PYR MID

TECH AND TOYS

PROCESSING

PSI-POWERED IMBUEMENTS
by Rev. Jason "P.K." Levine

MORE ULTRA! MORE TECH!
by Demi Benson

THE NECTAR BOX
by J. Edward Tremlett

MORE SURVIVAL AND CAMPING GEAR
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STEVE JACKSON GAMES

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> *Things don't end; they just accumulate.*
>
> – Russell Hoban

Article Colors

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

Pale Blue: In This Issue
Brown: In Every Issue (letters, humor, editorial, etc.)
Dark Blue: **GURPS** Features
Purple: Other Features

IN THIS ISSUE

With the big annual shopping period fast coming upon us, so arrives the time for browsing through pages of cool stuff. And speaking of "pages of cool stuff," this issue of *Pyramid* gives you dozens of interesting items and cool "toys" for your adventurers.

First, we offer expanded choices and advances from some of the gear in **GURPS Ultra-Tech** in *More Ultra! More Tech!* Selections range from survival gear to weapons.

Extrapolating on modern scientific developments, *Paper Cells* looks at a new kind of power source that can coexist with or replace **GURPS'** traditional power cells.

Jason "P.K." Levine, author of **GURPS Psionic Powers,** explores how you can combine that volume with **GURPS Power-Ups 1: Imbuements** to create your very own psionic super soldiers in *Psi-Powered Imbuements.*

Plug yourself into the cosmic unconsciousness with *The Nectar Box.* This generic article introduces what sounds like a perfect solution to the galaxy's ills. What could *possibly* go wrong . . .

In many space campaigns, much of the time in which you're not roaming the universe is spent trying to get a good night's sleep on a strange planet. For such expeditions, you need the right equipment. Stephen Dedman (author of **GURPS Dinosaurs**) might just have what you seek for these **GURPS** campaigns in *More Survival and Camping Gear.*

This month's *Random Thought Table* looks at how to regulate getting rid of old gear. As a hint: for folks looking to trade stuff in, it's not a *good* picture . . .

If you need a better way to keep track of the tech and toys you have, consider this issue's handout: *Tracking Cards.* With this system, you can sort your goodies – or your abilities – with relative ease.

A couple of mini-articles and *Murphy's Rules* round out the issue in *Odds and Ends.* Finally, the issue ends with an in-game option to preserve all these wonderful toys in *Reality Backup, Inc.*

FROM THE EDITOR

## GADGETS AND GIZMOS AND TOYS, OH MY!

For all the **GURPS** fans we have reading these pages, we hope you like the amount of "crunchiness" in this issue. Getting "Tech and Toys" right takes a lot of extra care and elbow grease! Special thanks to Jason "P.K." Levine – the new Assistant **GURPS Line Editor** – for his help at polishing these words into finely honed bits. Be sure to check out his contribution beginning on p. 24!

While several of the articles contain ideas that can be adapted to just about any game system, one interesting realization I had while putting this issue together is how interconnected **GURPS** books have gotten lately. *Psi-Powered Imbuements* combines ideas from two recent supplements into one piece. Several articles build off of **GURPS Ultra-Tech** (of course), as well as **GURPS High-Tech.** Even the two **Pulp Guns** volumes get a shout-out!

Tying it into the "Tech and Toys" theme, the PDF format of **GURPS** *Fourth Edition* books opens up many tricks and research options that were impossible when I started playing **GURPS,** nearly 20 years ago. For example, how many instances are there of the word "toy" in **GURPS Ultra-Tech?** (Nine, including a weird one involving the UPC symbol.) I remember how many hours I spent in college sifting through my softcovers, trying to find a piece of information I knew was somewhere. Nowadays, it would be trivial. With a laptop, I could find bits of trivia in an instant; my entire **GURPS** library fits on a $20 memory card. Having digital copies also means I can print out select pages from electronic books for notes, as needed. My diet beverage is currently sitting on a stack of pages from three different e23 releases. The future may be scary, but it's also really fun.
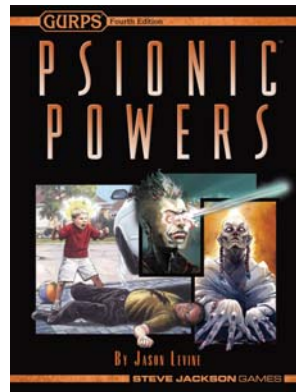
WRITE HERE, WRITE NOW

We love to get your feedback! Did you use the *Tracking Cards* in some neat or innovative way? Is the *Appendix Z* a waste of space? Our souls are plated with durable molybdenum armor; we can take anything you throw our way! Please feel free to let us know what works and what doesn't. Send comments or questions to **pyramid@sjgames.com,** or post online on our forums at **forums.sjgames.com.**

If you'd like to try your hand at writing for us, we'd love to consider you to become part of our text-manipulating family! Check out guidelines at **sjgames.com/pyramid/writing.html**

I really liked it. I found quite a bit of it very exciting.

– trooper6, on the Steve Jackson Games forums

MORE ULTRA! MORE TECH!

BY DEMI BENSON

GURPS Ultra-Tech provides a plethora of possibilities when it comes to futuristic technology. Even so, human ingenuity couldn't possibly be confined to one book, and there's no reason to believe the future won't be just as innovative.

Here, then, are a number of new options that expand on many possibilities presented in **GURPS Ultra-Tech.** Some of these technologies build on and extrapolate from what's in that book, while others are new.

CORE TECHNOLOGIES

While often not directly useful, revisions or alterations to underlying technology can make a big difference to other gadgets.

> *I didn't have everything I needed – but I did have an ace in the hole. My stealth luggage concealed a suitcase nanofac – the spy's best friend.*
> *– Special Agent Gabrielle,*
> *GURPS Ultra-Tech*

POWER

In the modern era, gadgets have an unending number of options to keep themselves powered. It's likely this trend will continue in the future. Here are a few more options to keep the juice running freely.

For a closer look at another power option, see the *Paper Cells* article on pp. 12-15.

Backpack Power Unit (TL9^)

A solid-state portable nuclear battery unit, this device can charge an E cell in one hour and has connectors for any size power cell. It lasts one year, then should be replaced. It has DR 40, HP 15, and HT 15. Causes a radiation leak (1 rad/hour) if damaged and disabled (fails a HT check), but cannot explode. $50,000, 50 lbs. LC2.

Solar Backups

Explorers and frontier colonists might have uncertain access to power plants. Adding small solar panels to gadgets lets them trickle-charge in daylight. It costs 20% of the cost of the power cells. Recharging could take a few days to weeks, depending on the device's surface area relative to power capacity.

PERSONAL GEAR: CLOTHING

Here is another option to add to the clothing options in *Ultra-Tech* (pp. 38-40).

Waterproof Coating (TL9)

Truly waterproof fabrics become available in TL8, although they suffer some degradation after a dozen cleanings. By TL9, water does not penetrate the weave even when completely immersed for years, and water-based paints, dyes, and chemicals sheet off instantly. It has no effect on oil-based fluids and solvents. Any garment can be bought waterproof; add 50% to cost at early TL9, 25% at TL9, 10% at TL10, free at TL11-12.

