycarbonate glazing is also available to reinforce windows. All glass varieties crumble to prevent injuries from flying shards and can be outfitted with wire mesh to hold the glass together even if the windows is broken. All glass windows can be one-way coated (opaque to the outside) to prevent the magical targeting of personnel inside your facility.

Knight Errant also offers transparent polymer and laminated polymer window designs that offer the breaking resistance and



stopping power of armored glass with a lighter weight. Photovoltaic densiplast is also an option, so that windows can easily be switched from transparent to opaque.

Doors

While a room with no access points would be completely secure, employees need physical access to places that must be secured with other means. Knight Errant offers a variety of security doors to fit your needs. Security doors are installed to protect key rooms and at key junction-points to compartmentalize a facility during a security breach.

All exterior access doors are constructed to open inward, to protect the hinges from being compromised and the door removed. Emergency egress doors are weighted and balanced to open with minimal effort, and are also wired to the security system to warn of unauthorized access. All secured doors are constructed of solid, high-quality stainless steel with a single-body stainless 16 gauge steel frame.

"Pocket door" construction is also available, where the door retracts into the body of the wall instead of swinging in or out. These doors are ideal for laboratory environments where floor space is at a premium.

Transparent, laminated, bullet-resistant polymer can also be applied to doors, enhancing your protective needs. We also offer photovoltaic densiplast so a door can go from opaque in any number of colors to transparent.

HVAC

Heating, ventilation and air conditioning (HVAC) systems provide essential environmental controls, but also pose a serious security hole. To prevent criminal cockroaches in the ductwork, all vents should be too small to allow access to the system. Knight Errant's Airwall™ system can be installed within ductwork to sterilize the air flow with microbe-killing UV light, automatically preventing the spread of airborne pathogens.

When attached to a CCSS network, an HVAC system can automatically be blocked off in certain places to prevent the spread of incapacitating gases used to disable intruders. Circulation fans can be controlled via CCSS to provide precise climate control to multiple independent rooms.

• Cockroaches, nice. It just makes your day to know what the corps think of you. Corp sentiment aside, there are still entry points that a body can fit into. Main ventilation shafts in large buildings can even fit some orks. Just watch out for those circulation fans.

• Falsal

TECHNICAL SECURITY

Sensor devices are the eyes and ears of any security system. No security system is complete without integrating the latest advances in security technologies. Switch alarms involve passive detection of movement through an area. Area sensors detect changes in the state of an enclosed space. Biometric Recognition Technology measures human features to detect unauthorized persons. Embedded Sensor Technology is the very latest in security technology, using laminated piezo-electric composites and

hot new nanotechnology to make the walls your sensors. High-visibility fake sensor devices can also be used to distract malcontents from the true security systems.

Switch Alarms

Switch alarms are a general class of unobtrusive, passive sensors, designed to detect intruders and trigger alerts without the intruder's knowledge. Knight Errant offers a complete selection of alarms, including the time-tested entry-point alarm circuit, capacitance "proximity" wire, pressure pads and laser trip beams. Intruder alarms can be connected to traditional alarm systems, warning klaxons or a CCSS system for truly silent alarm protection.

Window and door alarm circuits consist of a conductive metal or polymer embedded in the glass of a window or frame of a door. When the window or door is closed, the circuit is active. Once the window or door is opened, the circuit is cut, triggering an alarm condition.

• Circuit alarms are cake to crack. Slip a bit of foil across the contacts, use a shim of conducting metal, whatever it takes. All you need to do is keep the contacts together long enough to get in and close it behind you. You do close doors and windows behind you, don't you?

• Highwire

Capacitance wire, also known as proximity wire, detects the electrical charge of a metahuman body. Specially calibrated circuits link the two ends of the wire. When a metahuman enters the range of the wire, the electrical charge of the trespasser's body induces a change in the current across the wire, triggering an alarm. These are often wired into perimeter fences to trigger cameras or active security measures.

Pressure mesh/pads are precisely calibrated air bladders completely hidden under or within tile, carpeting or other flooring. When activated, the system senses the weight of a metahuman walking on top of it. The weight displaces the air in the bladder and triggers the alarm, also reporting the weight of the individual(s). Similar versions use piezo-electrical tiles or metal contact strips rather than air bladders.

• This weight measurement aspect can trip you up. We once scoped a target site and determined that they had guard dogs roaming the halls. Ok, we figured that meant all we had to do was take out the pups. They wouldn't have any tripwires to worry about, since the dogs would set them off, right? Wrong. The dogs were all under 50 kilos, so the trip pad ignored them. But when we waltzed in, each easily over 75 kilos, we set the fraggin' alarm off.

• Daisy

Laser trip beams utilize directed laser light to complete a circuit. When an intruder interrupts the circuit, an alarm is triggered. Knight Errant sells only the highest-quality, modern laser trip beam systems, each designed to measure the power of the laser beam across its path. If the level drops below a certain



threshold, such as would occur if a criminal redirects the beam, an alarm is triggered. These laser beam systems also work only on certain wavelengths; any introduction of wavelengths outside the approved set will trigger an alarm.

- Watch out for the "laser mazes," folks. Every bounce is part of the system, so if the beam doesn't hit each and every mirror, the alarm goes off. Nothing's worse than setting up an elaborate mirror system, keeping the length exactly right, only to have the alarm go off anyway.
- Highwire

Area Sensors

Area sensors cover entire rooms by their nature, monitoring state changes in a sealed environment: motion, temperature, sound/vibration or air pressure. Knight Errant recommends area sensors as ideal in laboratories and containment facilities where no employees are present; otherwise they are thrown off by the presence of authorized individuals.

Motion sensors use infrared technology to detect changes in the ambient temperature of a room. Motion detectors do not have the resolution to form a visual image, but they will pick up any movement in their field of view. They are best combined with a temperature sensor so that enterprising criminals cannot override your heating system to raise the ambient temperature of a room beyond the sensor range of the motion detector, which would blind it.

- Remember, the H in HVAC stands for "heating." If you can gain control of that, you can control those temperature settings.
- Mother

Sound sensors utilize extremely sensitive microphones to detect vibrations. They can be programmed to ignore sounds like a ringing telecom, gunfire, thunder and earthquakes. For maximum efficiency and to avoid false alarms, they should be monitored via CCSS system by a Knight Errant trained security rigger.

- Think about these for a second. Sure, it can be programmed to ignore gunfire, but it doesn't say that it will ignore all gunfire. Say, for example, all security all carries the same kind of weapon, and these little buggers will ignore only that kind. You go shooting your favorite Warhawk in a place that issues Brownings, and you're going to trip an alarm.
- Falsal

Air pressure sensors monitor barometric changes in a closed environment. This kind of sensor is most efficient in a laboratory environment where certain conditions have to be maintained and the door is not opened often. This is an excellent sensor to maintain the integrity of a sealed area.

- Ignore for a moment how hard these systems seem to be to crack. If you can measure how much air is supposed to flow through the room from the HVAC system, you can slip in through

the ductwork. It's a dirty, smelly, cramped business, but if it's the only way, get crawling.

- Highwire

Pheromone scanners detect the pheromones secreted from metahuman glands by sampling the air. Criminals with pheromone-boosting augmentations will get quite a surprise when they try to infiltrate a facility that uses these unobtrusive biometric scanners!

- Oh, they are so not kidding here. We didn't even see the slagging sensor when cracking open a research lab. Our decker's got the maglock popped open, I'm watching the hall and our elven sammie is ready to kick open the door. Only problem is he has tailored pheromones and they're pumping out enough "scent" or whatever to light this sensor up like a Christmas tree. Next thing I know, drones are dropping from the ceiling and I hear the pitter-patter of security feet. A real close one.
- Drowned Rat

- They've been trying to incorporate ways to use pheromone scanners for biometric access control, but the systems aren't sophisticated enough yet to identify individual users—unless they are used in conjunction with tailored pheromones or scent glands, but that's an expensive modification to force your employees to get.
- Septum

Cameras and Visual Sensors

Standard security cameras can see across multiple spectra of light. They range in size from the obvious full-sized model (an intruder deterrent due to its visibility) to concealed pinhole cameras.

Infrared sensors have been used since the last century to detect body heat. Police departments were the first to adopt widespread use of infrared technology in locating criminals. Knight Errant now brings to you a mature infrared product that will see through darkness, available in a variety of styles. Passive infrared sensors can produce an image in black and white, with white signifying hot spots. Thermographic sensors can overlay a colored heat gradient to a standard infrared display, providing an extra level of heat differentiation.

- Fires and other large heat sources can drown out other heat signatures. Of course, blazing infernos tend to attract attention, so I don't recommend them as appropriate "distractions" unless your goal is collateral damage.
- Poker

Low-light, or light amplification, sensors take ambient light and electronically increase it to produce an image. Low-light sensors have a distinctive green hue to them.

- Bright lights cause glare on low-light sensors, and exceptional spikes can burn out the sensitive optics.
- Nova



Ultraviolet sensors pick up light beyond the range of visible light, less than 400 nanometers. Only the near ultraviolet spectrum is of any use to security planners; the farther ranges of the spectrum require too much energy and have only minimal benefits in observing intruders. UV sensors are commonly used to locate marker dyes and movement in conjunction with FAB astral intruder detection systems.

Ultrasound

Ultrasound, while not a light-based sensor, fills a similar role in security planning. Ultrasonic pulses detect movement within its operational range and sophisticated dedicated processing units translate the reflected sound into a wireframe model of the movement. Ultrasonics are not fooled by spells that render criminals invisible to light-based sensors.

• Some of those ultrasonic sensors can do more than track you. Our team was prowling through a research facility in never-you-mind when one of those bad boys went from "track" to "disable." It flooded the room with enough noise that our adept was on the floor clutching his head. Me? I got to see my breakfast again in an unpleasant fashion. Not what I'd call an elegant security system, but we did go home empty-handed.

• Faisal

Weapon and Control Scanners

Personnel sensors are designed to scan people entering your facility in an unobtrusive manner and alert security personnel to contraband equipment and modifications.

Magnetic Anomaly Detector (MAD) systems have been in service for decades and are quite capable of detecting even the smallest of weapons. MAD systems can easily be installed in doorways or arches, with the archetypal freestanding archway still employed for psychological purposes. The MAD unit creates an electromagnetic field; passing a firearm or other ferromagnetic material through it creates an electrical charge. The inductance and resistance of the scanned object is compared to meticulously created files on common and exotic weapons and items, providing security with a match. Hand-operated scanners can also be employed to provide close inspection of a person should a full unit not provide the resolution required.

• Lots of runners forget that their nice new ceramic gun has a lot of metal in it. Specifically, in the bullets. Tip to the newbies: use caseless HI-C densiplast cartridges in that ceramic gun.

• Faisal

Chemical sniffers sample the air in order to detect the particles given off by the nitrogen-rich propellants in firearm



cartridges and explosives. The volatile nature of a criminal's weapons works against him, and the chemsniffer units can be mounted unobtrusively in doorways just like a MAD unit. A handheld unit is also available for point inspection of people and items.

- Plastic baggies—they're not just for your novacoke stash any more!
- Redeye
- Wlseacre narcotics references aside, hermetically sealing your weapons and ammunition in plastic isn't a bad way to avoid chemsniffers. But eventually you will have to remove the bags in order to use them, and that means any wandering chemsniffer will scream.
- Highwire
- Be careful about wandering through one of these right after a firefight. Even if you've ditched the shooters, your hands and arms will be caked with residue from all the lead you forcefully propelled. The chemsniffer may pick up on that, and the cops have a chemical dropper that will reveal the residue on your skin. You may not have any contraband, but they'll hold you for questioning and may try to connect you to any unexplained incidents.
- Grip

Cyberware scanners utilize a dual-scan technology to penetrate the metahuman body. Ultrasonic and magnetic resonance scanning combine to see both soft tissue and dense structures within the body, revealing all but the most advanced cybernetics. Advanced processors match the patterns revealed by the scanner to a database of modifications, classifying the threat level for security personnel. Extensive modifications are not always illegal, even under corporate bylaws, so Knight Errant can offer its identity and permit matching service to authenticate registered cybernetics.

- "Identity and permit matching service?" Since when do KE and the Star play nice-nice together?
- Razor Rick
- Since there was profit in it, Lone Star charges a per-access fee and Knight Errant turns around and charges their customers a higher per-access fee. It's all nice and cozy, so don't get too cocky. Cross the Star and Knight Errant might just know all about you already.
- X-Star
- Luckily, current cyberware scanners cannot detect bioware, but I hear Knight Errant (and others) is working towards a scanner that will do just that.
- Biomatic

Maglocks

Locking mechanisms are the backbone of all security systems. Modern maglocks will resist almost any attempt to force them open by physical means and have become the standard for high security needs. Maglocks can be combined with any number of keying mechanisms, from biometric sensors to the latest in physical and electronic key technology.

Maglocks use powerful electromagnets to secure a strike plate. The advantage of this system is both the incredible power with which maglocks attach and that they can be completely electronically controlled and monitored.

- The disadvantage is that they are dependent on power to operate. Though a power loss will not cause maglocks to automatically open, it will render them inoperable. The magnet locks inside either the frame or door, just like an old-style deadbolt. So cutting the power won't get you in, but it keeps security contained while you force your way through the door.
- Tony Two-Chins

All basic maglocks come with either magnetic keycard access or proximity card access, both of which can be programmed via a master security station. Swipe cards and data-jack-accessed memory strings can also be used as keys.

Key Locks

In 1861, Linus Yale Jr. invented the pin-tumbler lock, which reigned supreme as the most pick-resistant lock available. Over two hundred years later, modern pin-tumbler locks are a hybrid dimple-cylinder design, utilizing the full 360 degrees of the cylinder's surface with an arbitrary number of pins. Home security cylinder-pin locks use five to ten pin positions, whereas security locks can employ dozens of pins.

- If you're not an expert lock picker, try getting your paws on an actual key for a sec or two (through subterfuge, sleight of hand, or however you can). Make an imprint of the key in a wax mold case, and use that imprint to create a copy. Viola, you're in.
- Charlie

An advanced feature of cylinder-pin locks is the ability to accept a transponder in the tip of the key. When inserted into the lock, the lock reads the transponder, allowing the key to be rotated and the pins activated.

- These can still be a problem, even with auto-pickers. Knight Errant has some nice toys to pick these locks with, but good luck in getting your hands on them.
- Highwire

Biometric Recognition Systems

Biometric recognition technology uses the metahuman body as the key to open locks. When paired with maglocks, biometrics provide the state-of-the-art in lock technology. Biometric systems read certain characteristics from a metahuman body and match them against an electronic database of autho-



alized users in order to grant or deny access. Common identification mechanisms are fingerprints, palm prints, voiceprint and retinal prints.

Fingerprint and palm print biometric scans work on similar principles, scaled to either a single metahuman digit or the entire hand. Modern finger/palm print scanners not only take a high-resolution image of the finger/hand, but also measure the electrical properties of the biological sample, verifying that the user is indeed alive. No longer can criminals mutilate your employees as an excuse to bypass your security.

Voiceprint analysis is an even more sophisticated method of biometric recognition. The characteristics of the authorized employee's voice will be measured against an encrypted benchmark. Voice-stress analysis and keywords pre-programmed into the system can also determine if the employee is being coerced into providing his or her voice.

- If you're going to supply a recording of a voice, make sure it's both high quality and your speaker has enough bass. Nothing's more embarrassing than hitting "play" and hearing a tinny version of the mark's voice come out. I've never been happier to do remote work than when something like that happens. Don't skimp on the recording equipment if you have to break a voiceprint scanner. Money saved can get you dead.
- Kan Opener

Facial recognition is another mature biometric scanning technology. Developed in the late twentieth century, facial recognition was widely used to match faces of known criminals at sporting arenas and other high-profile terrorist targets with a massive public presence. The advantage of facial recognition is that it is completely non-intrusive; the user simply stands facing the sensor as it renders an image of the facial structure using a harmless laser. The resulting three-dimensional map is compared against the authorized user database, granting or denying access as appropriate. More advanced scanners use thermographics to scan heat patterns under the skin or ultrasound to map the facial bones and teeth.

- Facial scans were a joke when they were first introduced, producing loads of false negatives and false positives and consistently missing the people they were supposed to catch. Today the tech has improved, but it's still lousy and not worth the price. I guess it makes the straights feel safer, though.
- Clyde

Retinal scans are one of the most tested and secure biometric scans available. Painless and quick, a laser scans the retina, providing an accurate match to a known profile. Temperature sensors around the scanner can determine if the eye has been removed from its owner. Cybernetic retinal duplication is not only highly illegal in most nations, but it is also imperfect and detectable by Knight Errant's proven scanning systems.

- Yeah, sure. And they work great against nanite retinal tailors too. (Snicker.)
- Conjunctivitis

Knight Errant's research and development department is pleased to announce new advances in biometric scanning for our customers, pushing the state of the art in biological recognition systems to new levels. Knight Errant now offers three new biometric technologies: pheromone scanners, DNA/cellular scanners and breath scanners.

Cellular and DNA biometric recognition examines the genetic material of a user. A small sample is taken after a palm print scanner verifies that the user is alive and matches a baseline biometric print. Cellular scans match the major histocompatibility complex, the cellular fingerprint found on the sample extracted via thumb prick. DNA scanning takes longer but is much more comprehensive, taking several minutes to match the sampled DNA to a database of authorized personnel. These scanners can be made to look exactly like a plain palm print scanner so that criminals will not know their DNA will be collected. This can prove invaluable for later forensic investigation.

- Cellular scans don't actually decode your DNA. Instead, it examines the "fingerprint" on the exterior of cells. This is more unique than a finger or palm and less time-consuming than full DNA checks.
- Doc X
- Even if you deck their records to get your own DNA on the authorized list, you can be sure that the corp has already made a backup or two. You can always try to intercept the authorization request real-time, but I seriously doubt any corp putting cellular scans on a door will use weak Matrix security on the authorization database.
- Kan Opener

Breath biometric recognition measures cellular material exhaled from the person into a specially calibrated membrane sensor. Sampling the aerosolized cellular material in the vapor from a hard exhale, the breath sensor filters out extraneous material, such as prior meals and stray bacteria or viruses. The sensing membrane is automatically cleansed after each use with a pulse of ultraviolet light.

- Frag, I knew it. They can tell what you had for lunch.
- Silent Sam
- How useful is this, actually? There can't be too much "aerosolized cellular material" in your breath. Pathogen transmission requires a vector, usually mucus coughed up from the lungs. And gastro-intestinal "fumes" aren't going to provide enough uniqueness for any kind of identification, especially since they vary with what you had for lunch (thanks, Sam).
- PhDee
- Never mind that, all you need is a coffee mug that your authorized user recently used. Grab the epithelial cells from it, replicate some DNA with a portable microPCR, add to aerosol pump and spray at sensor. Vollll!
- BioE



Embedded Sensor Technology

Advances in piezo-electrical composite materials have brought about a revolution in security design. The creation of embedded sensor, or "smart wall," technology allows unparalleled flexibility in design and execution of security monitoring. Smart walls can load several different sensor technologies in virtually limitless configurations. Utilizing the latest in nanotechnology to shrink down sensor size, Knight Errant offers motion, air pressure, chemsniffer, pheromone and pressure pad sensors. Nanotechnology removes the need for large macrotech sensors, distributing the entire sensor across the piezo-electrical composite.

- This gives me serious willies.
- Donjon

- You're not the only one. I keep thinking back to old runs and wondering if this is the reason some of them went south for no apparent reason.
- Hlghwire

The nanotech versions of these sensors differ from their macrotech cousins. Lacking the large heat-sensing "eyes" of normal motion sensors, the nanotech version utilizes a brand-new capacitance-infrared hybrid. The nanotech air pressure sensors utilize a sensitive nanotech membrane sandwiched inside a piezo-electrical mesh; when the air pressure in the room suddenly drops or increases, the membrane will distort, causing an electrical charge to be generated in the mesh.

Chemsniffer sensors are actually small nanomachines spread across a smart wall that sample the air for the same volatile chemicals as the macrotech chemsniffer does. Pheromone sensors embedded in piezo-electrical walls remain functionally similar to their normal counterparts, incorporating minimal amounts of nanotechnology to reduce the depth of the sensor. Pressure pad sensors are embedded in the floor, like their macrotech cousins. Since they can be ultra-thin, however, nanotech trip pads can be embedded in nearly any kind of flooring, from metal to simulated wood.

- Now there's no doubt in my mind. Donjon, remember the Whitehall facility?

• Hlghwire

- Now that was a freakshow. Not a single visible security device, and we looked both before we went and while we were there. And yet, security seemed to be all over us like stink on drek. They definitely had some of those smart walls in there. We were lucky to get out alive.

• Donjon

- Agreed. Time to get to the docs to check and see if they tagged us.

• Hlghwire

Embedded sensor technology is designed for a closed-circuit simsense system; normal displays cannot handle the amount of information and degree of control that the system requires. These



systems require a significant amount of training and infrastructure investment. The top of the line does carry a high price tag, but also brings exceptionally high quality of security coverage!

- Fortunately, being reliant on CCSS gives this tech some serious drawbacks. There are many ways to compromise a CCSS system, and if the rigger can't sense the alarms, then no one's the wiser about your presence.
- Kan Opener

Containment and Neutralization

In the event that your security is compromised, the first priority is to contain and/or neutralize any intruders and potential threats. Knight Errant presents a range of products to detain, incapacitate or otherwise handle intruders.

Doors, windows and other access points can be fitted with steel or ballistic-polymer shutters that slide down and lock into place when an alarm is triggered. Likewise, strategically-placed gates can be deployed to trap intruders within an area where they can do no harm. Other restrictive measures, such as laser or monowire mazes, can also be triggered for detention. These defenses stay in place until a security override command is issued.