Adventure idea: Take any of the gear here and crank up its usefulness. Then get the heroes to protect the plans or prototype from competing corporations.

COMMUNICATIONS AND MEDIA

Humans have expanded and improved on their communications technology since the dawn of time. Some of these methods endure for ages, while others are "dead ends." Here are some additional items to consider.

COMMUNICATIONS

People want to be connected and entertained, and they won't often buy specialized devices. They prefer multi-function and cheap. Personal goods could merge to just a single do-everything gadget.

Comphone (TL9)

The next evolution of the personal communicator, this device consists of a tiny computer with the compact and slow options (Complexity 2), a data player, a GPS receiver, and a network-only radio microcomm and tiny radio receiver. They're so small, they usually come as a medallion, wristband, or badge with "stick pad" backing (see *Gecko Adhesive Technology,* p. 6). Comphones have a tiny screen and some buttons, but their main interface is voice or an external input. $15, 0.08 lbs., 2A/16 hrs. LC4.

A more expensive version with a real datapad, full tiny radio, and a regular computer (Complexity 3): $100, 0.2 lbs., 2B/48 hrs. LC4.

At TL10, comphones include a laser microcomm to access a building's internal network at maximum bandwidth. The expensive version also includes an inertial compass. Cheap TL10 comphone (Complexity 4): $35, 0.08 lbs., 2A/16 hrs. LC4. Expensive TL10 comphone (Complexity 5): $150, 0.2 lbs., B/24 hrs. LC4.

Earbud (TL9)

This earplug contains a radio microcomm (*Ultra-Tech,* p. 43) with a deliberately shorter range (10 yards), a speaker, and a filtered external pickup that gives +1 to resist loud noises. Used as a headset for a comphone or data player. Double cost for two connected by a short length of optical cable. $2, neg., non-rechargeable AA/2000 hrs. LC4.

Vid Glasses (TL9)

Tough sunglasses incorporate a HUD (*Ultra-Tech,* p. 24), earbuds (above), and the same camera as a flatcam (*Ultra-Tech,* p. 51). A cheaper alternative to "night shades." Provides DR 2 to eyes. $60, 0.1 lbs., A/10 hrs. LC4.

TRANSLATORS

These translators are small enough to fit in a pocket or on a lapel. They run two language programs and a non-volitional AI, translating in real time and matching the user's speech patterns. Use the AI's IQ to determine how well it handles idiom, jargon, and colloquialisms.

Field Translator (TL9)

A high-capacity, fast, small computer with a datapad terminal and the culture's full range of microcomms. The complexity 5 computer runs an IQ 6 non-volitional AI (IQ 10 at TL10, IQ 12 at TL11, IQ 14 at TL12) and two Native-level spoken or visual language translation programs. It can store 100 Native-level spoken language databases (multiply by 1,000 each further TL), which must be purchased separately. $3,000 plus the cost of software (*Ultra-Tech,* p. 48), 0.6 lbs., 2B/20 hrs. LC4.

Translator Disk (TL10)

A much smaller version of the field translator (above), this is a high-capacity tiny computer, a small sonic projector, a mini-camera, and the culture's full range of microcomms. It can store 10,000 Native-level spoken language databases (multiply by 1,000 each further TL). The sonic projector can be set to allow only the target to hear the translation (for crowded spaceport bars and embassy cocktail parties); otherwise, the computer's infra- and ultrasonic-capable speaker is used. It has IQ 6 at TL10 and increases by 2 every further TL. It comes as a stick-on medallion or earpiece. It's similar to the field translator in all other respects. $150 plus the cost of software, 0.125 lbs., B/36 hrs. LC4.

TOOLS AND SURVIVAL GEAR

Everyone needs a little extra help when away from home. This section provides a few useful items. For even more equipment, check out *More Survival and Camping Gear* on pp. 34-35.

EXPEDITION GEAR

Much like today, future explorers may have top-of-the-line tech for recreation or survival necessity.

Inflatable Boat (TL9)

A collapsible inflatable boat (similar to a kayak or covered canoe) with rigid, air-filled structural members. The boat has seating for one person and gear with a combined weight of 250 pounds. It has a built-in powered pump that can inflate the structural tubes and internal compartments in 20 seconds from ambient air. The manual backup pump takes two minutes. Packing it for storage takes at least one person-minute in ideal conditions.

Have a bit of extra gear money? Guns, vehicles, palm-sized computers: Everything can use a remote control.

The material is the same as that of the pressure tent (**Ultra-Tech,** p. 76). The basic model comes with a tethered inflatable paddle, but some models add sails, rigging, and inflatable masts. $150, 6 lbs., B/20 minutes. LC5.

A sail and rigging adds $100 and 2 lbs. A mast adds $50 and 2 lbs, and improves sail efficiency.

For larger boats, multiply cost, weight, and number of paddles and power cells by the capacity multiple. Adding solar film surface to charge the power cell doubles cost.

Ruggedized Survival Watch (TL10)

An exceptionally ruggedized version of the survival watch (**Ultra-Tech,** p. 77), this device can survive 1,000 atmospheres of pressure and has DR 10 (DR 15 at TL11, DR 20 at TL12). The tiny computer is hardened. It also includes a tiny radio comm and a radio-isotope generator to trickle-charge (recharges in two years when in sleep-mode, with a half-life of 1,000 years) and to keep accurate time for 10,000 years (loses only one second per 100 years). $1,000, 0.75 lbs., B/3 months. LC3.

CLIMBING GEAR

The advent of gecko adhesives brings a revolution in climbing gear.

Gecko Gear (TL9)

Climbing gear can use gecko pads to allow near perfect adhesion to any surface. It requires nerve-impulse detectors, proximity sensors, and dedicated control software. The user can crawl up walls and ceilings at half Move (brachiators get full Move). A single thumbprint-sized patch is enough to support a human, so falls are extremely rare. A whole body stocking gives +7 to Climbing (gloves give +3, toe-socks give +2, the rest of the body gives +2), doubled for the individual part to maintain footing or grip (grappling and wrestling, holding ropes, Retain Weapon checks). In addition to the expected outer surfaces, the *inside* surface is covered with stick pads to distribute the climber's weight. The base material is diaphanous ballistic armor (DR 0) for good tactile feedback.

The control software errs on the side of caution: A user must make an unadjusted Climbing roll with familiarity penalties to deliberately release all the gear at the same time!

Pair of gloves is $3000, 0.5 lbs., 2A/1,000 hrs. LC3.

Pair of toe-socks is $2000, 1 lb., 2A/1,000 hrs. LC3.

Bodysuit is $10,000, 5 lbs., B/1,000 hrs. includes powering gloves and socks. LC3.

Adjust for SM. Can be manufactured into clothing or any flexible suit of armor or environmental suit. Divide cost by two at TL10, by five at TL11, and by 10 at TL12.

Gecko Soles (TL9)

Gecko gear soles can be built into any other boots. They provide +1 to rolls to maintain footing, and they function similar to magnetized plates without requiring ferrous metal surfaces. Each pair $600, 0.25 lbs., 2A/4,000 hrs. LC4.

Balloon Piton (TL9)

A partially inflated two-inch balloon covered with gecko adhesive and attached to a swivel-ring, it's used by pressing it to a smooth surface or into a crack and electrically triggering the gecko surface. It can hold up to 5,000 pounds. Gives +1 to Climbing skill. A set of 10 gives +1 to Climbing skill. Each: $20, 0.05 lbs., AA/40 uses. LC4.

Gecko Adhesive Technology (TL9)

Gecko adhesive (**Ultra-Tech,** p. 83) is a transformative technology – it replaces nearly every type of fastener. Clothing is closed by gecko adhesive ("stick strips") activated by touch sensors. Nails, screws, and rivets disappear as panels can be attached directly to supports. Gadgets can be stuck to any surface – walls, trees, skin – with the touch of a button. A comphone can be stuck to the back of a hand or shirt lapel. Goggles and air masks can bond to the face so they won't come off accidentally. A tracked techbot can crawl up walls and ceilings.

Stick pads are so cheap to design in that every consumer device will probably have them instead of belt clips and carry cases – assume cost includes them. Large amounts (covering the tracks of a techbot or the backs of solar panels) cost $6 per square foot.

Rolls of general-purpose gecko tape are nothing more than gecko surfaces built into strips of tough material, often thin ballistic armor material from the previous TL.

There is one caution to using stick pads: They'll faithfully stick to anything, even when the substrate peels away – gripping brick does no good if the crumbling mortar lets the bricks fall out. That applies to living tissue, too: Skin continuously replaces itself, so stick pads will adhere to skin for no more than one week.

Molecular Suction Cup (TL9)

A tiny balloon piton capable of supporting 800 lbs. $5, 0.02 lbs., AA/1,000 uses. LC4.

Genius Piton (TL9)

This is a combination of a smart piton (**Ultra-Tech,** p. 76) with additional gecko adhesive material along its length, a balloon piton, and a small tube of splat piton material (supports an extra two tons after one minute) and catalyst. The functions can be triggered independently, so a loose piton can be reset or removed. Nominal working load is 5,000 pounds; increase cost and weight linearly for higher loads. A set of 10 gives +1 to Climbing skill. Each: $20, 0.05 lbs., AA/40 uses. LC4. Each: $15, 0.1 lb. LC4.

*Pull in odd tech from other supplements as "deviant" or "precursor" technology, such as **Traveller** gear in a **Transhuman Space** campaign.*

Digging Piton (TL10)

Advanced genius pitons that use burrow dart technology (*Ultra-Tech,* p. 155) to dig themselves further into the surface. Used properly, a set of 10 gives +2 to Climbing skill (with no loss of speed). Each: $25, 0.1 lbs., AA/10 uses. LC4.

Rocket Piton Shells (TL9)

For use with a rocket piton launcher and 1/8" rope, the booster shells can be attached to any pointed piton (not splat or balloon). Add the cost of other pitons. $5, 0.5 lb. per shot. LC4.

Effectively, these are cheap 25mm gyroc-like boosters with explosive piton rams. They have 1/10 gyroc range because of the heavy payload and dragging the climbing line. For larger diameter rope (3/16", 3/8", and 3/4"), larger rockets and pitons must be used to maintain the same range. Multiply cost and weight by 2.5× for 3/16", 10× for 3/8", and 40× for 3/4".

Electromagnetic Piton Launcher (TL10)

Similar to a pistol-form underbarrel EMGL (*Ultra-Tech,* p. 141), this device electromagnetically launches piton rams instead of using rockets. It inflicts 1d pi++ damage, with Acc 3, range 60/400, RoF 1, Bulk -2, Rcl 2, Shots 1(5). $500, 1.5 lbs., C/3 shots. Reloads are $3, 0.2 lbs. per shot. LC3.

ROPE GEAR

Rope is an ancient technology, and it's one that is of special interest to many adventurers.

Data Rope (TL9)

Standard rope with optical fiber cable wound through the center and connected to data plugs on both ends. Add $0.50 per yard to standard rope costs. The optical cable will snap if the datarope is stressed to five times its safe load.

Rope Splicer (TL9)

This device cuts, crimps, melts, or splices rope passing in one end and out the other. Designed to be attached to a rocket piton launcher, a rope traverser, or both. Splicing takes the internal micro-manipulators three seconds to apply gecko adhesive tape from its internal supply. Swivel-ring or plug connector caps can be attached using the same splicing mechanism, but take twice as long. Cuts, crimps, and melts take 1 second each. A rope end can be spliced into a loop, which takes 12 seconds (counts as four uses). It takes one minute to splice two ends into interlocking but separate rope loops (counts as eight uses).

Rope splicers can manipulate smaller rope of standard sizes and material, but one programmed to handle unusual rope (e.g. primitive material) is triple cost. Data rope splicers are double cost. Splicing data rope takes five times as long and counts as doubled uses if the data connection must be maintained. Connector caps are the same weight as one yard of rope for that size, but five times cost.

Up to 1/8" diameter: $400, 4 lbs., B/30 uses. LC4. Cartridge of 20 connector caps is $20, 0.3 lb.

Up to 3/16" diameter: $800, 8 lbs., C/100 uses. LC4. Cartridge of 20 connector caps is $50, 0.7 lb.

Up to 3/8" diameter: $2400, 24 lbs., C/25 uses. LC4. Cartridge of 20 connector caps is $200, 2.8 lb.

Up to 3/4" diameter: $7000, 70 lbs., D/60 uses. LC4. Cartridge of 20 connector caps is $800, 11 lb.

Rope Traverser (TL9)

An electric winch for ascending or descending vertical ropes, or traversing horizontal ropes, it has rings, electromagnetic pads, or gecko connectors to handle most typical uses. It can lift the rope's nominal rating at two yards per second, or slower with more weight. It permits double speed for horizontal travel. The device cannot lift more than twice its nominal rating. It uses regenerative braking to recover half as much energy when descending and comes with integral solar film to top off the power cell. The traverser is designed to connect to the rope splicer, a rocket piton launcher, or both.

Up to 1/8" diameter: $200, 2 lbs., C/10 minutes. LC4.
Up to 3/16" diameter: $400, 4 lbs., 2C/8 minutes. LC4.
Up to 3/8" diameter: $1,200, 12 lbs., D/10 minutes. LC4.
Up to 3/4" diameter: $3,500, 35 lbs., 2D/8 minutes. LC4.

Backpack Climbing Unit (TL9-10)

An integrated rope-gear backpack containing a rocket piton launcher in a shoulder servomount, a rope traverser, a rope splicer, an articulated rope-guide arm (so the rope doesn't impede the user), a spool of 200 yards of 1/8" rope, a cartridge of 10 genius pitons in rocket shells, and an automatic reloader. $8350, 28 lbs., C/10 minutes (traverser) or 300 uses (splicer). LC3.

At TL10, it has an electromagnetic piton launcher instead of the rocket version. $6,720, 20 lbs., C/10 minutes (traverser) or 300 uses (splicer) or 3 shots. LC3.

MONOWIRE GEAR

The invention of monowire (*Ultra-Tech,* pp. 82 and 103) is likely to see innovation in many areas – not all of them savory.