To neutralize active intruders, gas delivery systems can shunt knockout gas into the compromised area, incapacitating the criminals without causing collateral damage. The area can then be ventilated and opened so security can arrest the interlopers. Net guns and taser systems are also an option.

For extreme cases, gun ports capable of utilizing an assortment of weaponry can be strategically positioned within walls, landscaping or other features. Optimal placement will ensure that intruders do not spot these ports in advance and that the guns can sweep across a wide field of fire and eliminate multiple targets at once.

- Watch out for those ceiling ports. Too many runners forget to look up!
- Rooster

CCSS INFRASTRUCTURE

The glue that holds modern security systems together is a closed-circuit simsense system. Adapted from the vehicle interface, rigger protocols were extended to cover building fixtures. Managing all of this data is no easy task, but fortunately Knight Errant has the gear to make all of your systems function as one. Interconnects are the nuts and bolts that link a CCSS system together.

Junction Switches

Junction switches serve to connect CCSS fiberoptic lines together to form high-density fiber "trunks." Every device tied into the CCSS network does so through fiberoptic cable. In order to maximize system bandwidth, Knight Errant offers its Constellation line of CCSS junction switches. Available across all price ranges, the Constellation line offers a number of configurations for the bandwidth needs of your network.

The Constellation-IV switch offers a maximum of sixty-four fiber connections, with two dedicated "uplink" ports to connect either to another junction switch or a master access point. The midrange Constellation-III switch offers thirty-two ports and a single uplink port. For value-minded customers, the Constellation-II switch offers sixteen ports, allowing for fifteen device connections and one uplink to either a switch or master access point.

The Constellation line of switches provides the ultimate in expandability and redundancy. All models offer redundant power supplies and processors, both of which are hot swappable—meaning less downtime for your network! On-the-fly firmware updates mean your system never misses a beat and always stays up to date.

Routers

The Hermes line of CCSS routers is a new addition to Knight Errant's CCSS lineup. Taking a cue from the advances in recent cybernetics, Hermes routers create a composite CCSS signal from several CCSS-enabled security devices. Combining several security cameras, each sensitive to different wavelengths of light, can create a CCSS picture visible across the entire light spectrum. Not limited to just cameras, the Hermes line is fully programmable, allowing security planners to decide how much of each "channel" to display at will. They may also send custom alerts to the CCSS operator based on interlinked events, such as an air pressure drop combined with a spike in temperature.

The programmability features of Hermes CCSS routers are accessible via a Kronos master access point. Router code can also be written on a cyberterminal and uploaded via Hephaistos auxiliary ports in case of a hardware failure. All Hermes routers are expandable as well, with healthy upgrade options in processing power available immediately from Knight Errant.

Access Points

Knight Errant offers two styles of CCSS access ports to best suit your needs. The Kronos line of master access points features maximum bandwidth and responsiveness for corporate security riggers, with the ability to control all linked security devices, from doors to drones. Kronos offers a full range of LCD and plasma displays for non-rigged security personnel, a remote-control network bridge for remote drone control, and additional DNI interfaces for backup personnel or in case of hardware failure. Standard features include an integrated cyberterminal workstation for logging. After a security event, forensic evidence of unauthorized entry can be examined in detail and the CCSS system can be fine-tuned to close any discovered loopholes.

Auxiliary access points provide a valuable debugging tool for any CCSS system. Due to their complex nature, a CCSS system can often develop strange and unexpected behavior that cannot be diagnosed properly from a command center's master access point. Fortunately, debugging such a system can be made easier by utilizing the Hephaistos brand auxiliary access points. Auxiliary ports connect directly to both the master access port and a segment of the CCSS network, such as a Constellation-IV switch. This allows for local debugging of severed trunks and misconfigured devices.



- The catalogue doesn't mention them, but there are also CCSS-controlled security displays and intercoms that let the security rigger display things for his more mobile buddies. Augmented security guards can receive images and data straight into their heads from the sec rigger. It's frightening to see such a system in action, especially when they're gunning for you.
- Highwire

Matrix Interlinks

The Poseidon line of CCSS-Matrix interlinks provides a seamless upgrade path from older Matrix-based security systems to CCSS security systems. Depending on the level of integration that your security system requires, the Poseidon Interlink can be configured for one- or two-way communication between systems. If your legacy network includes only passive devices, a one-way Poseidon Interlink is right for you. But for more complex devices, a fully two-way Poseidon Interlink will fit your security needs.

Poseidon Interlinks carry Knight Errant's top of the line encryption products, providing safe and secure communications between all of your devices. Poseidon Interlinks can also be programmed to generate local traffic logs and forward them to a Kronos master access point.

- Why anyone in this day and age would use Matrix-based physical security is beyond me. These devices completely compromise a perfectly good CCSS network by allowing a decker to inject false signals. Encryption to the CCSS system doesn't equal signal integrity.
- Leggy

MATRIX SECURITY

Matrix security is largely based around architecture and intrusion countermeasures. Proper use of these will provide the necessary security on access points while not burdening systems used for everyday work. Important hosts and networks should not be connected to the Matrix, or should at least be linked only through timed, teleporting and tiered access. Security deckers should be used to provide on-the-spot investigation and response to any intrusion. Matrix systems are vulnerable to physical intrusions, and should be secured behind locked doors with restricted access.

To access the full line of Knight Errant Matrix security products, visit our [Matrix security host](#).

MAGICAL SECURITY

Conventional physical and technical security has no effect on astral intruders, and modern security systems must guard against the use of subversive and destructive magic. As described in our [magical security host](#), Knight Errant offers an impressive range of astral and magical countermeasures in addition to the services of trained magicians and mundane magical specialists.

Spirits and Paranormal Guard Animals

Judicious use of spirits and paranormal animals can make a tremendous difference when securing a facility. Knight Errant

offers an assortment of bound spirit and astral response services at affordable prices. Paranormal guardian services come with many associated costs (for training, feeding and handling), but are an active, effective and unexpected resource to deploy against intruders. For the complete line of Knight Errant's paranormal and spirit licensing, services, products, training and specialists, visit [this host](#).

- A lot of corps balk at using paracritters. Remember that news story about the hell hounds that sparked a fire and burned the facility they were guarding down? There are too many horror stories like that floating around the Matrix—guard critters eating employees, destroying costly equipment, turning clients to stone, escaping into the surrounding neighborhood and terrorizing the yuppies, that sort of thing. I should know, I invented some of them <dlisplay_grin>.

• Fisher

- Not all security firms are that circumspect about using paranormals. And if you're on extraterritorial turf, the rules go right out the window. Cockatrices, plasma and devil rats, oh my!
- Crazy Leon

Astral Barriers

The most effective astral intrusion passive countermeasures are astral barriers such as wards, biofiber or guardian vines. Wards are available in several forms (basic, alarm, polarized and masking) and are ideal for protecting critical, high-security areas. For the cost-conscious, biofiber and guardian vines can accomplish the same task.

Fluorescing Astral Bacteria (FAB)

Astral intrusion detection has become even easier with our latest line of FAB injectors and containment units. Strain-I bacteria is injected into secure areas in gaseous form. It provides excellent marking of astral intruders, fluorescing in the ultraviolet spectrum when an astral form passes through the cloud. Dual-natured strain-II acts as a living astral barrier when placed into nutrient suspension inside containment units; any astral intruder will be trapped within a room surrounded by FAB containment units.

- You'll note they don't mention Strain-III. You're not going to find Strain-III outside of Chicago or extraterritorial grounds; the UCAS classifies it as a Class C Controlled Substance. That's "biological agent of mass destruction" for the legally impaired.
- Faisal

Spellcraft

Knight Errant provides a range of options for integrating anchored and quickened spells into your security scheme. Quickened detection spells are a subtle method of identifying or locating intruders, while security personnel can be trained to utilize anchored barrier or other spells as emergency magic support. Quickened illusion spells are also ideal for fooling mundane criminals or concealing access points or other features.



- This sort of thing is prohibitively expensive, so you're not likely to see it often. Most corps have more cost-efficient methods of providing magical security.
- Nuyen Nick

Fiberoptic Observation Network

A security magician's best friend, Knight Errant's Prometheus system is a self-contained, non-electronic, fiberoptic-based observation network. This network extends a security magician's visual line of sight, completely unencumbered by any electronic devices. Now you can utilize your magician's spell-casting capabilities from a well-protected area, rather than risking vital assets on the front line.

The Prometheus system employs high-precision refracting cameras to collect the maximum amount of light. Precision-ground lenses focus the light into zero-G-manufactured fiberoptic cable, preserving much of the original light intensity. To counter potential light loss, it is highly recommended that Knight Errant Daylight quartz lamps be installed to provide sufficient light. These cameras can be attached to a manually operated prism-mirror system, allowing the security magician to alternate between cameras with the turn of a dial. The last component is a goggle system that takes the image from the fiber and feeds it to the mage's eyes.

- Scary system, neh? It should be, but for all the advantages it supposedly grants, there are some very serious drawbacks. Those refracting-light cameras are very good at drawing in enough light that a mage 250 meters away can actually see you, unaided by electronics. That also means he can see the laser you shine in there or the Nova spell you drop on the camera all the better.
- Firefly

- Also, if you can darken the room even just a little bit, you can make it that much harder for the mage to target you with a spell. The system relies on having more than normal office lighting. In semi-darkness, the usefulness of the system is negligible.
- TechWiz

- Properly trained security mages can deal with even those adverse conditions; it's just more work to do so, and no system worth its salt relies on the Prometheus alone.
- Grey Knight

PERSONNEL SERVICES

The weakest link in any security plan is metahumanity itself. Any security plan can be compromised by improperly trained security personnel or undermined by unscrupulous employees. Knight Errant minimizes this threat with two types of services: quality security staffing and personnel security.

Knight Errant offers the services of experienced, trained, high quality security personnel for all of your needs. Our world-class standard security officers can be contracted for site security, perimeter patrol or emergency response. Matrix specialists can monitor your private networks for vulnerabilities and intru-

sions, and security riggers can coordinate all aspects of your facility's defenses. Security magicians can astrally patrol or respond to alarms from remote locations, or provide active magical defenses on site. Our executive protection specialists offer the best bodyguard, defensive driving, information control and threat analysis and prevention services money can buy.

Knight Errant can also bring years of experience to your doorstep with staff screenings, internal investigations, counter-intelligence operations and security awareness trainings. For more details, visit our [personnel security host](#).

INTEGRATION

The best security devices and personnel in the world won't amount to much if they are not coordinated, maintained and deployed properly. In conjunction with Ares Security International, Knight Errant provides consulting services to assist you in strategic location scouting, security plan design, installation, personnel equipping and training and repair and maintenance. Proper execution of security planning is what separates a compromised facility—with potentially millions of nuyen in losses—from a secure facility that produces the hottest new killer product on the market.

PUTTING IT ALL TOGETHER

by Grey Knight

If you're still reading this far in, I think it's safe to say you're not a drooling razorboy who's just interested in the latest toys. You want to know your odds when facing down your next job, and knowing how it all works together is the way to do that. Since I occasionally hire freelancers like you, I'd rather have competent professionals working for me than Anonymous Ganger #3. So here is a condensed version of the training lecture I've given several times. No B&E tips, though. For those, you'll have to register for the full course like everyone else.

FENCES AND WALLS

The bones of any system are the barriers. Modern security design shouldn't be obsessed with building "castles," but rather places where the risk is greater than the reward of getting in. Anyone can blow down just about any wall given enough explosives, but then he's just made a large target of himself and put everyone on high alert. The real idea behind fences and walls is containment. Properly laid out fencing can seriously hamper any entry or exit and give security time to neutralize your intruder, who then gets to meet someone like me.

Getting in is always easier than getting out. Usually security doesn't know you're making the attempt, otherwise you'd have a lot of inconvenient guests hanging around. The solution to making your exit is planning. Know your escape routes—and you'd better have more than one—and make sure one of them is clear when you need it. When the drek hits the fan, as it inevitably will, you do not want to be improvising an out.

- And for Dog's sake, bring the tools appropriate for the obstacles you are going to face. Wire cutters will not help you if the walls are plasticrete.
- Simpson



LIGHTING AND DOORS

If you've ever had to get by a locked door, you know how hard it can be when there's a spotlight on you. This isn't by accident; security designers know that illuminating a door is better than keeping it in darkness. Your best bet in a situation like this is to find a way to trick the light into not shining on you; if you break the light, congratulations, you've just tripped an alarm.

Knowing what kind of lighting is being used can significantly increase your chances of success. Corps love to save money, so they like to use sodium- and mercury-vapor lamps. A power interruption can give you a window of several minutes before those lights come back on, and any backups won't have the power of the mains.

DOORS AND LOCKS

A door is only as good as its lock, or so the saying goes. Matching the level of security needed to a door is no mean task. Overzealous security designers can seriously impair the ability of employees to perform their tasks. Standard cardreader and proxcard maglocks are more than enough for everyday use. And putting the top of the line lock on a wooden door defeats the purpose of the lock if any chiphead can kick the door down.

Key locks have their place, and can often be used very successfully. Not too many runners expect to see a key lock—some have never seen one until it's far too late to bring a lockpick along. The proliferation of automatic lockpicks makes the use of keyed locks problematic, as they can defeat most modern keyed

locks in seconds. Also, the physical keys have the bad habit of being copied or "lost." Physical keys should not be relied upon as the sole locking device for anything considered high security.

MAGLOCKS AND SENSORS

A maglock by itself is of no use. While a security rigger can tell if a lock has been compromised, how can security make an accurate assessment of the threat level? Do you have an armed squad of shadowrunners making off with priceless research or just Mr. Smith from the Engineering lab holding a door open too long while he tries to score with Ms. Jones? Wise security planners use redundant devices to cover high-security areas with overlapping coverage. Don't just put a visible-spectrum camera on that maglocked door; use a thermal camera and pressure pad in front of it as well.

Research and Development labs are prime targets for corporate espionage; this much is not news to anyone. Taking a cue from our Matrix-based security brethren—especially the ultra-paranoid data havens—"killing jars" are the tool of choice. Physical security killing jars use two or more sets of locks and sensors to grant access to restricted areas. In order to access the second lock, you have to open the first and enter a contained area. This alone discourages many would-be intruders; if they fail to overcome the second lock, they are now trapped in a small place. Depending on corporate security directives, once a killing jar is activated, neutralization methods can range from soft (keep perpetrators alive) to hard (run a search on the leftover genetic material).

SENSOR PLACEMENT

Placing sensors in the right places can make the difference between tracking everything that moves within your facility and chasing your tail while looking like bumbling idiots. Overlapping, intelligent placement of sensors will be of more use than filling every corridor with every type of sensor imaginable. If you cover an area with either thermographic or infrared sensors, use active infrared lighting and temperature sensors as well. The infrared lighting will light up the area like day and the temperature sensor will alert you to an increase in ambient heat. If you use FAB-UV, place ultraviolet sensors at different angles and use a Hermes router to generate a more accurate map of astral activity. Most importantly, though, is to not place sensors in places where authorized personnel will continue to trip them. This only generates false positives, wastes security riggers' time and will lead to security personnel ignoring future alerts in that area.

The new embedded sensor technology, while a hot product that has a lot of promise, is not a panacea for all security concerns. The enormous expense of smart walls should restrict its use to high-profile targets only. Acceptable locations for smart wall technology are executive offices where unobtrusiveness is a virtue or clandestine research facilities where maintaining a low profile is mandatory. Avoid the mantra of "more is better;" the truth of quality security design is that intelligent placement of sensors and barriers will beat most shadowrunners, especially when paired with trained personnel.

SECURITY PROCEDURE TRAINING

Without training in security procedures, all of the latest toys are worthless. You might as well fax your most secret plans right to your competitors if your security is asleep at the switch, baffled by what to do or still reading the manual on all those gadgets you bought. Security training is what makes a well-designed system operate at peak efficiency. Trained individuals know how to utilize the security system for their benefit, interpolating the data from the system to find intruders even when the sensors can't locate them. A trained operator will know the difference between a mechanical failure and a sabotaged device.

Security procedure training includes hardware familiarization, containment and neutralization techniques, basic forensic procedures and data interpretation methods. An entry-level course will focus primarily on the first three, whereas more advanced training will focus on interpretation, system design and security evasion and subversion techniques. Detailed training on subverting and evading security systems is available only to select employees and contractors.

- It's worth wiggling your way into courses like this if you can. It helps to have a pet Mr. Johnson who's willing to sponsor you.
- Prime Runner

COST CONCERNS

Some customers fall into the "penny-wise, pound-foolish" trap of security system design and skimp on necessary security measures. They then complain to you when their cost-saving measures cost them their proprietary data and fat bonus checks.

Insufficient infrastructure means insufficient data, which will starve security of what it needs most. That said, there are many cost-conscious means of securing a facility. False cameras, dummy units and the like can be used as visible deterrents to malicious behavior. While some crazed cultist tries to disable a fake camera, your real security can observe and detain the offender.

Conversely, a customer who wants to implement Daylight quartz lighting in every office, EST along every hallway and Hermes routers for every two light bulbs needs a lesson in economics. Overkill is just as bad for security as undercutting; an information glut requires more interconnects to support it and more brains on wires to interpret it. Systems can be, and often are, complex; that is the nature of the beast. The elegant solution that covers the facility with the least amount of complexity necessary is in the best interests of both the security provider and their customers.

- I saw Grey Knight (aka then-Major Lloyd Ritter) give this seminar in Detroit about six months prior to being promoted and stationed in Silicon Valley. It was very interesting to hear someone in the security field advocate not to sell customers whatever they wanted and instead focus on intelligent design planning. And then he ran us through CQB drills, CCSS hardware demos and let the mages in the group try out one of those Prometheus units.
- Two Timer

- There's no substituting training with gadgets. Trust me, I've broken into enough places to know.
- Highwire

TRICKS OF THE TRADE

by RoofRat

"Thou shalt not steal"—thus sayeth the Eighth Commandment. Since a little bit of misappropriation became very much taboo, people have been looking for ways to protect what's theirs from those of us who said "No to Number Eight!" If you check all the gadgets and doodads designed to keep the modern asset relocation specialist away from people's stuff, you wonder why we even bother trying! But as a friend of mine always says, there's no such thing as an unbeatable security system. For the proud owner, it all comes down to percentages—building a security system that will stop all but the cream of the professional crop from getting their grubby little mitts on your prized possessions.

This poses a problem for all us freelance security consultants who aren't necessarily the aforementioned cream. It can take a veritable arsenal of gadgets, innovative and dangerous moves and quite a healthy dollop of luck to get the job done. So, as a favor to a friend, here're a few little tricks that have worked for me during my career as a wealth redistribution agent. Hopefully they'll help tip the scales in your favor against the latest greatest security devices—for a couple of months at least, until they come up with new gadgets to keep us away. And then we'll come up with new tricks ...



So, you're visiting somewhere uninvited. The first thing to put a damper on your day is a great big fence around your target. The absolute first step is to check if it's electrified; it sounds obvious, but do *not* forget. Some electric fences, if they have enough current going through them, will hum or tick with an electric pulse. Unexpected wires or black boxes on the fence supports are a dead giveaway, as are unusual chemical deposits on the metal link. Or you could just push a teammate against the wire and see if he goes *bzzzt*.

If the fence is electrified, toss a large rubber mat over the top for insulation. Of course, more often than not the top of the fence is festooned with pretty coils of razorwire aimed at turning you into so much ground beef. This is not a good thing. I often use my kevlar mesh security blanket layered over the top of the razor wire, which allows me to scramble over relatively unscathed. If you have magical support, a *Levitate* spell is obvious—but a tunnel under the fence from a kindly earth elemental is subtler. Or, for the minimalists, paying a large troll 50¥ to throw you over the fence works nicely if you know how to land on the other side. The last three methods nicely bypass electricity and razorwire in one fell swoop ... of course, if you're lucky enough to be an adept you can just cheat and jump the fence.

Be wary of fences with naked fence poles extending a foot or more above the fence proper. This is a neon sign saying "Monowire This Way." Really, the only guaranteed way of dealing with monowire is to cut it with a laser or heat cutter. Even if you're not sure, run a laser cutter over the space just to be safe. A word of warning though: if the monowire is high-tension, it can lash out like a whip when it recoils from your cut—so keep your head, hands and loved ones out of the way.

The fence was the easy part; the typical perimeter zone is full of security patrols, guard animals, random sensors and inquisitive elementals. The best strategy against guard patrols is "don't be where they are." Do your homework, find out their patrol routes and timing and plot your course accordingly. Guard dogs can be trickier; I've found that a couple of water balloons full of cat urine lobbed in opposite directions can keep them occupied long enough for me to sneak past. Be careful where you throw, though, because mis-throws that hit security guards in the head are good for comedy value but bad for job security.

Illusion magic comes into its own here, too; well-placed phantoms can have guards and dogs chasing their tails for valuable minutes, and illusory noises-over-there can help you evade detection if they get too close. Just make sure your magical pal checks carefully for magical security. A fire elemental that wants to give you a hug or a watcher spirit with a penchant for tattling can put a crimp in your well-laid plans. If you don't have a magical pal, get one; as far as I'm concerned, any place without magical security probably isn't guarding anything worth stealing.

Another danger inside the perimeter of most facilities is the sneaky little devices that can be stuck anywhere, just waiting to catch the unwary intruder. They are not the easiest things to spot. Be on the lookout for things that are out of place; wires at the base of trees, bushes that seem too strategically placed and have little black nodules at regularly spaced intervals, plants that give off way too much heat and any raised patches of ground.

When you finally reach the building, the first thing to do is look for an entry point that isn't illuminated by a shaft of light from heaven. Always check for cameras or other devices like motion sensors near your entry point and try to take these out first if they pose a risk of detection. It doesn't matter how well lit a door is if no one is actually watching you try to open it. The "burglar's tux," or ruthenium polymer jumpsuit, is the best way to remain unseen, even in highly illuminated areas. These things may be expensive, but if you have the means, I highly recommend picking one up.