Multi-Strand Monowire (TL9^)

Monowire can be made in higher capacities. For each doubling of maximum load, multiply cost and weight by three (using the 3×, 10×, 30× progression). Every full quadrupling of maximum load, reduce the armor divisor by one step, e.g., 100 yards of 8,000 lbs. rated monowire is $30,000, 3 lbs., and has armor divisor (5) when used as a weapon.

Safety Monowire (TL9^)

Plastic-sheathed monowire designed for relatively safe handling. Strung up as a "spiderweb," it does only 1d-2 damage for walking speed, 1d-4 for moving slowly, and 1d-1 for running. Cost and weight are identical to regular monowire – the spool can be far lighter as it need not be high-density armor material.

GURPS Gun Fu offers guidelines for creating new futuristic guns based on previously described weapons.

The coating comes in a variety of colors, including radar-reflective metallics, fluorescent, glow-in-the-dark, and clear.

Add 10% to cost to include an optical fiber cable that connects the spool to the end cap. The end cap can connect to pitons, attachment points, and so on to remotely release pitons or pass secure data.

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Notes on Monowire

Monowire is woven from strands of diamondoid fibers. Unlike regular rope, it has no elasticity and its safe working load is right at the edge of its maximum load. Whenever it is stressed and exceeding the safe load, roll vs. the monowire's HT 11 at -1 per extra 10% of safe load to see if it snaps. Monowire will snap when put under twice its safe load even if the load is applied gently.

Once cut, monowire cannot be spliced or repaired without nanoscale fabrication (available at TL11). Monowire cannot be usefully cut to make shorter lengths, so a reeling system is necessary – monowire weapons include a tiny one in the handle, but a monowire winch (below) is necessary for ascending and rappelling.

Monowire's cost is reduced by a factor of 10 every TL after its introduction.

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Monowire Winch (TL9^)

An electric winch designed to handle spools of standard monowire or safety monowire. Can handle a spool of up to 2,000 yards (weighing two pounds). The winch can lift 1,000 pounds of load at two yards per second (double speed with 500 pounds or less), and regenerates half its energy when descending. $800, 3 lbs., 2C/10 minutes. LC4. Spool weight and cost are separate.

Two winches can be attached together, allowing a horizontal traverse (one spool winding in, the other winding out), or vertical movement on two monowire lines.

For multi-strand monowire (see p. 7), multiply the weight, cost, and power usage of winches by the same multiple as the rated safe load.

Monowire Rocket Piton Launcher (TL9^)

Uses gyroc-sized rockets in a pistol-grip launch tube. The monowire's lack of drag gives superior range compared to rope-towing rockets. It inflicts 1d impaling damage, with Acc 1, range 100/350, RoF 1, Bulk -2, Rcl 1, Shots 1(5). $20, 0.8 lbs. Reloads are $2, 0.2 lbs. per shot. LC4.

Monowire EM Rocket Piton (TL10^)

Electromagnetically launches rocket shells – the two-stage launch gives increased range. TL9^ rocket shells won't work in this launcher, and vice versa. It inflicts 1d impaling damage, with Acc 1, range 150/500, RoF 1, Bulk -2, Rcl 1, Shots 1(5). $500, 1.5 lbs., C/10 shots. Reloads are $3, 0.25 lbs. per shot. LC3.

Monowire Backpack Climbing Unit (TL9^)

An integrated monowire-gear backpack containing a monowire rocket piton launcher in a shoulder servomount, two monowire winches, articulated wire-guide arms (so the monowire doesn't cut the user), a cartridge of 10 genius pitons in rocket shells, and an automatic reloader. The two spools of monowire are separate. $9,100, 14 lbs., 4C/10 minutes (using both winches, double if using only one). LC3.

Monowire Splicer (TL12^)

Can cut and rejoin monowire in field conditions using a specialized suitcase replicator. Each cut or rejoin takes one second. $2,000, 2 lbs., C/300 sec. LC3. For repairing nano-thorn, a unit is 10× cost and LC1.

DEFENSES

As technology to cause injury or death to humans improves, gear to protect people will struggle to keep up. Here are a few more possibilities.

ARMOR

This equipment is specifically designed to protect the user from impact damage, whether from weapons or something else.

Rigid Body Armor

Composite laminate armor segments can be made for any body part. Use the rules for tailoring armor (**Ultra-Tech,** p.

174) with one of these full-body suits. It does not protect the joints (**Martial Arts,** p. 137) and is always recognized as protective gear.

Hardshell Armor (TL9-12)

Standard and heavy-weight hardshell armor usually comes as several unconnected pieces (helmet, torso/neck/groin, two upper arms, two lower arms, two upper legs, two lower legs) that must be secured separately (10 seconds per section, halved with a Soldier roll). Light and diaphanous-weight pieces can be attached to a mesh body stocking (30 seconds, halved with a Soldier roll). Adjust for SM.

*Old is in! Gadgeteers often like their gear to look outdated or retro. Check out the **GURPS High Tech: Pulp Guns** volumes for possibilities of what "old school" blasters might resemble.*

Rigid Body Armor Table

TL	Armor	Location	DR	Cost	Weight	LC
9	Hardshell Suit	all	30	$2400	48	2
9	Crash Suit	all	30/10	$800	36	4

Multiply DR by 1.5 at TL10, by 2 at TL11, and by 3 at TL12.

Airbag Suit Table

TL	Armor	Location	DR	Cost	Weight	Power	LC
9	Airbag Suit	all	10	$200	4	A/2 months	5

Muliply DR by 1.3 at TL10, by 1.5 at TL11, and by 2 at TL12.

Crash Armor (TL9-12)

This is civilian hardshell armor optimized for crashing, falls, and high impact sports. It provides full protection against crushing damage, and uses its reduced DR against all other types of damage. Adjust for SM.

Airbag Suit (TL9-12)

Single-use inflatable airbags to protect in high-speed collisions. It *only* provides DR vs. falls in a gravity field and large-area collisions (a blow by an object at least the same size as the suit), and it won't trigger for a velocity less than 10 yards per second. It uses a mesh of active rangefinders (laser, radar, or sonar) to detect collisions, and these rangefinders can be detected by the appropriate sensors.

The suit takes five seconds to fully deflate after activation, giving a DX penalty equal to the time remaining. Heavier suits multiply DR, cost, weight, and number of power cells by the chosen multiple, and deflation time by the square of the multiple – a suit with double protection takes four times as long to deflate. Adjust for SM.

ENVIRONMENTAL GEAR AND SUITS

Humans love to travel where the environment wouldn't normally permit them. Here are some additional possibilities to go where few have gone before.

Gill Pack (TL10)

A gill suit membrane (**Ultra-Tech,** p. 178) packed into a cylinder similar to a large air tank. It connects to an air mask or sealed helmet. $2,000, 10 lbs., D/24 hrs. LC4. Duration improves like an artificial gill (**Ultra-Tech,** p. 177).

Buoyancy Compensator (TL9)

A reusable, controllable life jacket (**Ultra-Tech,** p. 188) primarily used for diving gear, whether civilian, military, or industrial. It must be connected to an air source. The compensator can be finely controlled by a computer to keep neutral buoyancy or cause an emergency ascent when air tanks run low. By default, it does *not* inflate when submerged. Designed into environment suits or armor, each unit ($20 and 1 lb.) will support 100 pounds × (TL-7) in water. LC4.

Scuba Gear (TL9)

TL9 scuba gear takes advantage of all the advanced materials available in **Ultra-Tech.** It includes a drysuit (p. 177, $200, 5 lbs.), air mask (p. 176, $100, 1 lb.), snorkel ($30, 0.25 lbs.), fins (p. 39, $50, 2 lbs.), buoyancy compensator (above) built into a load-bearing vest (**High-Tech,** p. 54, $60, 4 lbs.), medium air tank (p. 176, $80, 4 lbs.), an emergency mini air tank ($50, 0.5 lbs.), weight belt ($5, about 20 lbs.), and dive computer (tiny computer with datapad, tiny sonar comm, and depth gauge, all ruggedized: $200, 0.2 lbs., B/60 hrs). $795, 38 lbs. LC4.

Biomorphic Swim Fins (TL10)

Shape-changing bioplastic swim fins provide Enhanced Move 0.5 (Water), and retract into thick shoes to allow unimpeded walking. These are much larger than the fins listed on p. 39 of **Ultra-Tech.** $150, 2 lbs. LC5.

Biomorphic Diving Suit (TL10)

A bioplastic smart-matter gill suit with extensible hand and foot fins. The suit changes shape to maximize speed and efficiency. It allows the best unpowered swimming speed possible for humans: +3 to Basic Move for calculating Water Move, plus Enhanced Move 1 (Water). The duration of the air extraction improves like an artificial gill (**Ultra-Tech,** p. 177). The suit is built with the equivalent of a flexible D cell, which cannot be removed. $5,500, 10 lbs., D/24 hrs. LC4.

DEFENSE SYSTEMS

These must be designed into any armor; they cannot be added afterwards.

Gas Channels (TL9)

Gas channels disperse a cloud of gas or aerosols around the user for defensive purposes (see **Ultra-Tech,** p. 159).

Similarly, "old-school" gear from other sources – such as GURPS High-Tech or even GURPS Low-Tech – can form good retro shells for modern equipment. A cutting-edge audio system in an antique music box is a conversation starter.

The dispersal unit can hold 160 doses of gases in eight tubes of 20 doses each. It can be triggered with any number of doses at once. The usual load for infantry is any variant of smoke or radiant prism; riot police use anti-tangler aerosol and riot gas. A suit can have both gas and fluid channels. $200, 2 lbs. LC4.

Fluid Channels (TL9)

Secrete fluids such as slipspray or biochemical agents. The dispersal unit can hold eight single dose tubes, which can be triggered in any combination. A suit can have both gas and fluid channels. $200, 2 lbs. LC4.

WEAPONRY

Many advances in technology begin first as military projects or other harm-causing pursuits. Here are some additional options for futuristic weapons.

Notes on Robot Weapons

Genius missiles can be given stealth, camouflage, and armor! Take any item from *ECM and Stealth* (*Ultra-Tech,* p. 98) marked as "adjust for SM," and add that adjusted weight to its encumbrance. Fixed-size devices can be added as-is, after reducing the power cell size to match the missile's duration. All genius missiles have Payload 3, which is usually the warhead but can be used to store other mission-specific equipment. BL is 7.2 lbs. for the striker missile and 1.8 lbs. for the hunter and floater missiles.

WARHEADS AND AMMUNITION

These disposable surveillance devices can be weapon-launched for ranged delivery.

Camera (TL9)

The warhead is replaced with a downward-facing wide-angle camera and directional transmitter. A parachute or contragravity generator keeps it aloft for one minute (parachute) or five minutes (contragravity). The camera's abilities and the transmission range are shown in the table below.

Camera Warhead Table

Warhead	Effects
10mm	NV 7, 1× magnification, range 200 yards
15mm	NV 7, 1× magnification, range 500 yards
18.5mm	NV 8, 1× magnification, range 800 yards
25mm	NV 9, 2× magnification, range 1 mile
40mm	NV 9, 4× magnification, range 3 miles
64mm	NV 9, 8× magnification, range 10 miles
100mm	NV 9, 16× magnification, range 30 miles

Camera payloads are four times normal cost, or five times normal cost to add Infrared Imaging, 10 times normal cost to add Hyperspectral Imaging, and 20 times normal cost (and TL10) to add PESA. Magnification doubles every TL after introduction. LC3.

Robobug Hive (TL9)

This is the precursor to the swarm warhead (*Ultra-Tech,* p. 156). The missile contains stored robobugs (*Ultra-Tech,* p. 111). The shell can be programmed to eject the robobug backward at apex (when fired into the air), just before any impact, or *after* an impact (to embed the hive into the dirt). Larger shells can carry more than one robobug. Change damage to crushing, and add (0.25) armor divisor.

Robobug Hive Warhead Table

Warhead	Number of Robobugs
25mm	1 (worm or contragrav only)
40mm	3
64mm	12
100mm	50

Robobug hives are five times normal cost *plus* the cost of the robobugs. LC3.

ROBOT WEAPONS

Robotic weapons are revolutionizing modern battlefields; there's no reason to believe this won't continue in the future.

Nuclear Striker Missile (TL9)

This is a striker missile (*Ultra-Tech,* p. 168) with a mininuke warhead and defenses to reduce the chances of being shot down – built with DR 15 laminate armor, a thermo-optic chameleon surface, and radar stealth. It is sealed with scent masking to hide the volatile fuels from chemsniffers before launch. Adds $42,390 and 6.6 lbs.

Nuclear Hunter Missile (TL10)

At TL10, a mininuke (*Ultra-Tech,* p. 156) can be mounted into a hunter missile (*Ultra-Tech,* p. 168). It has the same enhancements as the nuclear striker missile, but with a multi-spectral chameleon surface instead of thermo-optic. The TL10 armor is DR 22. Adds $10,700 and 1.65 lbs.

It might even be a good idea to spend some extra money on lower-tech items. It's easier to impress and persuade primitive natives if you can offer them high-quality gear they comprehend.

Decoy Hunter Missile (TL10)

Usually found accompanying nuclear hunter missile salvos. This missile has the same enhancements as the nuclear hunter missile (p. 10), but it replaces the warhead with a jam-only deceptive radar jammer (*Ultra-Tech,* p. 99) with a one-minute duration. Adds $1,700 and 1.65 lbs.

Laser Hunter Missile (TL10)

Occasionally found accompanying nuclear hunter missile salvos. It has the same enhancements as the nuclear hunter missile (p. 10), but it replaces the warhead with a gyrostabilized blue-green pulse holdout laser to attack counter-battery missiles, drones, or ground targets. The rest of the space is filled with non-rechargeable power cells, giving 8× the usual number of shots. Adds $1,800 and 1.65 lbs.

Nuclear Floater Missile (TL10^)

TL10^ adds more useful defenses to standard floater missile (*Ultra-Tech,* pp. 168-169). This weapon is built with a mininuke warhead, an invisibility surface, radar stealth, DR 22 laminate armor, and two distortion chips (to cover the whole length). Adds $12,400 and 1.66 lbs.