Dealing with a locked door can be tricky when under pressure, so it's best to have a few aces up your sleeve to get in fast and unnoticed. A maglock passkey will get you in the door fast, but it has a tendency to mess up the lock and that may alert security that all is not well the next time they open the door. If possible, take down one of the guards and snag his passkey. This works well if you are familiar with the security personnel's procedures, as you may know how long it will be before Joe Security has to report in and what happens when he doesn't.

If the lock looks too hard to crack, then go for the hinges. If the hinges aren't an option, you can always try for the wall beside the door. If it's plasticrete, you can't do much short of breaking out the thermite lance, but if the walls are of softer materials then a good laser cutter might get you in. Another option is targeting a window instead of a door. I've found that you can get some nice solvents that will make light work of a perspex window in a short time, and glasscutters are pretty self-explanatory.

If the doors and windows are too hard or too well lit, then it's time to look for another way in. As my name suggests, my particular preference for unlawful entry is the roof. A good set of climbing gear and a grapple gun can have you on the roof very quickly, if you know what you are doing. If the target building has nearby neighbors of similar stature, you can get to the roof without having to disturb the perimeter security at all. A nifty trick for dealing with devices on the roof is to beg that shaman friend of yours to summon a storm spirit to lightning strike the little suckers into oblivion or to take down power lines to the building or on-site generators. Of course, it can be easier to have a decker buddy cut the power from the Matrix ... but the storm spirit does it so much prettier. A nice little rainstorm can also do wonders for limiting visibility for cameras and heat sensors.

If the building is non-extraterritorial, then it has to have plans filed somewhere with authorities (though keep in mind they may have made changes since the plans were filed). My suggestion is to find a copy of these plans and locate the crawl spaces or ventilation ducts for the building, which can be an easy entry point with minimal security. If you are not claustrophobic, there is usually enough space inside the roof of most buildings to fit the most cunning affluence adjustment broker. Many ceilings are a lot less sturdy than walls, so once you have navigated to your goal via the blueprints, it is often an easy task to cut your way down from the roof and claim the prize.

I could go on for days and days spewing forth a plethora of tidbits for all of you budding (and not so budding) midnight movers out there, but I'm not going to. A lot of the fun in what we do comes from learning on the fly. Dangling upside down by

a rope over the two trolls with miniguns and leashed barghests, saying to yourself "Shoulda seen that loose roof tile," is what this job is all about. It's called experience, and everybody earns it differently. So go forth into the night, use my tricks if you want, or have fun finding your own. Just get out there and nick some stuff, and hope the Eighth Commandment was only a suggestion.

GAME INFORMATION

This section provides information on using the various security systems described above in a *Shadowrun* game. Gamemasters should carefully tailor the toughness of security systems to the storyline and style of play. Overcoming them should require a combination of dice-rolling and roleplaying. Security systems should be reasonably challenging to shadowrunners—perhaps even a serious threat to their lives—but an insurmountable fortress that shadowrunners cannot breach will not be fun for anyone. The gamemaster should always be careful to include kinks and flaws in a security system that clever shadowrunners can discover and exploit.

The following rules include material previously issued in *Security Systems*, pp. 232–237, *SR3* and also pp. 89–90, *SRComp*, so that a gamemaster can find all of the information in one place. It also expands on them with new complications and new methods of bypassing security.

In any case where rules presented here contradict rules in another sourcebook, use the rules here.

FENCES

Fences can be climbed (see p. 44, *SRComp*), or characters can cut through them with a pair of wire clippers (p. 293, *SR3*), at a speed of $(\text{Strength} \div 2, \text{round up})$ in meters per minute. Sensors can be attached to fences to detect attempts to scale the fence. The most typical are capacitance wire (p. 97) and sound/vibration sensors (p. 99).

Wire

The Wire/Tripwire Table (p. 96) provides Perception Test target numbers for characters to notice different fencing wire. The Wire Damage Table (p. 96) provides Damage Codes for characters that grab, walk or run into wire. Impact armor offers one-half (round down) protection against this damage. Cutting the wire with wire clippers requires a Strength (6) Test. Monowire only requires a Strength (5) Test to cut, but if the loose ends are not secured, a Quickness (6) Test is required to avoid being hit by whipping monowire that inflicts 10S damage.

Electrified Fences/Wire

A character who touches an electrified fence or electrified wire takes 4D Stun damage as if from a Shock weapon (p. 124, *SR3*). The character must also succeed in a Body (6) Test to remove her paralyzed hands from the fence, or she will continue to take 4D at the end of each Combat Turn. A character knocked unconscious will take one last 4D zap before her muscles relax and she slumps to the ground.

To bypass electrified fencing/wire, characters can either cut the electricity to the fence/wire or just risk damage and directly cut the fence/wire. Proper insulation can reduce the electricity's



WIRE/TRIPWIRE TABLE

Wire/Tripwire Type	Perception Target
Barbed Wire	4
Concertina/Razorwire	3
Monofilament Wire	8
Capacitance Wire	8
Trip Beam (Obvious)	2
Trip Beam (Visible)	6
Trip Beam (Invisible)	12
Mechanical Tripwire	6
Pressure Pad	6
Pressure Mesh	8

Situation	Perception Modifier
Camouflaged/Obscured in brush	+1 to +4
Character distracted/running	+2
Illumination level fluctuates	Add +1 to modifier of worst level

WIRE DAMAGE TABLE

Wire Type	Grab/Walking/Running Damage
Barbed	3L/4L/6L
Concertina	4M/5M/8M
Monofilament	7S/9S/11S

power, and levitation or other methods of not being grounded renders the person immune to damage. Remember that holding on to a pair of clippers, which then touch the electrified fence/wire, counts as grounding yourself.

Sensors that measure the current flow and resistance through the fence/wire may guard electrified fencing/wire. At the gamemaster's discretion, the sensors may detect if the fence/wire is cut or if a character is electrified on it.

WALLS

Walls can be climbed (see p. 44, *SRComp*), or characters can try to break through them with explosives or other tools (use the rules for *Barriers*, p. 124, *SR3*). See the expanded list of Security Barrier Ratings. When trying to blow up a section of wall, use the rules for *Blast Against Barriers*, p. 119, *SR3*. If the wall holds, the blast may be redirected or channeled (see *Blast in a Confined Space*, p. 119, *SR3*).

Some shoddily constructed plasticrete walls can be dissolved into a mass of goo with the right solvents, like Plastisteel-7 (p. 113, *M&M*). These brands look just like properly constructed walls, so only diligent legwork can reveal the existence of faulty plasticrete. Inspection of the wall will reveal nothing without a Chemistry or Engineering (8) Test.

Tunneling

For the patient, one method of bypassing a wall is to tunnel underneath it. Tunneling only works on natural substances like soil, loose rock and sand—concrete, metal and plastic hybrids must be broken through using their Barrier rating.

Tunneling characters must make a Body Test against the target number given on the Tunneling table (p. 96). Apply a +2 modifier if the digger's tools are inadequate. The amount of material they can dig out each hour is equal to the Amount listed times their successes. Civil Engineering skill (p. 104) may be used as a Complementary skill.

For deep or long tunnels, characters must make a Civil Engineering Test against the same target number per day to avoid a collapse. At the end of a tunneling project, the project leader can make an Open Civil Engineering Test. The result is the effective Barrier rating of the tunnel's walls, indicating the tunnel's structural integrity against explosions or magic. If a tunnel wall is breached, the tunnel collapses.

LIGHTING

Incandescent, fluorescent and halogen lights all turn on and off instantaneously. Due to the heat generated by halogen lights, prolonged, direct exposure to the bulb can cause flammable materials to ignite. Gaseous-discharge lamps take five minutes to warm up fully. Once hot, mercury-vapor lamps take ten minutes to relight, while sodium-vapor lamps take fifteen minutes. Active infrared lamps provide sufficient illumination for both thermographic and infrared sensors.

Ultraviolet lights emit both in the ultraviolet and the blue end of the visible light spectrum. People exposed to high levels of ultraviolet light for several minutes or more, however, can suffer from burns on unprotected skin, glare if not wearing amber-tint protective glasses or flare compensators and other unpleasant side effects. Ultraviolet lamps can also be used in forensic work, as they reveal biological and mineral traces that are invisible under white light.

SECURITY BARRIER RATINGS

Material	Barrier Rating
Plywood	2
Drywall	3
Plastiboard	4
Chain link (alloy or densiplast)	6
Plasticrete	6
Densiplast	8
Kevlar Wallboard	8
Plastisteel	12
Steel-reinforced	16
Blast-plated	24
Milspec	32

Light switches can be subverted with two successful Electronics B/R (4) Tests—one to open up the switch, and the other to rewire it. Each takes a base time of 30 seconds, modified by successes.

DOORS AND WINDOWS

Doors and windows are often wired with alarm systems that will alert a security system if the door is opened improperly. In order to bypass such a system, a character needs to make a Perception (alarm rating) Test to locate it, and then an Electronics (alarm rating) Test to disable it with a base time of 5 minutes; apply Build/Repair modifiers from p. 95, SR3.

To batter down a door, follow the rules for *Breaking Through*, p. 125, SR3.

Glass windows can be scored and cut with a proper glass-cutting tool. The tool's rating must be equal to or greater than the Barrier rating of the window's material. A tool laser (p. 15, M&M) can also be used against windows with a Barrier rating of 10 or less.

Climbing in a window generally requires an Athletics (2) Test, though windows at odd heights or angles may require an appropriate Climbing Test (p. 44, SRComp). Depending on the size of the window, some characters (especially orks and trolls) may have trouble climbing through (or simply may not fit).

HVAC

Heating, ventilation and air conditioning (HVAC) systems are an often-overlooked part of security design. Industrial HVAC systems may use ductwork large enough for a metahuman to fit inside (though orks and trolls simply might not fit). Crawling through ductwork is a laborious process, and a character can only move his Quickness in meters per minute. Characters may often encounter fan units in the ducting, which require an Electronics (4) Test to disable and an Electronics B/R (4) Test to remove. Fans may also be alarmed in the same manner as doors and windows.

Large main circulatory fans cannot be removed by characters and must be disabled so the character can pass through the stopped blades. If a character sticks his hand, falls, or is otherwise forced into a working fan, that character will suffer 4M Physical damage from ductwork fans and 8S from main fans.

Some facilities employ an air duct "cooking system," an ellipsoid section of ductwork with reflective surfaces that scorches passing air with UV light, killing most airborne pathogens and preventing their spread through the facility. These UV furnaces pose no hazard to metahumans that pass through, and they can be disabled with an Electronics B/R (4) Test and a base time of 1 minute.

TUNNELING TABLE

Tunneling Material	Target Number	Amount (in meters ³)
Soft soil	4	(4 × STR)
Compacted soil	5	(2 × STR)
Loose Rock	6	STR
Soft Stone (limestone)	8	(STR ÷ 2)
Hard Stone (granite)	10	(STR ÷ 4)

SWITCH ALARMS

Switch alarms are mechanical or electronic systems designed to be "tripped" by intruders, triggering an alarm. Switch alarms can be set up so that they automatically trigger more active security measures when they go off.

The Wire/Tripwire Table (p. 96) lists the target numbers for Perception Tests to notice various types of alarm systems.

Capacitance Wire

Capacitance or proximity wire has a range of only 2 meters, but it will detect any living body that enters that range. The drawback is that capacitance wire cannot distinguish between metahumans and animals.

Trip Beam Systems

Lasers or beams of high-intensity conventional lights serve as the equivalent of trip wires when fired across an area at a detector. Mirrors or reflectors may bounce the beam around an area before it reaches the detector, thereby increasing the amount of space covered and also creating an intricate web that player characters will find difficult to navigate. Interrupting the beam triggers an alarm.

Trip beams can be either obvious, placed as a visible deterrent, or invisible. The target number to notice a trip beam (or at least the emitting devices) is on the Wire/Tripwire Table (p. 96); apply appropriate Visibility modifiers (p. 232, SR3). Note that smoke will enhance the visibility of the beam, rather than reduce visibility. The old trick of spraying an aerosol into the area protected by the beam(s) to increase their visibility still works (apply a -1 modifier), but at the gamemaster's discretion may trigger certain sensitive alarm systems often found in environmentally controlled interior areas.

To bypass trip beams, a character can make a Quickness Test against a target number devised by the gamemaster (4 and up), depending on the extent of the beam coverage. Characters will find it impossible, however, to bypass some trip beams in this manner. Emitters and reflectors can be constructed to reroute the beam(s), but to do so requires knowledge of the system in advance, a steady hand and luck. A player character trying this

Item	Concealability	Weight	Availability	Cost	Street Index	Legality
Glasscutters	10	—	2/24 hrs	Rating × 3¥	0.5	Legal
Suction Cup	6	1	4/48 hrs	10¥	1	Legal



tactic under the best possible conditions (possession of the trip beam's design schematics and plenty of time to study them) must make a successful Quickness (8) Test. The target number for this test rises to 12 if the character has only a picture of the system, and to 16 if the character has neither a picture nor the design schematics. The base time for coming up with a scheme and the necessary equipment to bypass a trip beam is 1 week.

The most common method of bypassing a trip beam is to create a proxy beam by aiming additional emitters of the appropriate type at the detectors. When the character breaks the trip beam, the proxy emitter sends sufficient beam wattage to the detector, fooling it into thinking everything is fine. One proxy emitter is required for each detector used by the trip beam. Setting up the proxy beam requires a successful Reaction (6) Test. If the test is unsuccessful, breaking the trip beam triggers the alarm.

Laser trip beams can also be configured to emit a damaging laser pulse. If the beam is broken and an alarm is triggered, such a laser beam will inflict a 10M wound (reduced by half Impact armor, round down). The laser's effectiveness and Power are modified via the conditions outlined on p. 30, CC.

Mechanical Tripwire

Mechanical tripwires use wire or contact switches, which can be avoided or tricked and cut. To trick a wire, the character must place the exact current into the receiving end while maintaining the tension; this requires an Electronics (4) Test and a Reaction (4) Test; if one character is performing both actions, apply a +2 modifier to each.

Characters can use a simple string with a weighted bit to test an area for mechanical tripwires; the string will hang on the tripwire without setting it off if the character makes a successful Quickness (4) Test.

Pressure Mesh and Pads

Pressure mesh and pads are weight-triggered sensors usually concealed beneath the ground (pressure mesh) or flooring (pressure pads). The sensitivity of these pressure devices may differ, however, especially in areas where patrol animals or drones are used. The less sensitive the device, the easier it is to avoid tripping it.

The target number to notice a mesh or pad is given on the Wire/Tripwire Table (p. 96). After a character has stepped on a pressure mesh/pad, make a second Perception Test against the same target number, with a -2 modifier. If the test is unsuccessful, the character trips the alarm. If the test is successful, the character knows he or she is stepping on a pressure sensor and can

try to remove the pressure before it exceeds the device's sensitivity. To accomplish this, the character must make a successful Reaction Test against the appropriate sensitivity level (see the Pressure Sensor Sensitivity Table), plus the character's natural Body Rating. Apply a +2 modifier if the character is running.

CAMERAS AND VISUAL SENSORS

Sensors are sometimes placed to be obvious and easily seen, to act as a psychological deterrent for criminals. Other sensors are hidden, so as to catch intruders unaware. The Perception Test target number to notice sensors is based on their Concealability. At the gamemaster's discretion, sensors may be camouflaged or disguised as other objects, increasing the target number. Cameras may also have microphones attached, allowing security guards to overhear conversation and sounds in their vicinity.

Shining a bright light at video cameras and other visual sensors will inflict glare Perception Test modifiers (+2) on any character attempting to see through them.

Low-Light

Low-light sensors amplify visible light and some portions of the very near infrared to produce an image. Colors are usually lost in the green-tint image, but high-rating state-of-the-art low-light sensors retain some of the color of the original, albeit very muted and washed out.

Bright, directed light can burn out light-amplifying sensors. To target a sensor with a laser requires a Laser Weapons Test, just like ranged combat. Sensors can also be targeted with spells that utilize the elemental effect of Light (p. 52, *MITS*). If a number of successes are scored exceeding the sensor's rating, the sensor is burned out and useless until repaired. Otherwise, the sensor is merely dazzled; apply a +4 modifier to any Perception Tests made via the sensor.

Thermographic

Thermographic sensors detect emitted heat signatures in the far infrared and convert them into a visible image. Infrared sensors work in the near to mid infrared range, which is generally reflected infrared light. All colors are lost in thermographic and infrared.

Ultraviolet

Ultraviolet sensors cannot generally detect anything in the visible spectrum, and are useful only when there is a source of ultraviolet light, such as FAB or UV lamps. Ultraviolet sensors are also useful for detecting characters or objects that have been "tagged" or marked with UV-sensitive dye.

PRESSURE SENSOR SENSITIVITY LEVEL

Sensor	Normal	Animals	Drones
Pressure Mesh	7	4	3
Pressure Pad	7	3	4

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Proxy Emitter	6	—	4/48 hrs	200¥	2	Legal



PEROMONE SCANNER TABLE

Condition	Perception Test Modifier
Light Exertion (jogging, light lifting)	-1
Heavy Exertion (running, fighting, heavy lifting)	-2
Menstruating (females only)	-2
Tailored Pheromones, Level 1	-1
Tailored Pheromones, Level 2	-2
Cultured Pheromones, Level 1	-2
Cultured Pheromones, Level 2	-4
Clean Metabolism Bioware	+4

AREA SENSORS

Area sensors monitor a specific contained area (usually a room or hallway) for environmental changes.

Motion Sensors

Motion sensors usually transmit an ultrasonic field and react to changes in the field when someone enters the area. Simple ultrasound detectors (see p. 293, *SR3*) can detect the presence of an ultrasound field within 5 meters. Player characters can defeat motion sensors by moving very slowly through the area, one half-meter per Combat Turn, and making an Opposed Test between Stealth skill and the sensor's rating. An unsuccessful test triggers the alarm. Moving faster than one meter per Combat Turn raises the target number by +1 for each additional quarter of a meter moved.

Characters may also move faster (2 meters per Combat Turn) by using an ultrasound emitter/detector (see p. 293, *SR3*) to spook or confound the sensor. To do so, make an Opposed Rating Test; Stealth may be used as a Complementary skill. Apply a -1 modifier for each half meter slower than 2 meters per turn the character moves.

Sound/Vibration Detectors

Vibration detectors are small microphones affixed to doors, fences, windowpanes, floors, and so forth that pick up noise or vibrations from movement and transmit them to a computer for analysis. If a shadowrunner knows that a sound/vibration detec-

tor is there, she can attempt to move undetected through the area by winning an Opposed Test between her Stealth skill and the vibration analysis software's rating. The character may move only half a meter per turn when trying to avoid detection. Characters who want to move faster (1 meter per turn) must add +3 to the target number of the Opposed Test. Characters who move faster than 1 meter per turn automatically set off vibration detectors.

Pheromone Scanners

Pheromone scanners detect the pheromones a metahuman body releases into the air. They are primarily useful in detecting people who have hidden themselves by technological or magical means from more mundane security devices. Pheromone scanners can distinguish between metahuman and animal pheromones, but are not yet accurate enough to pick out an individual. In order to pick up the scent, the scanner rolls its rating against the character's or animal's base signature (6 for most metahumans, 5 for

trolls—see p.104, *CC*), modified by various circumstances (see table).

Some facilities may use pheromone scanners as a biometric key for maglocks, though this is only applicable for users with tailored pheromones or scent gland bioware.

SCANNERS

The following rules apply for MADs, chemsniffers and cyberware scanners.

MADS

Magnetic anomaly detectors detect metallic substances. In order to detect a weapon or other metal item, the scanner rolls its rating against the Concealability rating of the weapon or item—any success detects it. Note that visual Concealability modifiers from lined coats and so on do not affect this test, as they have no effect on the magnetic field. MADs can also detect etcher taggant nanites with a Rating (3) Test.

Chemsniffers

Chemical detection systems analyze molecules in the air, and are specifically designed to detect explosives or ammunition propellant. To determine if a chemsniffer detects explosives or ammo, make a Rating (10) Test, modified as per the Chemical Detection Modifiers Table. One success is all that is needed to detect the explosives or ammunition.

CHEMICAL DETECTION MODIFIERS TABLE

Situation	Modifier
For each 8 standard rounds (or portion thereof)	-1
For each 6 explosive rounds (or portion thereof)	-1
For each 1 concussion or fragmentation hand grenade	-1
For each 2 smoke or flash grenades	-1
For each 3 mini-grenades (any type)	-1
For each 30 grams of standard (non-plastique) explosive	-1
For each 100 grams of plastique	-1
Explosives/ammo contained in plastic	+1
Explosives/ammo hermetically sealed	+4



CYBERWARE SCANNER TABLE

Implant Grade	Target Number
Standard	3
Alphaware	6
Betaware	8
Deltaware	10
Essence 4 or less	-1
Essence 2 or less	-2
Essence 0 or less	-3

Successes	Information Revealed
1	Location of cybernetic devices (head, arms, etc.)
2	Rough number of cybernetic devices
3	Category of cybernetics (brainware, senseware, bodyware, etc.)
4	Purpose of cybernetic device (eye mod, reaction mod, etc.)
5	Rating or grade of cybernetic device (betaware, electronic mag-3, etc.)
6+	Model of cybernetic device (Zeiss Adlerauge Cybernetic Eyes, Ares Pericles Smartlink-Z, etc.)

Cyberware Scanners

Cyberware scanners use ultrasonic and magnetic scanning to pick up implants. When used on a character with implants, make a Rating Test against the appropriate target number from the Cyberware Scanner Table. Extra successes beyond the minimum required produce more detailed information on the cybernetics detected.