CYBERNETICS

Sometimes the best tech is that which becomes *part* of the wielder. Here are some new options for gear that can't be lost, forgotten, or stolen easily.

Stickskin (TL10)

The recipient's palms and soles are covered with switchable gecko adhesive skin (p. 6). When activated, the user can adhere to any solid surface. They can be combined with slickskin at no penalty, since they cover nonoverlapping areas.

Statistics: Clinging (Temporary Disadvantage, Electrical, -20%) [16]. *16 points.*
Availability: Major procedure (minor at TL11-12). $16,000. LC3.

This is only a minor procedure and half cost if the recipient already has bioplastic or living metal skin.

Swimskin (TL10)

The recipient's skin is covered with a biomemetic swim surface and a permanent water-repellant coating (see *Waterproof Coating,* p. 4). The user will have to use sonic showers or wash with non-water-based solvents ("Those deep-sea construction workers have to dry clean their skin!"). The microscopic layer of trapped air reduces water drag, increasing Water Move when unclothed. Provides at most Slippery 3 when combined with Slickskin.

Statistics: Water Move +2 [10]; Resistant to Contact Agents (+3) [3]; Slippery 1 [2]. *15 points.*
Availability: Major procedure (minor at TL11-12). $25,000. LC3.

This is only a minor procedure and half cost if the recipient already has bioplastic or living metal skin.

ABOUT THE AUTHOR

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Notes on Skin Cybernetics

In general, only one coating of dermal armor (subdermal armor, bioplastic skin, nanoweave subdermal armor, monocrys subdermal armor, or living metal skin) can be implanted. Additional armor would compromise the function of the skin itself; as a start, the subject gets Unnatural Features 1 for every layer of dermal armor beyond the first. The GM should also threaten to impose any combination of reduced HT, reduced Appearance, reduced Basic Speed, Chronic Pain, Ham-Fisted, Low Pain Threshold, Numb, Slow Healing, Susceptible to Contact Agents, Terminal Illness, and Wounded if the PC is not fastidiously careful about cleanliness and injuries. Most of these armors have the Tough Skin limitation, so they won't protect against minor scrapes leading to infections. If the player really wants a walking tank, full cyborgization is probably a safer bet.

Most other skinware can be added in any combination, but each subsequent addition has a -1 penalty to the Surgery roll per existing layer (including dermal armor). bioplastic skin and living metal skin reduce the penalty to -1 per two (bioplastic) or three (living metal) existing cyberskins. Instead, multiple cyberskins can be added in one surgery, which has an additional -1 penalty per full two cyberskins being added at the same time. Because bioplastic and living metal skin replace skin with self-healing machinery, there are no Surgery penalties when building multiple cyberskins into a single implantation along with bioplastic or living metal, although it might be harder to find a hospital with that exact combination in stock.

When applying multiple cyberskins as a single implantation, the surgery cost, time, injury, and recovery are those of the riskiest operation, plus half the values of all the others.

PAPER CELLS

BY BRIAN RANZONI

"We should have brought spares," Agent Psykes complained. His HUD display showed 2% power remaining. "C cells aren't exactly rare gems."

Agent Bane stared into the darkness of the mine. Readings indicated high levels of methane and radon. Already, the scrubbers in her helmet whizzed. She grinned. "We don't need C cells."

She stepped carefully around a gear from the blasted elevator. Somewhere up the shaft, they heard the girl shouting curses, even above the guttural chant of the cyber ninjas. Bane pulled the cover off an emergency light, and then disconnected its power deck.

"Yeah," considered Psykes, "But we can't share the same pack."

"We don't need to." Bane opened the deck to reveal a stack of black film. "Paper batteries. Just fold, spindle, and mutilate until it fits."

Her grin turned grim. "Just enough juice for the tunnel. But you know what they say. The way out is through."

At the bleeding edge of the digital age, paper once again revolutionizes the world. Campaigns set in the microtech age and beyond often use generic power cells (**Ultra-Tech** p. 18). However, alternate means of power often coexist. Whether for realism, punch, or variety, one alternative is the paper cell.

PAPER IS YOUR FRIEND

As a nanocomposite, paper cells store massive energy in minimal mass. One postage stamp slice powers a light diode for days. A sheaf of battery paper can drive an electric car. Power grains may be impregnated in muscle fibers to give them a boost, or supply artery-cleaning microbots. Biodegradable and even edible, the paper cell fits anywhere a sheet of construction paper will go. Paper cells may be portrayed as a catalyst for a TL9 society.

Sizes of Paper Cells

Paper cells fall under standard sizes, rated from AAA to F. (These sizes differ from regular power cell sizes; see p. 15 for two possible conversions.) One B paper cell provides the same power as a modern lithium AA battery. Each size category increases capacity nine times, and may be stacked or cut down accordingly (see *Jury-Rigging,* p. 14). Further stats are given in the boxed text on pp. 13 and 14. Paper cells are rechargeable.

AAA Paper Cell: Sand-grain cells stimulate body tissue and micro-medical devices.

AA Paper Cell: Rice cells power tiny devices, including: hearing aids, body implants, and insect-sized robots.

A Paper Cell: Stamp cells power common small devices, including: wrist computers, pocket lights, and hideaway guns.

B Paper Cell: Playing-card cells are the baseline unit, due to capacity and convenient handling. B cells power net phones, electronic binoculars, and various pistols.

C Paper Cell: Letter-sheet cells are the largest retail size. They are mainly used in computers and power decks (see below). C cells may be fed into any standard printer.

D Paper Cell: Newspaper sheet cells are the standard industrial unit, from which smaller cells are cut. They may be ordered factory direct or purchased in outlets. D cells are often built into the hulls of cars, small boats, aircraft, and powered armor!

E Paper Cell: Large bed-sheet cells. These are medium industrial units, used in large piles or thick sheaves. They supply anti-air lasers, and truck-mounted radars, and are built into wind turbine and solar arrays. E cells are the largest size normally available at a factory-outlet store.

F Paper Cell: Large tent cells. Intended for special and heavy operations, such as storing emergency power onboard space and sea vessels, or driving electric cargo trucks and trains. F cells are also built into the walls of collapsible structures, such as electronic tents for arctic explorers, search-and-rescue smart huts, and portable military buildings.

Power Decks

Seedy Brent stepped shivering into the light. As sensors whirred close to his body hairs, the star orcs rummaged through his luggage. "What dis?" one demanded.

"A telescope for stargazing," he said, "That's why tourists come to Saturn, chief."

"Hrgh! Why 'tourist' need pistol!" The chief orc hoisted another offending device.

"Typical Terran camera. You've probably seen a dozen like them since you, uh, took over customs."

Another orc touched a deck of cards to its enormous nostrils. For the first time Brent wasn't shivering because of the cold. The beast flicked open the pack and drew a jack.

"Enough, Morg!" the chief shoved his subordinate, "Remember last time you eat human paper!"

Brent dressed himself with relief. Later, as he attached his telescope to the camera, he considered himself lucky. "If its taste was any better than its smell," he thought, "I'd have been orc dinner." Every B cell was needed if he was going to take down the Grimy Lord. Seedy Brent wired the card deck into his covert laser carbine.

For more gadgets, check out GURPS High-Tech and GURPS Bio-Tech.