TUMBLER LOCKS

To pick old-fashioned tumbler locks, a character can use lockpick tools, an autopicker or improvise with some wire. If the character is using an autopicker, simply make an Opposed Test between the autopicker and lock ratings. If the autopicker wins, the lock is opened. Using an autopicker takes a base time of 10 seconds; successes reduce this period.

To pick a lock by hand, the character makes a test using Lock Picking skill (see p. 104) against the lock's rating. Apply appropriate modifiers from the Build/Repair Table (p. 95, SR3). Manual lockpicking takes a base time of 60 seconds, modified by successes.

Transponder-Embedded Keys

Transponder-embedded keys have a calibrated resistor in them that completes a circuit in the lock. In order to pick a lock requiring one of these keys by hand, an electronics kit is needed to generate the appropriate electrical characteristics. This requires a successful Electronics (Lock Rating) Test at the same time the lock is picked. If the same character is picking the lock and calibrating the electrical feed, apply a +2 modifier to both tests.

MAGLOCKS

Maglock "keys" can be physical (keypad, swipe card, proximity card, memory string) or biometric (see below), or any combination thereof.

Maglocks can be wired into and controlled via a facility's Matrix system (making them vulnerable to deckers through the Slave subsystem) and/or a security rigger CCSS system.

Maglock systems often log all usages, keeping track of the time, date and identity of each user.

Removing the Case

The first step to bypassing a maglock requires the character to first remove the case and access the maglock's electronic "guts." To remove the case, the character must make a successful Electronics B/R (Maglock Rating) Test, with a base time of 60 seconds, reduced by successes. Failure simply means the character has not removed the case. If all else fails, the case can be smashed or shot off; treat the case as if it has a Barrier rating equal to the maglock rating. Overzealous attempts to break the case may harm the electronics inside.

Anti-Tamper Systems: Some maglock systems come equipped with anti-tamper systems, rated between 1 and 4. In order to bypass the anti-tamper circuits, compare the dice roll from the Electronics B/R Test made to remove the cover to a target number equal to (maglock rating + anti-tamper rating). If this target number was not achieved, then the alarm was triggered. It is possible to remove the case but still trigger the alarm.

Re-Assembly: After the character has tinkered with the maglock's insides, the case can be re-assembled so that it is not immediately noticeable that the maglock has been tampered with. This requires the same test as removing the case, but note the number of successes—this number is the target number for any Perceptions Tests made if the lock is specifically examined for signs of tampering.

Hotwiring Maglocks

Any maglock can simply be "hotwired" in order to circumvent it. To hotwire a maglock, the character must first remove the case (see above). The character must then succeed in an Electronics (Maglock Rating) Test with a base time of 60 seconds. Apply appropriate modifiers from the Maglock Hotwiring Table (p. 101). Failure triggers an alarm.

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Lockpick Set	10	1	6/1 wk	50¥	2	6P-V
Autopicker	8	1	10/2 wks	rating x 25¥	2	4P-V



MAGLOCK HOTWIRING TABLE

Situation	Modifier
Anti-tamper system	+rating
No electronics kit	+2
Each additional key system after first	+1
Swipe card key system only	+2
Biometric key system only	+4

Keypads

Maglock keypads can be accessed with a valid passcode. If the characters can somehow obtain the passcode, they can easily enter (though it may change on a frequent or random basis).

Keypads can also be bypassed with a sequencer (see p. 293, SR3) that brute-forces the maglock by quickly running through passcode combinations. To use a sequencer, the case must first be removed (see above). Make an Opposed Test between the sequencer and maglock ratings. If the sequencer wins, the lock is bypassed; extra successes reduce the 10-second base time. If the maglock wins, an alarm is triggered. In the case of a tie, the full 10 seconds pass, and a new opposed Test must be rolled.

Memory String

Encrypted code strings can be stored inside a user's headware memory or data lock cyberware. The user jacks in to the maglock, which then verifies the code's authenticity. To bypass such a system, the code string in a valid user's head must be accessed and decrypted. Once the string is discovered, it can be encrypted and stored inside another character's headware memory.

Proximity Cards

Proximity cards contain a particular electromagnetic pattern or micro-range radio beacon. The maglock detects the card when it comes within range, which can be anywhere from a few meters away to swiping the card up against a reader. Proximity cards are favored because they are quick.

Swipe Cards

Swipecards usually carry identifying information in a barcode or microchip. The card must be swiped through a card reader for the user to pass. Swipe card maglocks can be bypassed with a maglock passkey (p. 293, SR3). Using a passkey does not require removing the case; the passkey is simply slotted in the reader and an Opposed Test is made between the passkey and maglock ratings. If the passkey wins, the lock is bypassed; extra successes reduce the 10-second base time. If the maglock wins, an alarm is triggered. In the case of a tie, the full 10 seconds pass, and a new opposed Test must be rolled.

BIOMETRIC SCANNERS

Biometric systems work by measuring a "print" (finger, retinal, voice, etc.) from the user and checking the measured print for matches in a database of authorized prints. This means biometric scanners almost always have a Matrix or CCSS connection. Because the print-matching takes place in a remote database, biometric scanners tend to be harder to bypass. If the characters can access the database (whether by decking or other means), they can modify it to include their own print records as authorized personnel. This is a risky route, however, as the system will retain their records and log what they accessed (unless those records are also modified later).

Breath

Breath scanners rely on exhaled particles. In order to get enough particles for the scanner to use, the person needs to cough into the sensor. The particles are then filtered and genetic material extracted from the saliva and mucus contained in the exhaled breath. That material is then analyzed like a DNA scanner (below). In order to fool such a system, a sprayer must be used to deliver a sample of the correct genetic material to the sensor preserved in a specially formulated enzyme bath. The sample has a Rating 8 starting from when it leaves the body; this rating decreases by 1 point per half hour; if a Preserve spell is used, it loses 1 point per hour. The enzyme bath can be synthesized in a chemistry shop with a Chemistry (4) Test and a base time of 8 hours. If not kept chilled, the enzymes will degrade, losing 1 point of rating per half hour.

Cellular and DNA

Cellular and DNA scanners collect a sample of the user's cells (usually off the finger/palm, though occasionally mouth swabs, hair suction or other methods are used). Cellular scanners examine the "fingerprint" of the cell's exterior. DNA scanners extract DNA from the cells, amplify it and then compare it against a profile stored in a system. Either way, the sample is reduced and analyzed, making it unsuitable for a material link.

"Dead" cell samples from an authorized user can be used to fool cellular/DNA scanners; make an Opposed Test between a Rating 8 and the scanner rating. Cells lose 1 rating point per half hour; if sustained by a Preserve spell, the rate drops to 1 point per hour.

As an additional layer of security for DNA scanners, authorized users can be required to carry marker taggant nanites (see p. 95, M&M). When the scanner performs genetic testing, it also checks for the appropriate nanites.

Facial Recognition

Facial recognition scanners use imaging lasers, thermographic and/or ultrasonic waves to map a person's face. These are one of the least intrusive, but also least accurate, biometric recognition systems. Facial recognition systems are useful not just for letting authorized people in, but also for identifying unwanted people and keeping them out.

Prosthetic makeup and biosculpting can be used with varying degrees of effectiveness against facial recognition; using either requires a Success Contest. The facial recognition system

makes a Rating (4) Test; apply a +2 modifier if the system is picking faces out of a crowd.

A character trying to avoid recognition makes either a Stealth (4) Test or a Disguise (4) Test (see Disguise skill, p. 104) if using prosthetics, while a character using make-up and prosthetics to pass as someone else makes a Disguise (6) Test.

If a character has undergone cosmetic surgery (p. 146, *Man & Machine*), the facial recognition scanner must succeed in a Rating (8) Test to not be fooled; apply a +2 modifier if the character has the Natural Look surgical option.

Finger and Palmprint

Finger and palm print scanners work by passing a laser over the finger or palm and comparing it against a database of authorized prints. There are several methods that can be used to bypass them.

A finger or palm still attached to its living owner always works properly for a print scan. Actual fingers or hands, removed from the owner, may be used, but require an Opposed Rating Test between the digit/hand and scanner. Removed appendages have a rating of 8, but lose 1 rating point per hour after being removed. Proper care of the appendage, such as casting a Preserve spell on it, can slow the rating loss to 1 point per 3 hours. Note that some advanced systems detect the electrical resistance of the hand to determine whether the appendage has been severed or not. These guidelines also apply to the use of a finger or palm still attached to a dead person.

If a sample of the original finger/palm print is obtained, there are several methods to duplicate the print. First, nanite fingerprint mappers may be used (p. 92, *M&M*). Second, a synthetic glove-like membrane (a "sleeve") can be created with a cellular glove molder. Third, a laser-etched polymer coating can be applied directly to the hand; this has the advantage of counteracting the loss of conductivity. The polymer loses its effectiveness the longer the hand is used, at a rate of 1 rating point per hour (double this rate in the case of climbing, fighting or other exertion).

If any of these synthetic prints are used, make an Opposed Rating Test between the scanner and the fake print. If the print wins, access is gained. If the scanner wins, an alarm is triggered. On a tie, the system requests a re-try.

Retinal

Retinal scanners use a low-powered laser to examine the retina. Both retinal duplication (p. 300, *SR3*) and nanotech retinal tailors (p. 94, *M&M*) can be used to trick retinal scanners. Eyeballs liberated from their original owners are useless with retinal scanners. Eyes still in the head of a dead person can be used, make an Opposed Test between a Rating 8 and the scanner rating; these

eyes lose 1 rating point per half hour. If the head is preserved with a Preserve spell, the rate drops to 1 point per hour.

Retinal systems can be dangerous to intruders. If a security rigger triggers an active alert, the laser's output can be increased to lethal levels against unauthorized users, dealing damage as the Ares Redline (p. 30, CC) bypassing any armor and resisted by unaugmented Body.

Voiceprint

A voiceprint scanner samples a speaker's voice with a microphone and matches the voice pattern. Characters can defeat voice scanners by coercing an authorized user to speak, but such systems often have keywords (known to authorized users) that will automatically trigger an alarm if spoken.

An audio recording of an authorized user's voice can be used to bypass voiceprint scanners, if the recording is good enough. Make an Opposed Test between the rating of the scanner and the rating of the recorder used to record the voice. The system that generates the most successes wins. Ties produce no results for either system, and the recognition system repeats its request for a response. Accessories to the voice modulator cyberware (p. 301, *SR3*) can also be used to mimic or playback a voice recording in order to bypass such systems (make the same Opposed Test as described above).

For additional security, voiceprint scanners may require the user to speak a specific passphrase.

SMART WALLS

Using "embedded sensor technology," smart walls are virtually indistinguishable from normal walls. The nanotech-devised sensors they contain are incredibly hard to detect: Concealability of (8 + sensor rating) per unit. All sensors in a smart wall unit must be of the same rating. Range of the wall unit is per sensor and tied to the rating of the sensor. All Smart Walls must be connected to a CCSS system, utilizing one router per wall unit; a central router unit ties together all wall units. Getting by smart walls is the same as for any other kind of sensor, if you can identify the sensors.

CCSS INFRASTRUCTURE

The closed-circuit sirmsense systems used by security riggers are described in detail on p. 45, *R3*.

Access Points

As described on p. 49, *R3*, the first step to subverting a CCSS system is to tap into it. To crack open a CCSS-linked device, follow the same procedure as removing maglock cases (see p. 100). CCSS devices may sometimes be fitted with anti-tamper circuits.

If the character can find a master or auxiliary access point, she does not need to crack open the casing nor is a dataline tap

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Cellular Glove Molder	4	5	(rating + 2)/1 wk	rating x 1,000¥	2	8P-V
Cellular Glove (blank)	8	—	(rating)/1 wk	rating x 200¥	1	6P-V
Polymer Print Coater	3	5	(rating)/2 wks	rating x 1,000¥	2	6P-V

Gear	Concealability	Weight	Availability	Cost	Street Index	Legality
Professional Audio Recorders	5	2	(rating)/(rating x 2) days	rating ² x 100¥	1.5	Legal



necessary—the rigger can simply jack right in. The master access point for any CCSS system is the control center, where the on-duty security rigger can be found. There are no extra security features to a master access point, so it must be secured as any other room. Auxiliary access points allow roving security riggers to both debug equipment faults and provide backup to the primary security rigger. Both master and auxiliary access points provide direct access to the CCSS system, and auxiliary access points are usually heavily disguised, secured with locks and under scrutiny by the system.

Matrix Interlinks

CCSS-Matrix interlinks provide a means for CCSS systems to control Matrix-based security devices. One-way interlinks only allow communication from the Matrix system to the CCSS system and are useful for monitoring legacy Matrix security devices. Two-way interlinks allow full communication between the Matrix and CCSS systems. An interlink must have a rating equal to the encryption level of the CCSS system to translate the Matrix signals.

Integrated Control Centers

Integrated control centers combine the CCSS control center with a Matrix-interlinked secured cyberterminal, Prometheus fiberoptic observation network (p. 91), multiple display screens and redundant jackpoints. Integrated control centers cover CCSS, Matrix and even magical security all in one place.

ACTIVE SECURITY MEASURES

There is a vast array of active security measures that can be deployed to deal with intrusion threats—too many, in fact, to describe them all here. In addition to trained security guards, patrolling drones, automatic gun-port systems and paranormal animal or cybered guard critters, a few specific measures are described below.

Gas Delivery Systems

Because timing is everything when determining the effectiveness of a gas-dispersal system, the gamemaster should use the following rules to determine how quickly the gas spreads, how quickly the characters notice it (if at all) and how quickly they can take action.

Dispersal systems can fill an area of 30 cubic meters in one Combat Turn (3 seconds). No simple way exists to determine exactly how quickly the gas spreads, but the following guidelines should serve in most cases. Gamemasters should feel free to make any on-the-spot modifications necessary.

The gas will spread at a rate of about 10 cubic meters (roughly 2 meters high, 2 meters wide, by 2.5 meters deep) every second. Approximate this by having the gas spread 10 cubic meters each Initiative Pass, up to a maximum of 3 Initiative Passes per Combat Turn.

The gas starts spreading at the end of the Initiative Pass in which it was triggered, and always goes last during each Initiative pass. Characters who have Delayed Actions may make a Perception Test at the time of exposure to recognize the presence of the gas by rolling a number of dice equal to their Intelligence against a Target Number of 10, using the appropri-

ate Perception Test modifiers. Characters equipped with a gas detection system (see p. 293, *SR3*) may be alerted by their gear.

See p. 250, *SR3*, or pp. 117–121, *M&M*, for details on various gases and how they will affect characters.

Note that gas-based security systems are difficult to detect and react to, and give players little or no chance to deal with a bad scene. Gamemasters should always try to provide the players with some sort of solution to a situation. No-win is no fun.

Nanotech Taggant Gas

Nanotech taggant gas is an odorless, colorless gas containing nanotech taggants (p. 94, *M&M*). The taggant gas is delivered via a spray tank, gas grenade or gas delivery system (above). Exposed characters inhale the taggants through their respiratory system.

Any character who breathes within the taggant cloud is exposed to the nanites. Nanite loss is also a reality with taggant clouds. To determine the percentage of nanites inhaled, use the following formula: (character Body – air filter rating) x 5 percent. For every full Combat Turn of continued exposure, increase the amount by (Body) percent. Once inhaled, treat the taggants as a regular free-floating system (nanite loss of 3 percent per day). If the character has any sort of blood filtering cyberware or bioware, nanite loss is escalated to ((filter rating + 1) x 3) percent per day.

MATRIX SECURITY

With the introduction of CCSS systems in the early 2050's, companies have moved security for buildings off the Matrix and onto dedicated systems. There are still some legacy systems, however, used because of the low cost. Security devices attached to a Matrix host are accessed by successful Slave operations. Intrusion countermeasures can be utilized to protect slaved devices, such as Scramble IC sitting on a security camera or Sparky IC monitoring a security door's slave node.

Matrix security is described in detail on pp. 199–230 and 237, *SR3*, and p. 110–123, *Matrix*.

MAGICAL SECURITY

Astral security is described on pp. 88–91, *MITS*.

Fluorescing Astral Bacteria Devices

Fluorescing astral bacteria (pp. 90–91, *MITS*) is a form of astrally-sensitive (Strain-I) or dual-natured (Strain-II) genetically-engineered bacteria. FAB can only be used in a security context if applied with special equipment.

Strain-I FAB is deployed from container tanks via injector nozzles into sealed areas as an odorless, colorless gas. When an astral form passes through the area, the FAB dies and fluoresces UV light. UV sensors can detect this light and trigger an alarm that an astral intruder is present.

Strain-II is held in nutrient solution inside FAB containment units sandwiched between walls, creating an astral barrier.

Prometheus Fiberoptic Observation Network

Spellcasting through the fiberoptic network is more difficult than standard spellcasting. For every 50 meters of distance the observation camera is from the security mage, a +1 modifier to the Sorcery Test target number and +2 modifier to the Drain Test

FIBER-OPTIC OBSERVATION NETWORK RANGE MODIFIERS

Range*	0-50	51-100	101-150	151-200	201-250
Sorcery Test modifier*	+1	+2	+3	+4	+5
Drain Test modifier	+2	+4	+6	+8	+10

* Range is from caster to camera (not caster to target).

target number are added. Also, because of the extreme dependency on the available light, all target number modifiers due to insufficient lighting are doubled. Only spellcasting can be accomplished through the Prometheus; spirits cannot be commanded or conjured, nor can astral perception be used. It is unwise to cast elemental manipulation spells through this system, as they take a direct physical path from caster to target (i.e., through walls, cubicles and everything else in between)—which would be spectacular, but messy.

The Prometheus Fiberoptic Observation Network has a maximum range of 250 meters.

NEW ACTIVE SKILLS

Players will find the following new skills helpful when dealing with security systems.

Disguise (Intelligence)

This skill covers the use and creation of prosthetic makeup, wigs, false beards, and so on to alter a person's appearance, usually for entertainment purposes or to evade notice. This skill should not be confused with hiding, which is the province of the Stealth skill.

Defaults: Intelligence attribute

Specializations: Cosmetic, Theatrical, Trideo

Lock Picking (Quickness)

The Lock Picking skill governs the ability to defeat mechanical locks. Use of this skill requires appropriate (or at least improvised) tools and is useless against maglocks, though it can be used as a Complementary skill with Electronics (Security Systems) against mixed electronic/mechanical systems.

Defaults: Quickness Attribute

Specializations: Cam, Dimple-Cylinder, Pin Tumbler, Safecracking, Wafer, Water

Security Systems (Specialization of Electronics)

This specialization of the Electronics skill (p. 88, SR3) covers the ability to operate and understand all forms of electronic security systems and the devices used in them. The Build/Repair version covers installation, testing and repair.

NEW KNOWLEDGE SKILLS

One drawback to using realistic, high-level security systems in a *Shadowrun* game is that the players themselves are often not as well-versed in how security systems work and how they can be circumvented as their characters should be. This is where secu-

rity-oriented Knowledge skills come into play. Players can use their character's Knowledge skills to evaluate security systems and determine what tricks they can use to get around them—information the players might not know, but that the gamemaster can provide if a successful Skill Test is made. Likewise, if a character is in risk of running afoul of a security system simply because the player doesn't know better, the gamemaster can ask for an appropriate

Knowledge Skill Test. If successful, the gamemaster can warn the player about what the character is doing wrong in light of the character's skills. The target numbers for these tests should be determined from the Difficulty Numbers Table, p. 92, SR3.

Civil Engineering

Civil Engineering is the science of excavation, tunneling and building structures. Characters skilled in this can design, plan and oversee projects dealing with the removal of earth and stone and the correct building of structures. It can also be used to spot a structure's weak or strong points, or as a complementary skill to Demolitions (p. 88, SR3) to minimize collateral damage in a building when using explosives.

Specializations: Tunneling, Commercial Construction, Home Construction, Industrial Construction, Excavation

Security Companies

This skill represents a character's knowledge of companies that are wholly or partly security service providers. It covers information on how these companies operate, the types of security they can provide, common equipment used, the quality of services and general information on what to expect when encountering them, whether through legitimate means or not.

Specializations: By company

Security Design

This skill allows a character to design and/or implement a security system. It can also allow a character to follow and predict the layout of a specific security system through observation. It can also be used as a Complementary skill for Perception Tests to spot hidden security devices or other security features.

Specializations: Closed Circuit Senses, Matrix, Magical, Physical, Corporate, Military, Private Home

Security Procedures

Security Procedures represents the character's knowledge of standard security protocols and philosophy. This skill may be used as a Complementary skill when dealing with security personnel to represent the familiarity with the jargon and general security activities employed. It can also be used as a Complementary skill for Perception Tests to spot hidden security devices or other security features. Finally, Security Procedures may provide an understanding of what response a security system may take towards an intruder or alert.

Specializations: By company, Government, Military

CULTURE SHOCK

Y'know, sometimes I've been accused of being humorless; cynical; maladjusted and even overly serious. And that doesn't even touch the heartfelt missives that grace my virtual doorstep every time I jack in. After a while, you begin to get the message.

My response to this unwarranted criticism is that shadowrunning is a serious business. If you don't respect the dangers inherent in this livelihood, you're likely to end up as another statistic in the daily newsmag Lone Star blotter. All the same, that doesn't mean I don't have a bead on the lighter side of life. I can have a good time as well as the next guy. I've got my fave combat biker team (Go Wolves!). I like to watch hoops once in a while. Hell, I even caught a concert last month. And you'd be amazed how many trid/sim rentals I go through in a year.

It was during one of these recent relaxing culture binges that I realized that modern entertainment had as much right to be in this file collection as the latest wizzer tech toys. If you have trouble keeping pace with the state-of-the-art in electronic gizmos, the rate of change in the music, fashion and art scenes (to name just a few of the cultural arenas our society dabbles in) will leave your head spinning in the dust.