Paper Cell Stats

"Charge" is the time to charge the cell. "Wt." is weight in pounds. Cost is per unit. Reload is the time to reload a device in seconds.

Paper cells have DR 1 and HT 10. Rugged paper cells are DR 2, HT 12 at the same weight, but double cost.

Paper Cells Table

Size	Charge	Wt. (lb.)	Cost ($)	LC	HP	Reload
AAA	20 sec.	0.000005	1/100	–	1	6
AA	1 min.	0.00005	1/10	–	1	6
A	3 min.	0.0005	1	–	1	3
B	9 min.	0.005	5	–	2	3
C	27 min.	0.05	10	4	4	3
D	1.3 hrs.	0.5	50	4	6	6
E	4 hrs.	5	250	3	14	12
F	12 hrs.	20	1250	3	22	24

For large-scale needs, paper cells may be stacked into refillable containers called *power decks* (which also provide some protection from the elements). Many military, automotive, and industrial devices accept decks rather than individual cells. In turn, cells may be drawn from a deck. Thus, soldiers who find themselves outside an enemy bunker might be able to pop open their deck, draw a pair of A cells, and rig the control panel to enter.

Sizes of Power Decks

Standard decks are sold in B sizes and up, providing equivalent power. They fit a specific cell size in sets of 10. An empty deck is half the weight of the total number of cells that it can fit, and costs the same as a single cell. Energy is simply (the number of cells) times (the energy of one cell). See *Paper Power*, p. 14, for example energy values.

Example: A CB deck holds 10 B cells, so 10 × 3 = 30 Ah.

All cells within a power deck will recharge and discharge at the same time. Some common deck sizes are as follows:

BA Deck: Bottle cap sized. Holds 10 A cells. Common for cheap, portable devices.

CA Deck: Pistol magazine sized. Holds 80 A cells. Standard for pistols and carbines.

CB Deck: Small envelope sized. Holds 10 B cells. Common for computers and radios.

DB Deck: Thick card pack sized. Holds 80 B cells. Standard for infantry rifles and magnetic launchers.

DC Deck: Business envelope sized. Holds 10 C cells. Powers electric bikes and light drones.

Most devices safely accommodate only one deck or cell size. *Smart decks* use microprocessors to detect and compensate for mismatched cells. They accommodate one size category smaller or larger, at double price. The best smart decks can also accommodate different voltages.

Decay and Destruction

Because the components are cellular and redundant, paper cells are homogenous for injury purposes (**Basic Set,** p. 380). They function in temperatures between -100° to 400° F. They will burn at temperatures above 420° and may be damaged by power surges or overcharging as the GM determines. Cells will lose 5% of their charge for every *month* in storage. However, they may be charged and discharged endlessly, under normal conditions.

Paper cells are biodegradable. This is useful for implants, where the body is expected to absorb a microbot after completing its duty. Otherwise, paper cells become brittle over time when exposed to light, air, and bacteria. Power decks can preserve cells for decades or centuries, provided they aren't left out in a desert or radioactive zone! For every HP a piece of battery paper loses from damage or decay, the cell loses a corresponding fraction of its energy capacity. *Wet cells* will rapidly discharge, and short out any device. However, they can be dried and reused if they haven't fallen apart first.

Paper cells are not suitable for devices that require long-term storage followed by sudden activation, such as guided missiles and bombs.

Using Paper Cells

Equipment quality bonuses (p. B345) apply to paper cells. Good-quality cells and higher may also have a modest bonus to capacity and shelf-life, up to 1.5 times. If a cell has to be rolled or folded first, the GM may specify an additional time or skill penalty for reloading. Fast-Draw (Ammo) skill applies.

CAMPAIGNING WITH PAPER

Paper cells suit both realistic and cinematic campaigns. However, they may not fit all rules or play styles. Paper cells are intended to be an alternative, and GMs likewise have options.

Weird campaign: What if most or all of the style of tech differs wildly from the rest of the style of the setting? Can you envision a gritty hard-sci setting with only space-opera tech, or vice versa? Or does the tech define the genre?

Paper Power

The suggested paper-cell default is 3 Ah for one B cell, consistent with a top-quality modern AA battery. Capacity scales linearly with mass; each size category is roughly nine times larger, and so each carries nine times as much power. One pair of C cells provides 54 Ah, outperforming a commercial car battery! Voltages are based on equivalent real world batteries. These are all approximations, balanced between the plausible and the gameable (see *Bibliography*, p. 15).

Paper Cell Capacity

Size	Ah	V
AAA	0.004	1
AA	0.04	1
A	0.3	1.2
B	3	1.2
C	27	12
D	243	1-120*
E	2187	120-440†
F	21870	440+†

* Because D cells are cut into smaller sizes, they share the voltage of the target cell. Otherwise, whole D cells are 120V for powering domestic and small industrial appliances.

† Heavy-duty E and F cells are customized for specific devices.

Fabrication

Basic paper cells are made from carbon fullerenes, room-temperature liquid salt, and plant matter. Lithium and a variety of metals may be used in higher quality units. Cells cannot simply be mixed in the kitchen – they must be manufactured. The result resembles black construction paper, but they may be dyed to any color. Paper E cells are printed off like newspaper and cut to size. The standard shape is a square or rectangle, allowing cells to be arrayed. However, custom shapes may be created.

Improvised and basic-quality power decks may be assembled in any electrician's shop. Advanced decks require microprocessors to regulate voltage and discharge.

Cell Capacity and Voltage

The exact capacity of paper cells is ultimately up to GM; see p. 15 for some suggestions and Paper Power (above) for an example.

If specific capacity matters in a hard science or number-heavy campaign, use amp hours (Ah). Amps are the Standard International unit of electric current; amp-hours is one common method of rating real batteries. For bigger cells and more powerful gadgets, amp hours may convert to watt-hours as follows:

(Amp-hours) times (voltage of the cell) equals watts, or Ah × V = Wh.

The voltage (V) of a paper cell may vary between sizes, societies, and even species. GMs are free to set the value themselves, especially if they wish to specify a device's running time or wattage. Most devices safely accommodate only one voltage, and require jury-rigging to use strange cells. Smart decks that can adjust voltage can be an uncommon but valuable solution.

Advancing Paper Cells

Nanotech may improve all components at the molecular level, doubling energy and shelf life. Such advanced cells are also double the price and one quarter as available. At TL10, common nano-fabrication allows these advanced cells to become standard. Atomic meddling at TL11 can quadruple the energy capacity of paper cells!

Jury-Rigging

Paper cells can be cut, pierced, folded and rolled to any shape. It's possible to braid temporary power cables out of strips or feed sheets into a standard printer for desperate instructions or sly plans. Geometrically, paper cells may be cut into ninths to create smaller sizes (e.g., one B cell produces nine A cells). However, they may be trimmed to any size or shape if the user is willing to keep track!

Voltaic Piles

Adventurers can stack reams of paper cells, creating a "voltaic pile." Likewise, paper cells can be laid end-to-end in voltaic arrays. Nine cells equal one size category larger.

Creating stacks should not require a skill check, unless the character is from a culture that has little knowledge of paper cells (a check is *likely* if their familiar TL is also lower).