To highlight that concept, I've linked into a few mainstream datafeeds to commemorate the year that was (and to look ahead to what 2063 might have to offer). To those that haven't tried it, the entertainment industry is a boiling place for shadow work. I know many happily (and regularly) employed individuals who don't work for any other Johnsons and prefer it that way. Where else can you rub knuckles with the stars of stage, trid and 'Trix and get paid for it? Not to mention the chance to make a rep that'll cast shadows across every screamsheet and trid screen in the world.

The articles here are straight out of NewsNet and its myriad of different, yet still plastic, flavors. I've left them pretty much intact, which includes the lovely ads (all residual subliminals removed) and all that crap. This is for the benefit of those who don't get out much.

Comments, suggestions and other similar commentary can be posted after each article. If you've got something useful, put it up. And remember, the posts here could be fiction—any resemblance to persons living or dead may be purely coincidental. Play at your own risk.

• Captain Chaos

Transmitted: 05 January 2063 at 10:25:07 (PST)

CRITIC'S CHOICE: TOP TEN ALBUMS OF 2062

From *MusicNet* hostzine, Hans Grassler reporting

2062 saw an influx of popular new artists rise to challenge the old guard, just as a few music legends returned from the grave to shake their fans down once again. In no particular order, here are my top ten picks of the year:

1. **Talking in Circles** by Andrea Frost. This stellar solo album by Frost shows an edgy, yet ethereal, side of the famous Concrete Dreams singer. When asked if Concrete Dreams would be returning, Andrea flashed an enigmatic smile and said "Wait and see." We're waiting, Andrea.

2. **The Mother of the Sea** by Shield Wall. After both creative disagreements within the group and Jay Keith's three-year recovery from a near-fatal auto accident, the long awaited rock opera finally hit the stores in 2062. It's a masterpiece, and the current tour is equally breathtaking. Don't miss this one.

- Did anybody pick up on Shield Wall's "difficulties?" A friend of mine was in the car that hit Jay K, and it wasn't an accident. It's only too bad the idiot didn't take to the scare. The next time won't be so gentle.
- Jackhammer

- Wow. What an utterly ineffectively way to claim glory for something you didn't do.

- Aunt Acid

- Jackhammer is on the money. Expect Jay Keith and his bandmates to start having some "accidents" next month. He pissed off the wrong people with his "artistic integrity." If he hadn't stole half the current album from Molra Thornton without credit, he might not be having these problems.

- Concrete Dreamer

3. **Time to Die** by CrimeTime. This verbal ork stylist from Vladivostok has taken the music world by storm. *Time to Die* is a primal slice of synth-hop playfulness and candor, with the grimy edge of the sprawl in every cut. His European tour kicks off in February.

- Look out for CrimeTime to burn bright for the next six months, then burn out altogether. Chiphead tuskers from Russia ought to know better than to piss off the Vory for the fun of it. When he comes home to find out what happened to his family, he's going to crack faster than plasticrete under fire. Should be fun.

- Giorgio

4. **Playing House** by Erosthesis. The veteran band known for championing alienated groups is turning to a new topic: the Salto occupation of San Francisco. Inspired by events in their old stomping grounds, the Haight natives are at their best in this album. They've traded their usual deeply layered

sound for a hard minimalist arrangement that's as raw as their lyrics and doesn't pull a single punch.

- Scrap that drek. If I want social commentary, I'll visit a SIG and listen to people whine. You want to hear a real band, head over to Grid Snap tonight. The Silicon Surfers are playing. Now that's some real music, man.

- Bull

"The Best Ork Decker You Never Met!"

- Chummer! I can't believe you like the Surfers, man! They sold out to the corp years ago—and here I thought you had taste. Another role model, down in flames.

- Traveler Jones

- Both of you are drekwits—you don't know what you're missing with Erosthesis. And Jones, the only thing that's sold out is your fixer to Lone Star.

"Shades of Oriental pleasure / steal across the streets / a plague of suits and gelsas / bloody hands pull up the sheets." Erosthesis—A Plague of Shadows.

- Fan Addict

5. **Body Rhythms** by Eddie Mwabe. This Rio de Janeiro native lays down a sensual feast, with bio-synth rhythms woven through South African and Amazonian-influenced instrumentals. A passionate and erotic treat.

6. **Elektron Welle** by Synaptic. The bleeding-edge of Electron Wave, these German artists have rendered up a funky, fractalized fiesta of sound, taking their recent sabbatical in the PCC grids and turning that into this nova-hot album. Extra cuts are available on their host. Check it out at Seattle LTG 206-MOBIUS.

- It's amazing that they can spare the time between their pay-data raids on some of the local corps. That hit they made in the PCC has both GridSec and the G-men closing in. Hell, even I'm just waiting until the bounty gets high enough to make it worth my while before I send the data downwind.

- Anon

- Funny name. If you knew half of what you think you do, you'd never have dared to mention it in public. Or maybe you're just that fried. Either way, I look forward to overlooking your obit in the daily Shadowland "Stupid Runners Who Bit It" section. Ta.

- Earl Grey

7. **Who Calls the Nightbird Home?** by Ghost Bear. This group out of the Sioux Nation has harnessed the traditional rhythms of their tribal ancestry and combined them with a high-tech, high-energy trek through the Sioux Legend of the Flute.

8. **Áltú** by Deirdre. This audacious young woman from the Tir both embraces her elven heritage and reaches out to the





rest of the world with her debut album. The hottest cut, "Tell Me What You Want" makes use of lyrics in both English and French with a Sperethiel descant over the top, creating a shimmeringly rich and surprisingly clear sound.

- Dierdre's little more than a front for the Tir. She's the latest "Oh look, we're really friendly Elven Lords and Ladies" drek to be sent touring around by Surehand.

- Tulkas

- Well, what can you expect from Surehand's illegitimate daughter?

- Spes

- Screw that, she's running for Rinelle. Just because Daddy is Surehand doesn't make her automatically Daddy's Little Girl. Especially after Surehand canned her mom after their affair was over and let the two of them rot in the slums of Portland.

- Parsifal

- You believed that, did you? She's smarter than I thought.

- Spes

9. **White Crowz** by Plastosapiens. This CAS group knows no limits. Fueled by the smoky voice of Chantelle Taylor and driven by synth-bassist Johnny Bale, this album takes the traditional sound of New Orleans's jazz clubs and turns it on its ear with an Asian/Haitian infusion that can't be stopped.

- In other news, Plastosapiens is doing a wide-scale casting call for runners. Seems they're tiring of the Iron hold that BMG has on them, and "contract disputes" are in the planning stages. Available now, at a local fixer near you.

- Neon Wraith

- Y'know, Wraith, if that wasn't you saying that I'd be going out of my way to show it up for the buldrek it obviously is. As it is you, however, I'll just have to wonder—how did BMG arrange to hire you?

- Chantuse

- Why, Ms. Taylor. Didn't realize you knew your way around. Kudos, fair lady. If you do find yourself in need of my services as a fixer, you have but to ask.

- Gideon

10. **Blazing in the Night** by Melody Tyger. The follow-up to her double-Orichalcum album, *Fearful Symmetry*, Dunkelzahn's favorite recording artist has delivered a stunning performance yet again. In a change from her previous style, this album's cuts deal largely with meta-sexuality and genderfication issues, instead of the larger social commentary we're used to hearing from her.

- If you want the real cutting edge of music, you won't find it here. Every name on this list ranges somewhere between rock star and Idoru. The real groundbreaking music is in the underground, in the drekhole clubs and back-grid hosts where "culture" isn't automatically associated with "credstick."

- Slamm-01

BANDWIDTH: ENHANCED PERFORMANCE

by Indra Kelly, *MusicNet*

These days, you can't go to a concert without being overwhelmed by the special effects budget. The days of small intimate performances in a large concert setting are long gone, and spectacle rules the stage. Fireworks, trid screens, illusions: these are the standard tricks of the trade, so well known that they're only considered the basic accoutrements these days. So with those ideas rapidly falling into the "yawn" category, how can a performer really set herself apart?

Various groups have tried different tactics. The Silicon Surfers are well known for their Matrix concerts, where individuals can jack in and *really* experience the music first hand. But what about acts that aren't so Matrix-savvy?

SIM-CASTING

In the latest tour by the nova-hot new group Hemlock, the band held their kick-off concert in Albuquerque, in the PCC—an odd choice until you consider the venue. They played at the University of Pueblo, where the concert hall was wired so that each seat had sim capability (a common capability for a theatre showing indie trid and simsense features, along with academic sims for group immersion learning).

As they played, a simultaneous partial sim-feed went out, raw and uncut from the performers via cyber simrig implants. For the audience, the sim was overlaid on top of their physical senses, with no RAS override to limit movement or expression. A masterpiece of emotion and adrenaline, the rave reviews and unforeseen demand for tickets caused the band to add another two performances in what's ordinarily considered one of the smaller stops on a NA tour, as well as selling out the rest of their debut tour.

The same technology has been applied to a dozen new bands, all on the Ersatz! label. A few of them are even going for a pre-recorded simsense show, designed specifically to enhance their music and carry their message.

- Hey, did anyone notice that Ersatz!'s vaunted "simulcast sim feed" has been showing up in shows by Aurica/Pollux artists? Guess it wasn't that bleeding-edge, huh?

- Buzz

- Actually, I understand that A/P is suing Ersatz! for stealing their tech. This one ought to be interesting.

- Legal Beagle

- As always, this has its less-than-savory side as well. One of the most promising new bands in Seattle, Chip Truth, "broke up" only months after signing with Ersatz!. The reality is that their lead



singer and songwriter, Doug Z, died on the operating table after a forced implantation of the cyber simrig hardware, leading the label to liquidate the other members to keep it quiet. Three others on the label have died in the last year in similar tragedies—all replaced within a couple months at most, or else the band disappeared all together. Seems they're not bothering to ask the band members if they want the equipment or not.

- Connie Connoisseur

- Doug Z isn't dead. He's hiding out while a street doc tries to put his brain back together. Seems the hardware they're using isn't exactly top-grade. I've been given to understand that they're even handing out second-hand rigs—surprising, for a "respectable" label like them. Especially since they're angling for a buyout by Yamatetsu.

- Nuyen Nick

- Hey, they're just being good corporate citizens. Didn't your mama ever teach you to recycle?

- Scag

- Something else to keep in mind: Although you're working on a partial feed transmission, it's still the emotive track the audience is receiving—i.e., the addictive one. These can be pushed up into California Hot range pretty easily, not to mention beyond. A nice thing if you want to get a loyal following, or maybe include a special message in with your entertainment. And no recordings to catch you up later.

- Mixmaster

COFFIN CLUBBING

Another new trend is reflected in Seattle's latest club, Psychlone. Psychlone is the first and largest of a growing number of "coffin clubs" popping up in some of the UCAS's larger cities. It's taken a lot of years for high-profile scandals to die down, like the band Eight Immortals and their magical audience manipulation, but spurred on by all the magic-related hype surrounding the Comet's return, Awakened entertainment is finally enjoying a long-overdue resurgence.

The club itself looks pretty unremarkable on the surface: the large open dance floor fronted by a small stage and surrounded by a few tables don't look too strange, though the rows of cozy cubicles prominently lining the walls might give the unwitting non-magical visitor pause.

On the astral side, however, the club is transformed. This is how it works: guests pay a cover charge and receive the key to a "coffin"—similar to those found in coffin hotels, but cleaner and more nicely appointed. Once inside, they lock themselves in and leave their bodies, joining the astral crowd on and around the dance floor. Lucius Kellraven, the club's owner and manager, hires magical and occasional mundane acts, choosing them not only for talent and popularity but for the sheer emotion they put into their music. The level of energy that goes pumping through here in the astral is incredible, giving Awakened patrons an experience that no mundane club could hope to rival. The

younger magical set is buzzing about the new club, and reservations are considered a must. Psychlone is rapidly becoming the hottest Awakened scene in Seattle, something that has the mon-eymen buzzing too.

- Coffin clubs are a good place for astral meets—everybody's so busy experiencing the music that they don't pay any attention to your little group off talking in the corner.

- Silicon Mage

- Something they didn't mention in the article is security. Coffin clubs employ powerful wards to ensure no one gets in without paying, and equally powerful bouncers—usually a mix of magicians and spirits—to deter anyone from causing trouble. A club in Boston barely averted a scandal a few months ago when a group of shedim spirits tried to take over some unoccupied bodies. Since then security has been a particularly high priority.

- Winterhawk

- I've heard that if you're a VIP (that is, if you pay enough) you can leave your body somewhere else and they'll let you through the wards.

- Serena

- Doesn't this strike anybody as a bad idea? You're going to go astral and leave your body under someone else's wards in the care of people you don't know? No thank you.

- Prickly Pear

- Hmm. You're right. Permit me an evil cackle as I ponder the possibilities.

- Faust

TOP TEN TRIDS AND SIMS FROM 2062

From *Simphile Matrix Zine*, John Digles reporting

2062 was a record-breaking year, with *Dragonsclaw* breaking the three billion nuyen barrier in home and box office receipts, and each of these top-ten grossing over one billion.

1. **Dragonsclaw**, an Arthaus PolyPOV sim starring Elise Nirveau and Benjamin Beals. The year's hottest action-adventure flick. Set in the Ukraine, a team of field operatives from the CAS and UCAS must stop a dragon gone mad and defuse the nuclear bombs set in its lair before it destroys the planet. ★★★★★

- I understand that Elise Nirveau's getting a little tired of both Arthaus and ol' Benji. Seems that 12 sims together is enough for her taste, but they won't let her out of her contract. And Benji's a bit ... possessive.

- Critic

- Actually, I think New Line is the one who's a bit greedy. She's been on "retreat" twice in the last nine months, both times when New Line was gearing up for a big announcement that



Die Bavaria SimSinn-Studios und Novatech präsentieren:

YO, CHUMMER!

Cool!
Der
Film
zur
Serie!

Karl Kombattmage

Ab Herbst 2063 in allen Kinos.

never came. Looks like extractions gone bad to me.

• Angel

• What are you, joking? They got her. ArtHaus is recycling and editing old sim recordings and press footage until they can get her back.

• Scoop

2. **Stardust and Angelwing**, a Dreamcatcher Studios sim starring Angela Bower and Sharise D'Anjou. A family film for all ages and an instant classic. A dysfunctional corporate family is taught to love again through the intervention of two heavenly spirits. ★★★★★

3. **Dearly Beloved**, a sim from GTC Productions, starring Sir Anthony Taylor. A reclusive eleven mage dies and comes back from the dead, possessed by an evil spirit. Driven by unholy lust, the creature sets out to claim the mage's former love, reborn into the body of a beautiful young woman. ★★★

4. **Eclipse**, a PolyPOV sim from DeMeKo starring Matthew Keller, Evanna Ni Berran, Kurt Tusker, and Kelly Esperanza. A space station faces attack by a mysterious group of saboteurs as the crew races against time in an effort to divert a comet headed for the Earth. ★★★★★

5. **Flat Beer and Moonpies**, a blockbuster indie trid starring Alex Gracchi, Danylle Kayne, and Elian Eagle Feather. A young man from rural Texas faces the choice of pursuing his dreams of a career in music or accepting his responsibilities and taking over the family business. ★★★★★

6. **Streets of Rage**, a new Yamatetsu Productions PolyPOV sim starring Fall Starr, Ilfonse Baruchi, and Kelsey Vincent Donovan. A stirring drama depicting the aftermath of the Night of Rage through the eyes of a young ork child. Released as both sim and trid. ★★★★★

7. **Corp Script**, an "indie" trid from ABS, starring Patrice Kim and Leon Sobieski. A young corporate secretary falls in love with a down-and-out thief and rehabilitates him, landing him a job as a lounge singer in the Corp Residential Entertainment District. An offbeat comedy with a dark sense of humor. ★★★★★

• Speaking of hot babes, did anyone see Patrice Kim in Corp Script? Daaa-mn. That red dress she wears in the last scene would look great crumpled on my floor.

• Class Clown

• What the frag? You mean you actually watched that piece of corporate propaganda? Damn, I come here to Shadowland to avoid all that drek. I guess no place is sacred.

• Prole

• Well no kidding, joyboy. It was an excellent film, and some of us actually have appearances to keep up. Get over yourself.

• Neon Wraith

• "I swear to God, if anyone requests 'Samurai Samba' again, I'll RIP his fraggin' arms off." <grin> That one gets me every time.

• Fanboy

• And as a point, if the corps had actually backed the film, don't you think it would have rated higher than 3 1/2 stars? I mean, look at the piece of drek that was Stardust and Angelwing. It sucked so badly that no amount of vacuum could have saved it. But it keeps the nice little wage-slaves happy and content, so UP goes the ratings. If it hadn't had that "famous" scene where you could feel D'Anjou brushing by and holding the kid between her breasts in a "motherly" embrace, it would have tanked altogether. As it is, though, it ranks five stars. Rllllight.

• Zephyr

8. **Star Brother Hunts the Sun**, a PolyPOV sim from Orion's Belt Studios starring Julian Little Bear and Kathleen Clear Sky. A young Dine woman falls in love with a Sioux man against the wishes of both their families. An updated and stylish retelling of the Romeo and Juliet story with a tribal twist. ★★★★★

9. **Elemental Endgame**, a PolyPOV animated sim-feature from Quark Studios, starring the voice talent and sim impressions of Maggie Methane and Steven La Rouche. This is a masterpiece of technical effort, incorporating live sim recordings with entirely digital visuals and yet keeping true to both formats. The sim tracks during the main zero-G battle between Methane and the Fire Elemental are mind-blowing. ★★★★★

10. **Día de los Muertos**, a PolyPOV sim also from New Star starring Rebecca Inglit and Toby Sirhan. This detective thriller is loosely based on the infamous Vampire Stalker cases in San Francisco in the late 2030s. Inglit and Sirhan play the detectives who finally track down the killer. ★★★

• Rebecca Inglit doesn't just play a chiphead on occasion, she actually is one. Her real name was Jane Simpson, and she was a chippie in a bunraku parlor two years ago. New Star wanted a new actress on the cheap, so they cleaned her up and gave

her a new chip to slot. Talk about art imitating life.

• The Producer

• If you want something to really chew on, look at this: New Star is partially owned by Roxanne Wunter, the CFO for Global Technologies.

• The Kenesian Kid
"Greed IS Good!"

VIRTUAL LIGHT AND MAGIC

by Juno McIvens, for *ArtScene* hostzine

In the last decade, a new artistic movement has started that breaks the mold of what has come before. Instead of shaping and applying techniques in the physical world, Matrix artists mold, color and shade the virtual world to suit their desires. These works of art exist solely in the Matrix, where exhibitions have broken local host usage records and attracted fans by the thousands.

The movement began underground, but in the past few years it has seen a growing emergence among the avant-garde. When the Renraku Gallery in Los Angeles hosted the first-ever wholly Matrix-based exhibit of Vaslav Smenko's work earlier this past June, entitled "Comet Dust Viruses," the art form exploded onto the scene with a vengeance. Unfortunately, so have the forged copies of his works; a situation that has led to Smenko suing the Richards Gallery for material damages.

One of the brightest stars in the virtual firmament is Roberto Wauneka, a 22-year-old member of the Zuni tribe in the Pueblo Corporate Council. Roberto is breaking Matrix attendance records with his current show, "Eagle and Coyote," on exhibit at the Governor's Gallery in Santa Fe. When we caught up with Roberto there, we asked him about the security risks.

"The art I create isn't really any less secure than any other application or sculpt you'd normally see," Roberto told us. "I custom designed not only the sculpts, but the applications and language variations that I use to create the sculpts. It makes cracking and reverse engineering the sculpts pretty difficult."

Roberto's show will be open from May 14th through July 25th, at Albuquerque's Kachina Gallery on Osuna Blvd.

• Ugh, I feel so ... normal. I think I need to go take a shower before it sticks.

• Scag

• Don't worry, Scag. You couldn't be normal if you tried.
• Rose Red

• Has anybody taken a look at the code on these? They're actually really sweet.

• Firebird

• We've played with them a bit. Nice work, with an original angle on the security. We give it a 5.4 on technical merit while abstaining on the artistic expression score. Not all of us are into the tribal look.

• Hack Tech



- Want a Wauneka original? Drop me a note. Reasonable prices, fast service.
- Raider

• Yeah, your copies are as "original" as Krill King's last collectable cup. All this is small potatoes. The real money is in liberating true originals and replacing them with forgeries, then collecting your fee or selling them off to the highest bidder. Whether it's in the real shadows or the virtual ones, rich collectors love putting the shaft to their competition, and they'll pay well to do it. God, I love my work.

- Saint

• They also take it personally. Clean up after yourselves, unless you like having enemies in high places.

- FastJack

SWEET SPOTS: 2062'S TOP 10 SCENES

by Wally Nguyen, from *Indie Spotlight* hostzine

All work and no play makes any reporter sloppy after a while, so I was really happy to see this assignment come my way. We took a poll of our affiliate offices across North America to determine for you, our reader, which nightspots were the ten best on the continent. Let me assure you that no amount of manpower was considered too great to devote to this story. Some of the most dedicated investigative reporting I've ever seen provided you with these names. After the polling was completed, a friend and I set out on the ultimate trip across North America, bar hopping and city hopping at the same time.

Several bail hearings, stomach pumps and blackout periods later, our research was declared finished and the winners were chosen. The finalists were all too spectacular in their own ways to possibly compare, so there is no particular order of precedence set within the top ten. We invite you to check out any (or all) of this year's entries. I'm pretty sure you won't be disappointed.

1. Whiskey Sour—Dee Cee, UCAS. The bar looks like something out of an

1800's gentleman's club, complete with leather chairs, a beautiful maple bar, carefully chosen artwork and soft classical music in the background, just the right level for conversation. The colors in the bar are rich burgundies and browns, setting an "old money" feel for the place. The help is elegantly dressed and helpful, and the drinks are very, very good.

The crowd here is mostly suits and politicians, but anyone who can dress the part is made to feel welcome. If you're in the mood for a calm, relaxing drink in a place that looks like a powermonger's wet dream, this is definitely the bar for you.

2. Purgatory Central—Atlanta, CAS. This hot new club is quickly becoming one of the big new dance scenes in the Atlanta sprawl. Located downtown, it's the first international venture by the owners of the famous Dante's Inferno in Seattle.

Just like its older sister, Purgatory has nine levels of dance floors. The themes are a bit more twenty-first century, with an astral level, a Matrix level, a sprawl level, a level for each element (air, wind, fire, water) and two more still to open. The private rooms are down below, and the owner's parties are considered one of the hottest tickets in town—if you're invited, you're definitely somebody.

For those of us with lesser connections, however, the club is still an excellent time. Each level has hot live music on a different night, ensuring that there's always something new to see. The staff is helpful, but the music level makes it hard to communicate what you want sometimes, especially if you're ordering during one of the live music sets. Still, the drinks are good, with a great selection of on-tap beer, both top-end soy and authentic, as well as some of the most skilled bartenders in town.

3. Emerald—New Orleans, CAS. The bars and nightclubs on Bourbon Street are legendary, but this new venture stands out even in such a swank crowd. Emerald is owned by Elenor LaGrasse, a musical patron with a New Orleans pedigree as long as her arm. Nobody but the best jazz players gets a gig at this club, and she personally oversees operations here nightly.

This club sells food as well as drink, and the cuisine here is as good as any restaurant in town—and in New Orleans, that's saying a lot. They carry a lot of imported liquors, including high-end scotch from the UK, ale and wine from the Tirs and some exotic beers and rum from the Caribbean League. If you have a taste for the unusual, you'll undoubtedly find it here. The atmosphere is casual, and the staff is friendly. Definitely for those who appreciate the finer things in life.

- If you're in New Orleans and need a score or a job, go to Emerald and ask for Genevieve. She's Elenor's personal secretary as well as being one of the best fixers in town (with her boss's support). Oh, and one more thing: Genevieve is a knockout, but don't even go there. Her relationship with Elenor is more than just professional, if you know what I mean, and she won't work with anyone who can't keep their mind on the job at hand.
- Ghede

- I hear they serve a few concoctions that go beyond the exotic—I'm talking alchemical elixirs and potions. They ain't cheap and you may not get what you asked for, but it's worth the experience.
- Leary

4. Pulsar—Albuquerque, PCC. When you think of the PCC, you think probably think of adobe and desert and stuff with feathers or blankets or something on it. The club called Pulsar not only proves such antiquated ideas wrong, it practically moons you and says unkind things about your parents for being so stupid.

Everything about this club is bleeding-edge, from the sound system to the lighting, with a heavy industrial feel to the whole bar. Plasteel, aluminum, brushed chrome and synth-rubber give a rough, dangerous feel to the place while high-tech light and trid shows dazzle the senses.

The dress code here is "anything that your mother would have a heart-attack to see you in." In other words, if you're cybered, chromed, leathered, latexed or otherwise ready to show your assets, you've got the right look. The waitstaff aren't known for their patience, but they really deliver the goods if you know what you want. The drinks are expensive, but distinctive—you can be sure that no one else is serving anything quite like them.

- If you end up in the PCC, go to Pulsar. The owner, Lazer, has some amazing connections. He can get you anything cyber for half of what you'll pay somewhere else. He can even hook you up with a god doc to install it for you. He'll also let you work part of it off, if you don't have the cred for the whole thing.
- Gearshift

- That description alone makes me want to run far, far away. Haven't you ever heard that if it sounds too good to be true, it's because there's someone behind you waiting to use you for target practice and search your pockets after you fall for it? Unless, of course, you're in it with him. Then it all makes perfect sense.
- Skeptic

5. Altitude—Denver. When you're looking for laid-back atmosphere with a hint of icy cool attitude, this bar is the place to go. Centered in the heart of the downtown district, people from all sections of the city congregate here for an atmosphere nowhere else in Denver can match. This place is decorated in colors that bring to mind the mountaintops that the area is famous for: dark granite grays on floor, seats and counters, with iridescent white as an accent and hints of blue to tease the eye. Lighting is kept thankfully dim and there's no dance floor to distract from the conversation. Dress is casual, attitude is minimal and real beer and spirits are plentiful. A definite must-visit.

- Word is that Nicholas Whitebird takes a breather here once in a while when he's not running errands for the Big White Wyrms.
- Zak

6. Al Coda—Boston, UCAS. Always wanted to go to Europe but don't have the cred? This is as close as you can get without having to get on a big shiny passenger bullet to get there. Boston has always had that "old world" feel, and this bar really plays that up. It's full of quiet alcoves for conversation, and also has half a dozen private rooms available for rent. The upstairs is home to a much more modern dance floor and live music arena. A number of nova groups have chosen the place for a small, intimate venue when in town, so keep your eyes open. We ended up attending an outstanding (and rare) acoustical performance by Darwin's Bastards when we were there, something I'll be able to tell my mythical grandchildren about someday.

Drink prices are reasonable across the board, with higher-priced alternatives for those who want something with a little more style. No food available here, but who needs it? What are you waiting for, an engraved invitation? Go!

7. ?!/?—New York City, UCAS. Y'know, it's been almost sixty years since the Big One hit NYC, and the Five Boroughs still aren't the same. You can't really find much evidence of it in Manhattan now, aside from a memorial that will leave you gasping, but it's still there. The biggest evidence of this is that the once-priest-real-estate-on-the-continent still hasn't fully come back. An exception to this is ?!/, the new club on 61st Street (known locally as "that club on 61st Street") that proves that style never left the city, whatever its detractors might think.

NYC still attracts its share of celebs, and coming here on a good night is like a walk among the stars. The line gets really long after about 7:30, so come early or wear comfortable shoes. The decorating is bold and whimsical, in black and white and punctuation wherever you go. (The bathrooms are really cool. Really.) Oh, and don't expect to come out of here with a lot of your paycred left. Atmosphere costs, you know?



8. The Gaslight—Los Angeles, PCC. The City of Angels is built on dreams, and the owners of Gaslight know that better than anyone. Owned by former sim star Angel Seraphim, the place exudes 1940's film noir, making you feel as though you just stepped into some black-and-white suspense flick with deadly dames and hard-boiled heroes that smoke too much and have no fashion sense. No dance floor here but that's okay, 'cause the execs that come here don't come to dance. Hard drinks are the specialty here, with vodka, scotch and gin all at the top of the list. Waitstaff are all ultra-friendly and looking for their first big break. Look for the old movie memorabilia in the entry, it's a kick.

9. Shinji no Sekai—San Francisco, California Protectorate. San Fran's was heavily Japan-a-influenced for years before Saito arrived. This club celebrates that fact by pulling out all the stops. Walking into this place is like diving headfirst into a Japanese-inspired pool of reflection. This multi-floored establishment takes its cue from some of the more reputable pleasure houses in Tokyo. The bar is open to anyone, while the bathhouse and private rooms require a yearly membership. Needless to say, oriental drinks are the specialty of the house, with more types of sake than you can shake a chopstick at. They have more familiar libations too—a wasabi martini is the hit of the house, if you can believe it.

- No surprise, but a lot of those bath-goers have some really detailed tattoo-work, from back pieces to full-body inks—and it's not just cuz they appreciate body art, if you know what I mean.

- Lotus Eater

10. The Strip—Las Vegas, Ute. It's Las Vegas, baby! This is a hotel bar, actually, but don't hold that against it. Everything about this place says class, with just a hint of that Casino Royale ambiance. Don't let the gold leaf fool you, though. This is a place where movers and shakers move and shake, and we aren't just talking about the showgirl waitresses.

On the ground floor of the Plaza Hotel, the crowd here changes nightly. The only regulars are the staff, but they still provide an intimate atmosphere with enough glitz to make it special. Rounded booths make for quiet conversational nooks, and that famous Vegas nightclub music pipes softly from the background, including live feeds from some of the bigger shows when they're in town. Prices are reasonable, and the staff excels at making everyone feel comfortable and welcome.

• Is anyone else pissed that Club Penumbra was left out? It's still the hottest thing going and always has the best music in town.

• Sonic

• Give it a rest already. Have you actually looked at Club Penumbra lately? The owners haven't put any money into the club in years. It's ratty, the carpet's coming up in spots and the lighting is stale. Yeah, it's a great place to go hear music, but if it weren't for the hope of surprise Concrete Dreams appearances, the place would have gone under years ago.

• Seattle Sue

• Actually, it's about to go under a major facelift. Jake Hokama died and left it to his son, Kevin, who is all about bringing the club into the 2060s. Don't worry, though, he's keeping the theme the same. Estimates put the cost for the rehab at close to 750,000\$, paid for up front by Kevin.

• Connie Connaisseur

• Where did he get that kind of money? The club doesn't do that well.

• Joey

• Let's see, Club P is a favorite of shadowrunners; Concrete Dreams views the place as their own personal home away from home and Jake was one of the most beloved old bastards on Shadowland, even though he never set foot on the grids. Gee, I don't know where Kevin could have come up with the money.

• Nuyen Nick

THE 'TRIX-STER REPORT

by Cara Oke, *Trix-ster* hostzine

Hola, omae, and welcome to this week's Trix-ster Report. Today we're going to take a look at 2062 in review, the best stories that the Grids had to offer.

• Best Scandal Involving a Major Corporate Player:

UOL's continued denial of illegal "personal services" for sale came unraveled this last March, when UCAS Feds received a tip leading them to a sysop-only virtual chat room. It seems that with the right connections (and the right cred limits) a UOL user could arrange any number of simsense encounters with a bevy of willing virtual beauties, regardless of age, metatype or style of pleasure.

The scam was sprung when missing funds from the Republican Party were traced to a holding account at UOL. Allegations that former Vice President and presidential hopeful James Booth was involved in both the transfer of funds and virtual body fluids in the sim prostitution ring were gleefully proven when the Feds caught Booth red-handed—er, you get the idea—engaging in "conversation" with a virtual "hostess."

The executives at UOL deny any knowledge of the operation, blaming it squarely on the shoulders of a trio of enterprising middle-management types. Still, it makes you wonder how so much bandwidth could go unnoticed for so long, as well as where all the cash from the venture ended up.

• I have to say that it cracked me the frag up when UOL got busted for their little virtual party room. Did you know that it was hidden under a SIG on gardening, of all things? It gives "hoe, hoe, hoe" a whole new meaning.

• A. J.

• Ow. That was so wrong and yet so right. Hurt me again, baby.

• Spudly

• Since they reported on this newflash, two of the three defendants have gone missing. One is suspected dead, while the other is still on the run from authorities. The third is in protective custody. Anyone want to take bets on how long number three lasts?

• Grim

• **Best Vandalism Without a Clue:** All through "comet season," the grids were alive with kiddies and pranksters who left comet graffiti lying around every host dumb enough not to have an automatic dump sequence. Occasionally something more serious would come up, but not often. Then in November, a big hit went down. The Knight Errant host icon actually vanished from the grid entirely, all access severed. It didn't reappear for six hours, enough time for any Trixter worth his access to notice and poke around.

After intensive investigative reporting, we discovered that when the Knight Errant host disconnected, it did so in a defensive move designed to trap a group of vandals that had attacked the host. Apparently the unidentified individuals were trying to literally rebuild the system in areas from the ground up.

The kicker, of course, is that KE is hardly undefended. It took a long battle, but in the end the invaders were repulsed or forced to jack out. The KE deckers were able to salvage the host structure intact. Rumor suggests that KE was warned in advance of the attack and had extra techs assigned to rebuild the damage as it occurred, but Knight Errant isn't saying one way or the other. Two of the vandals were killed, while KE suffered only minor losses.

• Best Scandal Involving a Wanna-be:

Remember sim star Yumiko Hime? Remember her interview last June with *Sim Scene* regarding her upcoming simflick, *The Seven Deadly Virtuals* about a computer host that achieves sentience and sets out to kill the senior programmer's girlfriend? Remember how she revealed for the first time in that interview that she was actually otaku, and had grown up in the Compi Lar tribe in the Noose Net? I thought you would.

We remained unconvinced by Yumiko's claim, to say the least, so we set out to prove it once and for all. After weeks of searching, we did manage to locate the Compi Lar tribe, though they wouldn't talk to us at first. It took weeks more of negotiation before they'd discuss Yumiko with us, but finally they broke. The truth was even more fun than the fiction.

Yumiko, it seems, had a cousin who ended up a member of the tribe. When she told her agent, they decided to offer the tribe a substantial payment in advance for the right to claim Yumiko was one of theirs. The big problem is that Yumiko made the claim a month earlier than scheduled, and that payment never came. It



seems the only hold-up in agreeing to talk to us was a faint hope on the part of the tribe's leaders that the studio would come through. Needless to say, the studio didn't see it that way.

Since we broke the story, Yumiko has been fired from the project for "artistic differences," and the studio has shed several top execs like last year's supermodels. The flick now stars Chrissie Raey, and the reviews so far are outstanding. Oh, and I wouldn't feel too bad for the otaku tribe in the Noose, either. We got the impression they could handle themselves just fine.

• **Best Tech-to-the-Masses Invention:** The Sim-Vironment, put out by Global Technologies. Appearing soon at a high-end entertainment complex near you, the Sim-Vironment takes the sim experience one step further. Without giving away too many trade secrets, it functions as a plain room that is transformed through the wonders of simsense technology to function as any kind of environment you wish (the choices conform to the basic physical characteristics of the room).

The inhabitants of the room (either through wireless 'trodes or 'jacks) are able to interact with both each other and the environment simultaneously, physically moving throughout the room to accomplish whatever actions are necessary to move through the storyline provided. The scenarios can accommodate up to five people at once and take anywhere from an hour and a half to three hours to complete. Don't worry about running out of scenarios either, as the CEO of Global Technologies has announced that new scenarios are due to be released at the rate of three every six months.

The real kicker of the Sim-Vironment is that it carefully layers sensory impressions without driving you batty at the same time. It doesn't require the least amount of Matrix-savvy to enjoy the ride, and it doesn't cost an arm and a leg to play, either.

• Has it occurred to anyone else how much could be done with a Sim-Vironment and the right program? You could carry interrogation techniques to a whole new level.

• Cleo

• And that's just the beginning. If you can get to it, take a gander at the research data Global Technologies has been hoarding on this "entertainment center" of theirs. It's impressive, but I don't think I'll be booking a birthday party with them anytime soon. Call me paranoid.

• Neon Wraith

• **Best New 'Trix-n-Treats Hot Spot:** This category was really the most subjective of any, but the answer I got from everyone was unanimous: Grid Snap, in the Downtown Seattle LTG (206-52-7289). While there are some venerable Matrix clubs out there, this one provides a whole new reason to get a datajack in and of itself. With bleeding-edge programming and simfeeds, this is a place where nearly anything goes (and they've got private rooms, too). From dancing to drinking, games to drama, Grid Snap has everything you could want on a Saturday night without the hassle of finding parking or standing in line.

The ambience and decorating schemes are drawn (hee) from old drafting programs. Everything looks like a blueprint

with little measurements and hash marks included. The virtual staff play along with this theme in their personas as well, making for some interesting waitress and waiter icons.

At the same time, despite seeming so grounded in reality, this place is all about bending the rules of the real world, from physics to chemistry and everything in between. The owners and designers have knocked themselves out to make sure that everything you experience at Grid Snap will be unequalled in the physical world, and that going to a real bar will pale by comparison. While I'm not sure this is an entirely attainable goal, the repeated visits by members of the *Trix-ster* staff seem to indicate that something good is going on there.

THE RACE FOR THE OLYMPICS

by Inigo Amman, *Sports Today!* hostzine

The race to host the 2072 Winter Olympics heated up today as three more bids were added. Yamatetsu, Tir Tairngire and Quebec have all put together serious packages for consideration by the IOC, though Yamatetsu's bid in particular is stirring up a lot of controversy.

For many years, megacorporations have used their extraterritorial status to invoke privileges usually reserved for nations. Over the course of the last half-century, corporate citizenship has become both commonplace and sought-after, as corporate citizens typically enjoy a high standard of living and significant prosperity as compared to the standard national citizen. Still, most megacorporations maintain that they are not nations, preferring to keep the two entities distinct. At least, until now.

If Yamatetsu were to secure the bid, it would mean a great deal of prestige for the company—a public relations coup of the first water. It would also significantly blur the line between megacorp and nation, a line that has grown thinner every year. It remains to be seen, however, if the IOC will seriously consider the bid.

In other Olympic news, the Salish-Shidhe Council has suspended the head of the SSC Olympic Committee, Charles Red Elk, over alleged mismanagement of funds. The suspension of Red Elk has seriously hampered efforts to sell the Seattle-SSC bid for the 2072 games. IOC officials, speaking on condition of anonymity, consider the scandal to have materially damaged the nations' chances of winning the bid. No representatives of the Seattle-SSC Olympic Committee could be reached for comment.

• The Seattle-SSC bid for the games was an unheard-of arrangement, with the UCAS and SSC sharing hosting privileges for the bid. It might have heralded a new diplomatic era between the two nations, but it looks like it's dead in the water now.

• Seattle Sue

• Well I wonder who we can blame for the sudden cooling of relations. The PCC? Sloux? Or your favorite and mine, Tsimshian? The last thing they want is a chummier UCAS and SSC, especially while this little border war is escalating.

• Smiley

- Or maybe that's what they want you to think.
- Conspir-I-See

SPORT NEWS: THE 2062 RECAP

by the staff of *Sports Today!* hostzine

BASEBALL

July 2062: Party-boy pitcher Mike Dutton of the Chicago White Sox has been outted as an adept in a press conference by NAL spokesperson Julia Weiss. Mike confessed to the charges, saying that the franchise knew of his abilities and hired him anyway. The team manager, Ian Yamaguchi, allegedly used Dutton's minor cybernetic modifications to keep the media from suspecting anything while Dutton maintained his cover by masking his magical aura. The owners of the White Sox deny the allegations, but the results of the investigation are still pending in one of the messiest Chicago scandals in years.

The Denver Ghosts made their first appearance in the league's Central Division. Their opening season showed promise of a solid team for 2063, with 65 wins and 96 losses for the season. Manager Manuel Clemente is quoted as saying, "We're very excited about the changes both in Denver and in the team as a whole, and we look forward to making an even better showing next season."

BASKETBALL

January 2062: The lead story for the year in basketball is the ongoing controversy with the Golden State Warriors. Golden State has always carried a meta-heavy team, boasting one of the highest recruiting ratios in the NABA. Suddenly, however, most of the metahuman players are receiving little, if any, time on the boards. Even eleven star forward Evan Kresler, the leading scorer for the Warriors and formerly averaging 24 points a game, is barely seeing the floor—less than five minutes per half. When Warriors coach Aaron Wu was asked about the changes, he refused to comment. It seems obvious, however, that the roster changes coincide with the political change in their home, San Francisco. Protests have become more intense with each home game, with 44 injured last weekend.

COMBAT BIKER

August 2062: The Commandos have new life, and the play-offs look to be in sight for the first time in years. With a new coach and a new strategy, the Commandos defeated the Marauders in an incredible shutout game, 15–0. Alina Bowman, linebiker for the Commandos, set a new team record for the most meters carried in a single game. During the entire time the Commandos attacked the flag aggressively at every opportunity, claiming it for their own and daring anyone to stop them. Their coach, Augustus Vega, said, "This is a new team, with a new attitude and a new style of play. Forget what came before, because we're going all the way now."

- The Commandos' new attitude is because they're hopped up on kamikaze. Charlie Bravo's the local supplier, and he's making a killing off them.
- Buzz

- What are you, kidding? It's obvious it's magic. I'm amazed the league hasn't investigated yet.
- Magister

- Who's to say they haven't? The team is lined up for the Biker Bowl. You don't expose them the day of the big game if you haven't been able to prove it before then. Too much money on the line.

- Goalkeeper

DRONE FOOTBALL

July 2062: The Montreal Mécanicien won the second annual NADF Championship yesterday by a score of 27–13 over the Detroit Rustbelts. The franchise had been in serious financial straits earlier in the year after it was discovered that an ex-employee had embezzled hundreds of thousands of nuyen from team accounts. Cross Industries purchased the team mid-season, allowing them to continue as a member of the league. When asked about his team's victory, Lucien Cross said, "Everyone enjoys backing a winner. My congratulations to the team members and management."

FOOTBALL

January 2063: Representatives of three teams in the Freedom League presented a petition today to the league commissioners for the inclusion of changelings. SURGE spawned a league controversy in early 2062 when disaster struck Tampa Bay Buccaneers star receiver Tracy Keller. One of the few leading sports figures affected by SURGE, Keller was transformed into a changeling with elongated, extra-jointed arms and digitigrade legs.

Never one to quit, Keller rallied, recovering from his ordeal and getting back into the game with flying colors. Keller's changes proved quite useful to his game, a fact that was not unnoticed by league officials, who disqualified individuals affected by SURGE from competition. Keller and the Buccaneers have appealed the decision, and they are now joined by the Houston Oilers and New Orleans Saints.

- Humanis-linked hate groups have made threats against Freedom League games if changelings are allowed to play. Large crowds always make me nervous.
- Street Knight

HOCKEY

December 2062: With six plus months to go until the Stanley Cup, the ice hockey world exploded in this month with news of game fixing and corruption. The Red Wings new star goalie, Peter Nguyen, was brought up on charges today of game fixing following the collapse of fellow team member Leroy van Buren on the ice. Van Buren is listed in serious condition at DocWagon-St. Mark's Hospital in Detroit, suffering from a near-fatal reaction to an unknown chemical compound. Nguyen claims innocence, but traces of an unknown chemical were found among his possessions. Nguyen's arraignment is set for tomorrow.

HOT STUFF ON THE ICE: THE NEW CALGARY FLAMES

by Jill Nelson, *Sports Zine* hostzine

After last year's catastrophic season for the Flames, conventional wisdom said that there was no way the AMC team could make any headway this year. The '61-'62 season left the Flames near the bottom of the standings after the deaths of three key players. Those players, Running Bear, Onique and Lang, died in a plane crash outside of Montreal following the November 14th game in that city. All taken together, it added up to an almost insurmountable obstacle.

Fast forward to this year. The Flames are currently in the running for a play-off berth, leading the Northwest Division and running second in their conference overall. Their performance has stunned spectators and opponents alike, leaving everyone wondering, "How did they turn this around?"

The answer lies in Coach Justin Cloudwing's unique approach to the off-season break. "I wanted them to remember their teammates without carrying their grief back into the game. To achieve that, some elders were kind enough to perform the funeral rituals for us, letting us send our pain and grief away and instead, to be blessed by the spirits of our fellow warriors."

Whatever Coach Cloudwing did, it sure seems to have had an effect. Karoski, the team captain, said, "I really didn't agree with the coach, but I can tell there's been a big change since the rituals. It's almost as though you can feel them out on the ice with us." Comments like those have raised some alarms with suspicious opponents, but the NHL's investigative magicians have cleared the team of any suspicious activity. The official statement says that the rituals were religious in nature, not magical, and thus have not compromised the integrity of the organization.

• Y'know, in looking at the article on the Flames, you have to think that whoever set up the hit is pretty pissed about now. Here they go to all the trouble of having the top three players killed, only to have the team come back again the next season playing as well or better.

• Argent

• You think it was a hit? Any idea who might have been behind it?

• Cutter

• Cloudwing was bucking really hard against the way the franchise owners were treating the players. I'd put my money on them, as they can't legally get rid of him until he has two losing seasons in a row and he's too high-profile just to disappear. They don't want to create a martyr, just get rid of an annoyance.

• Goalkeeper

• If I were Cloudwing, I'd be sleeping in kevlar jammies, just in case.

• Cutter

• He should guard his players better. Too bad for him.

• Anubis

• The three-way trade in hockey involving Nguyen last year between the Red Wings, Canadiens and Stars was the result of a series of runs and retaliations over a long weekend. Messy stuff, but you'd never know it from the press.

• Goalkeeper

• I wonder if the Red Wings are as happy with the deal they made now.

• Puck

• Man, Nguyen didn't do that. He wouldn't know Nitro if it bit him on the hoop. Too damn bad his locker was unlocked, isn't it?

• Cutter

• Cutter, aren't you the least bit concerned that your boasting might make it back to someone, like Lone Star?

• SPD

• Nah. Someone else is yanking your money chain on this one. I've got about as much to fear from the cops in the Motor City as I do from a retired suit wanna-be like you.

• Cutter

SOCCER

October 2062: The Cheyenne Coyotes have again suffered another run of bad luck. Players Dane Abby, Raphael Lorange and 2051 league MVP winner Marcel Kuns have been removed from the roster permanently, following unsuccessful implant surgeries. The spokesperson for the Coyotes says, "We are saddened by the loss of Abby, Lorange and Kuns. They are not only our teammates, but our friends as well." Official sources from the club indicate that the trio were undergoing standard reflex modification surgery. Sioux officials are conducting an investigation into the deaths, but have not issued a statement at this time.

• The official story was substandard cyberimplants, but that's a crock. Those records were doctored (and not very well); the implants were fine.

• The Smiling Bandit

"Strikes Again! Ha! Ha! Ha!"

STICKBALL

April 2062: The much-anticipated game between the Santa Fe Coyotes and the Phoenix Kachinas was rescheduled last Sunday after a bomb threat forced officials to clear the stadium. The PCC Conference Center in Santa Fe was the site of the attack. An anonymous call came in roughly an hour before game time, at 3:15 MDT. The caller claimed that a bomb had been placed in the building. PCC Security teams exhaustively searched the building and found four mini-charges in the basement of the stadium.

• I know there are those who think this gets you somewhere, but it doesn't. To divide the NAN will only bring an end to everything we've built.

• Prickly Pear

• Did you ever stop to think that maybe that's what we want?

• Painted Owl

URBAN BRAWL

September 2062: The Havana Guerillas have steamrolled past the competition for the second year in a row, winning the Super Brawl against Oakland 4-2. The celebrations were overshadowed, however, by the arrest of the Havana heavy Ricardo Rodriguez. Authorities have indicated that Rodriguez is a suspect in the murder of his former wife and their three children on September 21st. Rodriguez is currently being held without bail.

• Rodriguez picked the wrong people to frag with. You don't promise things you can't deliver when the bad boys come to collect.

• Gordito

• So you think he was supposed to throw the game?

• Fidel

• Everybody in the scene knows he couldn't keep his hands off the novacoke. I'd hardly be surprised if he mortgaged away his team, then found himself unable to go through with it. Too damn bad his kids had to pay for it, but maybe the next guy will wise up.

• Gordito

• Lovely line of work you have there.

• Zephyr

• Anytime you feel like paying the bills for my chica, you go right ahead. The woman spends money like water. In the meantime, go frag yourself.

• Gordito

TRAVEL HOT SPOTS

from *World Traveler* hostzine

Chained to your desk? Stressed out? Need a change of pace? *World Traveler's* top correspondents recommend the following great vacation spots.

CHRISTMAS AMONG THE STARS: SHIBANOKUJI FREEFALL RESORT

by Ethan Marquet

What do you get for the person who has everything? Another yacht? Hardly. A jeweled nightie? Boring. A gold-plated datajack with diamond studs? Yawn. It's the eternal question for those with nuyen to burn and time on their hands. And every year, when that gift-giving time rolls around and we all pull out our credsticks, we go through the same struggle all over again.

This year, Yamatetsu brings you an answer.

STICKBALL: RULES OF THE GAME

The Native American game *a-ne-jo-di* (or "stickball") resembles lacrosse, but only on the surface. It is a rough, unstructured game that focuses on athleticism and stamina, with both men's and women's versions of the sport. It is played on an open field with the goal placed in the center. It is definitely a contact sport, with many injured each year. There are very few rules, leading to a freeform and exciting style of play. The rules listed here are for organized competition play only, and may not be applicable to games being played as part of a religious ceremony.

The game is played in two thirty-minute periods with a five-minute break in between. Two replacement players are allowed per game. If a player is injured, the *conjuror* of the team (see below) immediately applies magical healing on the sidelines.

The goal of *a-ne-jo-di* is to score the greatest number of points. Injuries are common, especially among the men's leagues.

Equipment

The basic equipment for *a-ne-jo-di* consists of a small hard ball and a ball stick. The ball is traditionally made of deer hair and hide, a combination that is still used when the game is played for religious purposes. Competition balls are made of tightly wrapped cord with a leather cover.

In addition, men's leagues use two ball sticks, each a little over 60 centimeters in length. The sticks are traditionally handmade of hickory. The end is hooked, with leather lacings across the loop to form a net. While these sticks are still used in ceremonial games, the competition ball sticks are made from wood, lightweight metals or plastics. Women's leagues use their hands instead of sticks.

Apparel for the game consists of light shirts, shorts and athletic shoes as well as lightly padded leather gloves for the women.

Players

In each competition game there are two teams with twelve players on each side. There are no formalized positions such as offense or defense; instead, every player is expected to do both as needed. The only set positions aside from the players are those of the officiating priest and the *conjurors*.

The officiating priest is necessary for every game, regardless of its official competitive standing. He or she opens the game by tossing the ball into the field and is responsible for stopping the game if necessary for injured players. He also ensures that everyone stays true to the nature of the game, and offers the opening prayers.

The *conjurors* function in much the same manner as coaches do in other sports, but their role in *a-ne-jo-di* is far more pro-active. The *conjurors* are traditionally shamans who specialize in health spells. They are responsible for leading their team to victory and are allowed to enchant their players as desired in order to achieve that goal. *Conjurors* are not allowed to magically

Continued on page 120

affect the opposing team's players, the ball or the playing field. Spirits are not allowed to play on the team.

Magic is prized in a-ne-jo-di, in a stark contrast to most other organized competitive sports. Adepts are welcomed among the ranks of the players, though magical powers are not considered an adequate substitute for teamwork or skill. Cybernetic enhancements are strictly taboo as well, including both cyberware and bioware.

Scoring

In the center of the field is an 8.3-meter pole with a symbol (often some sort of animal representation) placed on the top of it. Hitting the symbol with the ball scores seven points. Two points are scored if the ball hits the pole.

Fouls

There is very little that counts as a foul in a-ne-jo-di. If a foul is committed, the game is stopped and the ball is put into possession of the opposing team.

Deliberately attacking another player is considered a foul, and depending on the severity (and number of occurrences) can get a player ejected from the game.

Using magical effects on the opposing team is considered a foul, and penalties can vary from losing possession of the ball to being handicapped magically to ejecting the offending conjuror from the game, depending on the severity of the infraction.

THE LADIES OF THE BRAWL: JESSIE RODRIGUEZ, SEATTLE SCREAMERS



by Jim Lucas, *Sports Zine* hostzine

Today our "Ladies of the Brawl" spotlight is on the lead outrider for the Seattle Screammers, Jessie Rodriguez. Jessie has been with the Screammers for an astounding three years, one of the longest stints by any Screammers player in the history of the franchise. She holds a league record for disabling the most opponents in a season, a rating that makes her among the most popular players out there—with both the fans and the management.

JL: Statistically speaking, you're among the best outriders in the league, with an

astounding 82% hit ratio. How do you maintain such a high level of performance?

Continued on page 121

Imagine, if you will, a secluded room, dimly lit in rose and amber. Soft music plays in the background. A window looks out on a starry sky, with a huge moon glowing pale against the inky blackness. Warm oiled hands expertly administer a full-body massage as you hang suspended in midair, with every muscle being pampered to the fullest.

Or maybe you're a techno-sybarite, an epicure of sensation and experience. Imagine plugging into a living dream so real that it completely overwhelms you, with nothing to ground you in the reality you left behind until the ride is over and you're left breathless, ready to fly again.

Sound too good to be true? It isn't. It's part and parcel of the many delights available at Shibanokuji Freefall Resort, the first orbital station devoted to recreation and tourism.

Shibanokuji has been in orbit around the earth since 2056, when Yamatetsu unveiled it at a star-studded press conference. It has operated without problems since then, becoming an off-planet playground for celebrities and corporate titans, private and public citizens alike.

This corporate-run enterprise is one of the most exclusive resorts on (or near) Earth. Space at the resort is limited, allowing for no more than fifty guests at a time. Those accommodations, however, are among the most luxurious anywhere and certainly the best that any orbital facility has to offer. The decor is definitely post modern, but the Yamatetsu designers have used lighting and fabric to soften the sometimes-harsh lines and transform the rooms into bastions of comfort. Meals are prepared by a rotation of world-class chefs, many of whom spend the rest of their time working in five-star restaurants on Earth. Expert masseurs are also available twenty-four hours a day.

Shibanokuji, however, does not stop at pampering its guests with an incredible view and a spa-like atmosphere. It takes advantage of its orbital capabilities to offer an experience unavailable elsewhere: zero gravity. While the guestrooms and the dining rooms are at the outside of the spinning station where the gravity is strongest, the entertainment portion of the facility is in the hub.

In that area, the station offers a "weightless racquetball" area, as well as special gymnastics and "flying" training rooms. It also offers zero-G massage, zero-G private suites for couples, and a zero-G simsense suite that allows for a mind-blowingly realistic sim without any outside distractions to diminish the experience. In the deluxe package, an assisted spacewalk is also among the options available and considered a "must-do" by everyone we spoke with at the station.

Shibanokuji is not for everyone. Prospective guests are carefully screened to weed out any health problems that might be complicated either by the trip or by prolonged time in a low-gravity area. Visits to Shibanokuji are scheduled in seven-day intervals. There are no shuttles available between times, but the resort does boast a top-of-the-line medical facility in a separate area of the station that handles zero-G medical procedures and research.

A seven-day visit to Shibanokuji starts at ¥750,000 and goes up from there, depending on the weight of the person and the options chosen. Meals and transit are

included. Visitors are allowed to bring one bag with them weighing no more than 5 kilos (clothing and other sundries are provided by the station for the duration of the visit). Reservations run about a year in advance (barring cancellations), so it's best to plan ahead.

- I admit, I'm giving a lot more thought to Shibanokujl for the next time I need to get out of town for a bit. Mrrowr.
- Trixster

- The staff also includes a few figures who double as "escorts." Discreet inquiries and a little extra cash to the concierge will let you make an appointment.

- Orbital Bandit

- Don't take advantage of the zero-G sim suite, though, unless you really trust your technician. Frankly, I wouldn't go in the place if you paid me, but I'm a paranoid old geezer.

- FastJack

- I'm with FastJack on this one. Sensory deprivation sim experiences make it way too easy to rewire the brain. A twist of the knob, and you could be a whole new person—literally.

- Deprogrammer

- You scags have no idea what you're talking about. It's a wiz trip ... I've never had anything else like it.

- Feral

- Lemme guess, you were there as a guest of Yamatetsu, right? I'll just bet you had fun—enough to keep you coming back again and again. Feeling any noticeable brand loyalty these days, Feral?

- Winger

- Just because you'd go back into space if you had the chance doesn't mean you're warped. And Yamatetsu's a good corp to work for, if you're half-competent.

- Rose Red

- No corp is a "good corp to work for," kid. Open your eyes already.

- Slamm-O!

A NIGHT IN ATHENS

by Fiona Stavros

When I accepted this assignment, I was naturally a bit nervous. The only images of Athens I could summon up were the ones we all saw on the trid screens, of people fighting in the streets with automatic weapons, of wreckage and burned-out shells of formerly white houses. In my mind's eye, clouds of billowing smoke obscured the once-

Jessie: <laugh> Practice, Jim. Really, though, when you love what you do, it's not hard to keep doing it. I've always loved machines and guns, even when I was a little girl. My parents were both mechanics and they taught me to know my machine inside and out. My dad was also a Marine, so there you have the marksmanship side of things. He tried to steer me towards competition shooting, but I had more fun rigging up one-shot drones and using them for target practice. Still do, in fact.

JL: Jessie, you're reaching the three-year mark on your time with the Screammers. That kind of longevity with the same franchise is unheard of in this sport, and it has raised all kinds of speculation about your plans. Have you received any offers from other teams?

Jessie: Yes, I have received a few offers, but I'm really not interested in leaving. I have a good contract with the Screammers and I love Seattle. This is home to me. I've made it known to the other parties that while I'm flattered by the attention, I'm not looking to move at this point.

JL: Would you care to comment on who some of those teams might be? My sources say that Predators have been very persistent in courting you.

Jessie: I'd be interested to see who those sources are, but other than that I have no comment, no. It's really not polite to kiss and tell, even if it's just a peck on the cheek. Besides, I'm not leaving Seattle, so it isn't important.

JL: Have you considered retirement at any time in the future?

Jessie: Not really. I'd prefer to keep playing the game for as long as possible. Someday I'll settle into private life, but I've got a lot of time left. I don't think retirement would suit me.

- So, continuing in our "spot the shadowrun" series, anyone want to lay odds on Jessie Rodriguez resurfacing in an Ares team sometime in the near future?

- Zephyr

- I've met Jessie. She's as good off the field as she is on it. I pity the team that tries to pick her up against her will. She won't make it easy on them. Hell, I only wish she'd work with me now and again.

- Joey

- But ... this makes no sense. Why would Ares make a very public offer, only to turn around and nab her once it goes bad? That's stupid.

- Rose Red

- Well, it's my understanding that Ares isn't looking for her skills as a part of the Predators, but instead as a "security consultant." If they nab her, it won't be for the Brawl.

- Timberwolf

- And your source is ... ?

- Skeptic

proud Akropolis, and soldiers held watch over wrenchingly impoverished streets.

Well, as they say—that was then, this is now.

NERPS!

IT'S THAT SIMPLE

NERPS FOR THE TWO OF YOU

NERPS FOR STYLE

NERPS FOR

NERPS FOR BREAKFAST

NERPS FOR CONFORT

NERPS FOR FUEL

NERPS FOR CLEAN AIR

NERPS FOR WHITER TEETH

NERPS FOR PRESIDENT

When I stepped out of the airport, I was struck by how much it differed from my expectations. Gone were the war-torn streets of Athens, replaced by a city with both rustic avenues and high-tech towers, often with the two sitting cheek by jowl. As I planned for the night's festivities, I learned that Athens is the hub for communications in this part of the world, the last bastion of civilization before you hit the continued hostilities of Eastern Europe. Nightlife abounds in Athens, given a natural cross between the famous Greek hospitality and Athens's status as the favored R&R stop for soldiers and mercenaries from rougher areas. What this means to the traveler is that street crime is low in most areas and sources of after-hours entertainment are plentiful with a wide variety of options.

After a few hours of rest, I got up ready to find dinner and fun. I ended up down near the Akropolis for dinner at around 10 PM, being part of the early meal crowd. I dined at the Strofi restaurant and had some wonderful fun in picking out the food and being fussed over by the waitstaff. The food was excellent, making it easy for me to realize why the Strofi has been around for nearly one hundred years. Dinner took roughly an hour and a half to two hours, with each course (appetizer, main course, and dessert) having plenty of room in between for music and conversation. Impatient North Americans may feel ignored with the delay in the service, but it's all part of the Athens dining experience, where food and friends are lingered over, not rushed through. Dining out is an event here, regardless of the simplicity of the fare.

After I finally emerged from the restaurant, I took a cab over to one of the hot bouzoukia—live Greek music venues—called Neraida, Gorgones kai Manges (A Fairy, Mermaids and Dudes). There were wall-to-wall bodies there. The singer flirted and danced his way through the crowd, stopping now and again to rub hips with a scantily clad femme. The decor was a cross between Greek myth and a construction site, but somehow the club's owners managed to pull it off. The strobing lights made a dazzling effect over the writhing bodies, bringing to mind a scene of a post-modern Underworld. There isn't a spare seat in the house when I arrive, but what's the point of being stuck in Hades if you aren't going to dance and enjoy yourself?

After staying there for about two hours, I leave and wheel on over to Tzatziki, a hip nightclub named for that ever-present Greek appetizer. Rich young people wearing designer clothes rub shoulders here with dark men in dark suits with cool demeanors. This place is rumored to be a hit with both mercenary forces between assignments and the idle rich of the area, both of which contribute to its icy-cool attitude. The music here is canned, but the DJ keeps a fresh twist going all night long. It's 5:30 before the bouncers start shooing the reluctant patrons out the door.

Outside, the ever-present hot-dog vendors sell breakfast to the weary clubbers. The locals who feel a bit worse for wear usually skip past that to grab a bowl of patsas (tripe soup)—rumored to be a sovereign cure for hangover—at one of the 24-hour eateries around town. Myself, I skipped past the meat course to go straight to the Koulouri Bakery, where breakfast is available in the form of donuts, sesame-covered pretzels, and raisin buns.

As the dawn lights up the sky, the sea shimmers invitingly. Traffic is already crowding the streets, and shopkeepers are just setting out their goods for the day. Looking over this reassuring scene, I find myself glad that I accepted this assignment. All the trepidation and stress were worth it in exchange for one night in Athens.

- If you want anything done in Athens, go to Alexander's and tell them you want the special. If it's available, he can get it for you.
- Stavros
- Don't believe a word of it. Alexander's as gay as an Easter parade and he trades in Joyboys and rough-stuff BTLs. More people disappear asking for the "special" than you care to think about.
- Mercury
- Right, and you don't just happen to work for Alexander's biggest competitor? Don't believe the hype, just ask around.
- Stavros

CARNAVAL!

by Julia Weinburg

In Amazonia, the weather is beautiful in February. It's summer there at that time of year, and Rio's warm nights and gorgeous beaches will send even the worst case of winter blahs scurrying for cover. The people of the city, known as Cariocas, are famous for their hedonistic lifestyle the year-round, with the beaches, the beer, the beautiful bodies and the ballgames all considered necessities of life down here. Then, of course, Carnival arrives and things really kick into high gear.

Rio de Janeiro once had a reputation of being beautiful but cruel. Social problems here were high, with more than a third of the population living in crushing poverty with no social structure to help it better itself. In the years since Hualpa came to power, however, things have changed. Now Rio is one of the safest cities anywhere, with the *favelas* (shantytowns) a thing of the past. The farmland that once surrounded the city has turned into high-tech agrifarms, with hydroponic capabilities that allow the nation to continue exports of soybeans, coffee, and sugar. The city has also tripled in size, as the population of many Amazonian interior cities were relocated to the coastal enclaves of Sao Paulo and Rio.

What does this mean for Carnival, you may wonder? The answer is: everything. Rio's celebration was always among the largest in the world. Now, it *is* the largest in the world. There's more lodging available for tourists, a better transit system and more restaurants than you could ever hope to visit. Every other street has its own *blocos* or *bandas*—small neighborhood parades, many of them with their own themes. The city is literally one big party for Carnival week, stretching late into the night before taking a siesta the next morning and doing it all again. The official parade of Carnival is the Sambadrome parade held at the Sambadrome stadium. Celebrities from the world over are always in attendance. Hualpa even leads off the parade every year, making a brief but memorable public appearance.

During the day, there's always shopping at one of the myriad of outdoor markets. Gorgeous handmade shoes and purses are everywhere as are jewelry and other local goods. If browsing isn't your style, there are the beaches, rated among the best in the world, or the casinos, where you can gamble the daylight hours away.

While crime is down from years past, it always skyrockets during Carnival. Use common sense when traveling between hotel and party and you're unlikely to have a problem. Do remember, though, to wear your insect repellent or get your ward set before going out. Dengue fever, malaria and Awakened meningitis are all still very common in Rio, spread by those pesky mosquitoes. And do bring back some beads for me, won't you?

- Hey Cap, it was great to see something on Rio for a change. You can barely find anything on the place, even here.
- Sidewinder
- I was hoping someone would benefit from that. We're working on getting more information up for that part of the world, it's just slow coming. Hualpa seems to discourage people from telling tales, but it's only a matter of time. Stay tuned.
- Captain Chaos
"I am everywhere!"

• Carnival is great for doing extractions, hits, almost anything you care to name. During that two weeks, the local cops can't find their own coffee cups, much less the suit that's in your trunk. Everybody's too busy partying to worry about someone not checking into their office for a couple of days.

- Ipanema
- Just don't get too cocky. If you make a splash, Hualpa's boys will be down on you before you can breathe. And for your own sake, don't look at the jungle as a way to get out of town and lay low for a while. The jungles don't take well to townies who think they're in an overgrown park.
- The Smiling Bandit
"Strikes Again! Ha! Ha! Ha!"

• That whole thing about Rio doing a 180 and being squeaky clean? Don't you believe it. The shantytowns may have gotten a coat of paint and a few paved streets, but they're still very much a no man's land. Hide there if you have to, but be prepared to pay for the privilege or be reported to the local jefe. And he's got a boss, and he's got a boss, and it doesn't take long for Rio to become a very unfriendly place if you don't play your cards right.

- El Hombre

GAME INFORMATION

Culture Shock is designed to allow the gamemaster to add color to her games with real-time information on the *Shadowrun* world of 2062, as well as providing additional story hooks. The

section provides a number of pop culture references for insertion into any game, including information on culture, sports and travel. In addition, new rules are given for technology, cracking programs, and getting in and out of tourist hot spots.

COFFIN CLUBS

Coffin clubs offer a place for magically-active revelers to experience entertainment on an astral level without concern that someone is causing trouble with their physical bodies. Security varies by individual club but is always high. Coffins are locked from the inside with maglocks. Protection around the club itself is handled by hired magicians and spirit bouncers. For every five security magicians, one will be of Initiate Grade 1 or higher.

Clubs are protected against outside intrusion by wards with a minimum Force of 5, and special attention is given to keeping out shedim spirits who would naturally consider such a large number of unoccupied bodies to be ripe pickings. Even so, most smart magicians also use watcher spirits and other personal security methods to alert them to anyone tampering with their bodies.

Customs vary, but most coffin clubs assense patrons upon entering and levy cover charges according to their nature: mundanes pay roughly half of the charge for magicians, with the usual charge in the range of 10–20¥. Though it isn't advertised publicly, some clubs offer a "monthly pass" for a mere 1,000¥ that allows a patron to bypass the wards and attend shows without trusting his or her physical body to one of the coffin cubicles.

Coffin club entertainment almost always consists of magically-active bands; it's difficult to convince mundane acts to play clubs where most of the audience isn't even visible. When signing bands, club owners look for both talent and passion, but passion always comes first. Viewed from the astral plane, mediocre bands who truly love what they're doing put on a better show than technically proficient bands who are only in it for the cred. Awakened bands that are both good and passionate can, understandably, name their price.

During particularly good shows, the background count of coffin clubs can temporarily rise as high as 3. Staff magicians sometimes employ cleansing metamagic to keep the astral static down.

SIM-VIRONMENT

The Sim-Vironment is a merging of simsense technology and limited Matrix capability. The environment provides a full sim feed, only without the full RAS override that is the trademark of most sim experiences. Most physical senses are filtered out, as normal, but full physical movement is allowed. Users can choose from among a host of different characters and experience an interactive story in which they play out that character, interacting physically with the other individuals in the Sim-Vironment to bring the story to one of a number of pre-determined endings.

Aside from the lack of a RAS override, the other innovation in the Sim-Vironment is the level of interactivity. Even in pre-determined stories, the players can choose their actions and control the direction of the story (within preset limits). This level of flexibility provides a completely immersive experience that rivals

experiences in the physical world. Most Sim-Vironment tracks are thirty minutes long, but sixty-minute tracks are also available. The cost for a session is 100¥ for a thirty-minute track, 150¥ for a sixty-minute track.

With the full Dir-X sim-tracks combined with the ability to determine your own actions, the Sim-Vironment can easily lead an individual to lose touch with reality during the course of a game. A character currently under the effects of the Sim-Vironment must make a Willpower (8) Test to separate reality from the Sim-Vironment and jack out. If the character does not disconnect, the test must be repeated every 5 minutes to avoid losing touch with reality. If the character fails, the TN increases by 1 for the next attempt.

Sim-Vironment tracks can be custom-written and inserted. Those who specialize in high end BTL and sim production can create a track, but the cost should be prohibitive—75,000¥ for a four-person Dir-X, Full-X track and up. Sim-Vironments are deliberately kept off-line to avoid unauthorized access, so insertion of a custom track must be physical.

SCULPTS AND CRACKING

Sculpts are constructs. To create a sculpt, use the rules for IC constructs (p. 91, *Matrix*), except that an average sculpt has no payload, no Hacking Pool and no initiative. Its core rating may not exceed the programmer's Computer (Programming) skill.

Just as forgeries, unauthorized copies and stolen goods are the dark underside of the glittering physical art world, the same holds true in the Matrix. With the advent of Matrix sculpts as an art form (and a lucrative one at that), the demand for knock-offs is high enough to tempt almost any non-law-abiding citizen with enough talent to pull it off.

Cracking

In order to copy or forge a utility, sculpt or any other program, a character must have the source code (see p. 295, *SR3*). If the source code is not available but the object code is, then a process called "cracking" can be used to reverse engineer the original source code from the object code.

In order to crack the source code of a program, the character must have the object code. Cracking requires the Cracking Knowledge skill; a program with a multiplier higher than this skill cannot be cracked. The character also needs a computer with both active and storage memory equal to or greater than the size of the targeted program. To crack the object code, the character makes a Computer (Programming) Test with a target number equal to the rating of the target program +4. If used, the cracker utility reduces this target number by its rating. If the computer being used has twice the needed memory, apply a -2 modifier.

Cracking a program takes twice the base time it takes to create the targeted program (Mp size in days x 2). Successes from the Computer (Programming) Test can reduce this time.

Cracking Knowledge Skill

This skill encompasses techniques and tricks for reverse engineering object code. Characters cannot crack programs with a multiplier higher than their Cracking skill.



Cracker Utility

Multiplier: 6

Options: Adaptive, bug-ridden, crashguard, DINAB, limit, optimization, sneak.

The cracker utility is very difficult to program. The maximum rating that can be programmed is equal to half the Computer (Programming) skill of the programmer, round up.

The cracker utility is designed to derive the source code of a program from the finished object code (p. 295, SR3). The utility reduces the target numbers to derive a program's source code.

Signature Program Option

Design Rating Modifier: +3

The signature option allows the deacker to embed a signature style into the code of the program, making the source code harder to reverse engineer. The signature option applies a +4 target number penalty to attempts to derive the source code from the object code.

Signatures are unique to the programmer who uses them by their nature. This means that individuals trying to determine the author of a program receive +1 die on legwork checks regarding the signature style used.

GETTING IN AND OUT

This section provides details on accessing and leaving the locales described in *Travel Hot Spots*, p. 119.

Shibanokuji Freefall Resort

Weekly suborbital flights to *Shibanokuji* are available by reservation, with a six-hour layover at the Yamatetsu Center on the Ares-owned *Apollo Station*. In-depth cyberscans are conducted during that layover. Any weapons or communications cyberware are deactivated for the remainder of the trip; failure to comply results in a quick trip back down the gravity well.

A passport is required for travel to *Shibanokuji*, as well as a medical release form signed by one of Yamatetsu's medical staff. Thorough background checks are performed as a matter of course, and while discrepancies won't bar you from being allowed onto the station, they will ensure that the staff keeps a close eye on you for the duration of the visit.

While shuttles from *Apollo Station* only fly every Tuesday, *Shibanokuji* does have two emergency pods, and can summon another shuttle from *Apollo* on 12 hours notice. Emergency shuttles also fly to the medical side of the facility as needed, carrying patients to and from the treatment center at need.

Athens, Greece

International travel to and from Athens is handled primarily by air through Hellenikon International Airport. The airport itself is only about 11 kilometers from the city, but the traffic on the only thoroughfare between the two can take more than an hour to traverse.

For domestic travel in and out of Athens, the Piraeus seaport is the main choice. It has subway, taxi and bus access into town, but the taxis will often charge exorbitant prices and buses don't

run at night. Another option is the port of Rafina, which is roughly an hour's bus ride east of Athens.

Trains are also an option, and the Hellenic Federal Republic has sunk quite a bit of money into rebuilding the rail infrastructure. The train service is one of the fastest, cheapest and most reliable ways to get from one mainland city-state to another. Taking a car is not recommended, as traffic throughout much of the mainland (especially in and around Athens) is truly terrible.

For international travelers, a passport is required for entry. No visa is required for visitors staying less than 30 days; a 90-day tourist visa must be obtained for longer stays.

The Athens RTG is one of the best available in this part of the world, thanks in no small part to the heavy corporate and military influence. It is sculpted to resemble the Akropolis, with all hosts required to conform to a classical Greek external appearance.

Rio de Janeiro, Amazonia

International travel to and from Rio de Janeiro is only really possible by air or sea. Two airports service Rio: the Aeroporto Galeo, which is 15 km north of the city, and Aeroporto Santos Dumont. Galeo is the international airport, while Santos Dumont is used primarily for domestic flights. Rio is also a popular stop on international cruises, with at least two major cruise lines running to the city year-round. Buses run from the airports and around the city, but they're often crowded, slow and the primary site for robberies in the sprawl. An excellent and well-maintained subway is also available covering the central part of the city.

As to venturing deeper into Amazonia, there are a number of officially sanctioned tours of the area's natural wonders. These tours are carefully supervised, however, and have no tolerance for stragglers. For a less official way into the interior, the only options are boat, wagon, or foot. The hard-won highway system that once spanned the nation is no more than a memory now, and there are no roadways leading to the interior that will support wheeled transportation for very long.

Boats are the most popular and most reliable form of transportation available outside of the cities. The price of a ride will vary wildly depending on where you want to go. Players will be well served to remember that the Awakened creatures of the Amazon Basin are their own best guardians now, and they don't appreciate humans encroaching on their newly regained homes.

A passport is required for entry, valid for at least 90 days past date of entry. Once inside, visitors must obtain a tourist visa that is good for 90 days. One extension is possible, no more. Health risks in the area include Chagas's disease, dengue fever, malaria, meningitis, Awakened meningitis (a more virulent, mana-feeding version of traditional meningitis), rabies, and yellow fever. Most if not all of these diseases are carried by mosquitoes here, making regular insecticide a very real threat.

The Rio grid is solid, if small. Only the San Paolo LTG is comparable as far as public grids within Amazonia go. The sculpting represents a section of Ipanema Beach after dark, with a virtual sea stretching endlessly out to one side and blazing city lights on the other.

INDEX

A

Absorption, 43, 52
 Access points, 89-90, 102-103
 Active skills, 104
 Africa, 67-68
 AG Chemie Europa, 15-16
 Age rejuvenation, 19, 26
 Air defense vehicle, 76-77
 Albums, 106, 108
 Ammunition, 73
 pouches, 73-74
 Angiotensin, 27
 Anti-vehicle shell, 73
 Antibac, 23, 29-30
 Antipersonnel shell, 73
 Arcane duels, 4
 Area sensors, 84, 99
 Armored personnel carrier, 77-78
 Artillery, 70
 Astral barriers, 90
 Astral shadows, 11
 Astrology, 44-47, 53
 Augmented healing, 26
 Awakened
 Yakashima and, 15
 changes by, 9
 mana levels, 12
 woods and, 57
 Aztechnology, 13

B

Backlash, 40
 Bandwidth, 108-111
 Bangalore torpedo, 71, 74
 Baseball, 117
 Basketball, 117
 Battalion, 61
 Battlefields, 67-68
 Binder, 23, 30
 Biogene, 15, 17
 Biometric scanners, 4, 86-87, 101-102
 Breath scanner, 101

C

Calcitonin, 27
 Cameras, 84-85, 98
 Camouflage
 equipment, 69-70
 nets, 69-70, 74
 Camping gear, 74
 Capacitance wire, 97
 Carnaval, 123
 Cellular repair, 26
 Cellular scanner, 101
 Chemsniffers, 99
 Chi, 45-46
 Civil engineering, 104
 Claymore mine, 71, 74
 Cloning, 16-17
 Closed-circuit simsense, 89-91, 102-103
 Clubs, 109, 112-115, 116, 124
 Coffin clubs, 109, 124
 Cold adaptation, 27
 Combat biker, 117
 Combat Inc., 66
 Combat magic, 62-63
 Combat vest, 74
 Company, 61
 Concerts, bandwidth, 108-111
 Constantinople, 64-65
 Containment, 89
 Contract, mercenary, 60-61, 72
 Control scanners, 85-86
 Corporate security, 5, 79-80
 cost concerns, 93
 game information, 95-104
 HVAC, 83
 implementation, 93-95
 integration, 91
 magical, 90-91
 personnel services, 91
 physical, 80, 82-83
 procedure training, 93
 technical, 83-89
 Cracking, 124-125
 Cratering charges, 71, 74
 Cross Biomedical, 14

Culture, 5, 105. *See also specific forms of entertainment*
 game information, 123-125
 Cyberware scanners, 100

D

Demolitions, 71-72
 Desert Wars, 59-60
 Detonation cord, 71, 74
 Disguise, 104
 Divination, 45-47
 DNA
 alteration of, 18
 astral shadows, 11
 banks, 17
 direct protein synthesis, 20-21
 genes and, 6, 8
 Hausen Project, 10
 identification technology, 22
 magic and, 12-13
 manipulating, 8
 masking, 21-22, 28
 nanite engineering, 9
 recombination, 8-9
 restriction enzymes, 8
 scanner, 28, 101
 secondary structure of, 10-12
 structure and form, 8
 tabula rasa, 9
 transcription, translation, 8
 Doors, 83, 92, 97
 Dowsing, 45, 53
 DP-ICM shell, 73
 Drone football, 117
 Dueling
 magic, 51
 sorcerous, 52
 supremacy, 51-52
 Duels arcane, 41-43
 Dwarf, metatraits, 11

E

Ebola Plus, 4, 30
 Electrified fences, wire, 95-96
 Elven metatraits, 11



Embedded sensors, 88-89
Emotional impressions, 40
Enchanting skill, 48
Environmental microadaptation, 4, 20, 27
Equipment, 72-75
 pouches, 74-75
Erythropoietin, 28
Explosives, 71-72, 73, 74

F

Facial recognition scanner, 101-102
Fences, 80, 91, 95-96
Feng shui, 44-47, 53
Fiberoptic observation network, 91
Field rations, 75
Filtering, 43-44, 52-53
Finger scanner, 102
Firearm accessories, 73-74
Fluorescing astral bacteria, 90, 103
Football, 117

G

Game information
 corporate security, 95-104
 culture, 123-125
 genetic manipulation, 25-30
 magic, 47-53
 mercenaries, 72-78
Gamma-anthrax, 23-25, 30
Gas delivery systems, 103
Gene, expression of, 8
Gene machines, 13-14
Gene therapy, 18-19, 25-26
Genetic applications
 processes, 18-22
 substances, 22-25
Genetic cosmetic surgery, 19-20
Genetic modification, 4-6, 8-9
 before birth, 25
 compatibility, 25
 cyberware and, 25
 processes, 25-28
 ritual samples, 25
Genetic research institutes, 14-16
Genetic substances, 29-30
Genexpress, 22
Genome, 9
Geomancy, 4, 44-47, 53
Ghillie suit, 69
Glucagon, 28
Goblinization, 10

H

Hausen Project, 10, 11
Heat adaptation, 27
Helicopter, 75-76
Hockey, 117-118
Hovercraft, 76
Howitzers, 72-73
HVAC, 83, 97

I

ICM shell, 73
Immunizations, 22-23, 29
Imprinting, 53
Information warfare, 62
Integrated control centers, 103
Intelligence, 104
Interlinks, 103
Invention, 116

J

Jammer shell, 73
Junction switches, 89

K

Key locks, 86
Keypads, 101
Knight Errant, 79, 82, 83, 87, 89, 115
Knowledge skills, 104

L

Landscaping, 80
Leonization, 19, 26
Lighting, 82, 92, 96-97
Lighting switches, 82
Linking, 36-39, 47-49
Lisbon, 63
Load-bearing harness, 74
Lock picking, 104
Locks, 92
Low altitude assault vehicle, 76
Low-light sensors, 98
Low-oxygen adaptation, 27

M

Macao, 63-64
Magenetics, 12-13
Magic, 111-112
 absorption, 43
 combat, 62-63
 duels, 51
 filtering, 43-44

game information, 47-53
geomancy, 44-47
psychometry, 39-40
ritual links, 36-39
sympathetic, 34-39
theory, 32, 34

Magical security, 90-91, 103-104
Maglocks, 86, 92, 100-101
Magnetic anomaly detectors, 99
Matrix interlinks, 90, 103
Matrix security, 90, 103
Mechanical tripware, 98
Memory string, 101
Mercenaries, 4, 5, 54, 56
 battlefields, 67-68
 campaigns of, 72
 chain of command, 61
 contract and, 60-61
 differences from shadowrunners, 56
 game information, 72-78
 hangouts, 63-65
 information warfare, 62
 mission essentials, 56-60
 organizations, 65-66
 situation reports, 63-68
 soldiering, 61-62
 supertroopers, 62
 tools of, 68-72
MET 2000, 65-66
Meta-genome, 12
Metagenes, 10, 11-12
Metahumanity
 Awakening and, 9
 magic and, 10
Metamagic, 5
Metatraits, 10-11
Military gear, vehicles, 4
Military rucksack, 75
Mine detection gear, 71-72, 74
Mitsuhamas, 43, 60
Mobile command center, 78
Monobe International, 16
Mortar carrier, 75
Mortars, 72
Motion sensors, 99
Munitions, 70-71

N

Nanite engineering, 9
Nanotech security, 4
Nanotech taggant gas, 103



Neutralization, 89
North America, 67

O

Objects, 48
Olympics, 116-117
Ork metatraits, 10-11
Outdoor equipment, 68-69
Outpost, 65

P

Palmprint scanner, 102
Patrolling, 57-58
PensoDyne Biotechnical, 14, 20
Personnel services, 91
Peru, 67
Phenotypic alteration, 19-20, 26
Pheromone scanners, 99
Philippines, 67
Platoon, 61
Pollution tolerance adaptation, 27
Preserve spell, 38
Pressure mesh and pads, 98
Prometheus fiberoptic observation network, 103-104
Protective agents, 23, 29-30
Protein synthesis, 20-21, 27-28
Proteus AG, 15, 20
Proximity cards, 101
Psychic impressions, 40
Psychometry, 4, 39-40, 49-51

Q

Quickness, 104

R

Raids, 58
Rations, 68-69
Recombinant DNA, 8-9
Reconnaissance, 58
Rejuvenation, 19, 26
Remote security, 56-57
Retinal scanner, 102
Ritual links
 planting, 38-39
 severing, 36-37
Ritual magic, reverse, 49
Ritual sorcery, 4
Routers, 89

S

Saeder-Krupp, 15, 17, 43
Safari, 60
Scandal, 115-116
Scanners, 99-100
Sculpts, 124-125
Security. *See also* Corporate security
 companies, 104
 design, 104
 procedures, 104
 procedure training, 93
 remote, 56-57
 systems, 104
Seeker shell, 73
Self-inflating tent, 75
Sensing, 45
Sensors, 92
 placement, 93
Sensory impressions, 40
Severing, 48-49
Shiawase Biotechnical, 13-14, 20
Show of force, 58-59
Siberia, 68
Sim-casting, 108-109
Sims, 109-111
Sim-Vironment, 124
Smoke shell, 73
Soccer, 118
Solar shell, 73
Soldiering, 61-62
Somatic impressions, 40
Sound detectors, 99
Spell, preserve, 38
Spellcraft, 90-91
Sports, 117-119
Squad, 61
Stickball, 118-120
Supertroopers, 62
Supremacy duels, 51-52
SURGE, 5, 12-13
Survival equipment, 74-75
Survival tents, 68
Swipe cards, 101
Switch alarms, 83-84, 97-98
Symbolic links, 47-48
Symbolic representations, 48
Sympathetic magic, 34-39, 47-51

T

Tan Tien, 14-15
Tanks, 77
10,000 Daggers, 66
Thermographic sensors, 98
Torpedo, 71, 74
Transponder-embedded keys, 100
Travel, 119-123, 125
Trids, 109-111
Trip beam systems, 97-98
Troll, metatraits, 10-11
Tsunami, 66
Tumbler locks, 100
Tunneling, 96

U

UGE, 9, 10
Ultrasound, 85
Ultraviolet sensors, 98
Universal Omnitech, 13, 23, 24-25
Urban brawl, 119, 120

V

Vandalism, 115
Vehicles, 70, 75-78
Vehicle weapons, 72-73
Vibration detectors, 99
Virtual light, 111-112
Visual sensors, 84-85, 98
Voiceprint, 102

W

Walls, 80, 82, 91, 96
 smart, 102
Weapon scanners, 85-86
Web gear, 70
Windows, 82-83, 97
Wire, 95
Wuxing, 45, 46

Y

Yakashima, 15
Yakut, 68
Yamatetsu, 14
Yucatan, 67

Z

Zeta-Interferon, 23, 29-30

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