Rigging a device is another matter. A roll against Electrician or Electronics Repair is needed to fit smaller cells into any gadget, including a deck. Oversized cells, or those with different voltages, may require penalties set by the GM. Devices and cells of different tech levels also require modified rolls (p. B168).

There is a powerful tension in our relationship to technology. We are excited by egalitarianism and anonymity, but we constantly fight for our identity.

– David Owens

Tales of the Solar Patrol and the core books for GURPS Traveller and Transhuman Space provide descriptions of advanced equipment, in addition to being great settings for using fun tech.

Bursting Paper Cells

Paper cells cannot normally explode, unless they contain a volatile electrolyte such as lithium. They will burn at temperatures above 423° F, and the liquid electrolyte will boil away. Loaded power decks may rupture, but will not burst like a frag grenade unless tightly sealed. Space operas and other cinematic campaigns may ignore these limits.

Eating Paper Cells

Spies and smugglers faced with capture may *eat* paper cells. Basic cells have no nutritional value for humans; an advanced cell will be toxic! Fullerenes might also be carcinogenic. Otherwise, they are digestible. Explorers meeting a tribe of intelligent herbivores might gain their trust with a few paper-cell snacks.

DB-52: The Covert Card Pack

In the United Space Defense Force, it is known only by its designation, DB-52. To agents of the covert operations division, these "jack packs" are life-saving examples of poker power. Disguised as a fully playable deck of cards, the DB-52 contains 52 B cells, with deck electrodes imbedded into the package markings. They may fit into any military DB slot (and civilian gadgets at GM's discretion) but are most often used in special-ops gadgets – or for smuggling cells into repressive societies. LC2.

OPTIONS

GMs must decide on the availability of paper cells. There are a few possibilities to consider.

Integration

Paper and power cells may coexist. In this case, assume 10 paper cells of the same size equal one power cell of the same size category. For example, 10 B paper cells equal one B power cell.

Flexible power cells (**Ultra-Tech,** p. 19) might not exist in a culture with paper cells. Otherwise, flexible cells are used in niche applications, such as hardened military electronics and high-powered battlesuits. Paper cells take care of devices with lower power requirements, such as electronic textbooks and personal comm links. Flexible power cells might even be a competing technology from a rival megacorporation!

In either case, paper cells are thinner, lighter, and easier to conceal or recharge. They are also easier to lose, and are both degradable and costly. In turn, power cells are mechanically complex and more likely to explode or fail. However, they are cheaper, more powerful per unit, and have indefinite storage life.

Likewise, a challenge facing adventurers might be that one type of cell is incompatible – or possibly illegal – in a strange society or facility.

Segregation

Strict GMs will note that **Ultra-Tech** (p. 19) lists one A power cell as being 10 times as potent as a modern AA battery; one B paper cell also is equal in power to a modern AA battery. Under these guidelines, *100* B paper cells equal one B power cell. This is gameable, but calls into question whether paper can compete.

The simple solution is to choose one technology or the other. A hard-science campaign will sneer at pocket-sized fusion cells or superconducting loops. Conversely, a cinematic or default-rules campaign won't sacrifice fun for wimpy paper.

Otherwise, paper cells may be a *precursor technology*. If GMs find power cells to be overpowered at TL9, use paper instead. At TL10, a console cowboy may be hired to break into Dynamojo Co. to discover the secret plans for power cells – Ingenuity Inc. will pay big money for this.

Controlling Paper Cells

Not everybody likes the paper revolution. If the introduction of paper cells leads to unforeseen problems for the campaign, the GM has several options to bring the paper under control.

Paper cells **are** *power cells*. Nanocomposites are simply the core of the power cell.

Paper cells are hazardous. Mega News announces a connection between cancer and ingested nanocomposites. Now cells are regulated like asbestos. Such hazards can introduce new roleplaying challenges. Mind those firefights in a warehouse full of cells! And think twice about eating them . . . Reduce Legality Class by 1, to a minimum rating of 0. (If paper cells didn't have a Legality Class before, they are LC4.)

Paper cells are coveted. Nanotech brings power to the people, so the batteries aren't brought out at all. Any sort of nanocomposite-voltaic is LC = CR - 1 or worse (p. B507). Optionally, at any society with Control Rating 4 or above, sales of D cells and larger might be tracked even if they are legal to buy. Large orders might be reported!

Paper batteries are plain difficult. The nanotech revolution turns a bit slowly. Cells cost twice as much. AAA through A paper cells appear in late TL8. B and C paper cells appear at TL9. Introduce remaining sizes at TL10, and lower price to the default value. Double capacity-cells do not appear until TL11, or not at all!

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ABOUT THE AUTHOR

After eight years serving in the United States Navy, Brian Ranzoni attended college in a comical attempt to meet educated women. Since then, he has devoted his life to the mysteries of paper, explored chiefly with his pen and word processor. He is the founder of **brianranzoni.com**, a narcissistic and occasionally nihilistic literary website. This is his first article for *Pyramid*.

TRACKING CARDS

One trouble with accumulating many gadgets, gizmos, and doodads is keeping track of them. In the modern era, miniaturization permits someone to carry a dozen items in a small laptop bag; it's quite possible this problem will grow in the future.

Here, then, is an organizational idea for keeping track of lots of items, designed in a way that you can use a low-tech trick to sort what you need when you need it. Note that this article discusses the broad idea in a fairly general way; you'll need to tweak it to the specifics of what you're trying to sort.

MATERIALS NEEDED

Gather the following:

● Lots of index cards – at least one per item you'll want to sort, although you'll certainly want extras.
● A paper hole punch. Something able to punch a bunch of holes in a bunch of cards at once is ideal. The photographs in this article used a three-hole punch with adjustable punchers.
● One chopstick – ideally a perfectly rounded, narrow one. (Other objects can be substituted for this, but chopsticks are quite often cheap and readily available.)
● A pair of paper-cutting scissors.
● Writing utensils. (Even better, if your printer allows for printing to index cards, do that!)

THE IDEA

In a nutshell, you're going to use one card per "object." Each card will have holes at the bottom; each of these holes will represent a true/false aspect that may or may not apply to each item in the entire stack of cards. (For example, in a campaign where lots of aquatic adventures take place, the left-most hole may represent "waterproof.") Some of these holes may be "notched," meaning there's a slot that runs from the hole to the edge of the card.

Once all the items are written on cards and their notches are "coded" into the cards, the chopstick can be used to skewer the whole stack in a particular hole; loosely shaking the deck allows items that correspond to that notch to fall out. As cards are sorted, the process can be repeated with different holes to allow for sorting of multiple aspects.

This may sound complicated, but it's not. Let's look at a quick sample deck we made for photographic purposes.

BUILDING AN EXAMPLE DECK: GERTI'S GEAR

For photographic purposes, this deck uses a much bigger font than you'd probably use in your own games. In fact, much of the information wouldn't even necessarily be written on the card; that's what the holes are for!

Gerti is a cyborg in a hypothetical not-too-distant-future campaign. She has lots of gear to keep track of. Her player has five criteria she wants to be able to sort by:

● Is it illegal?
● Is it a weapon?
● Is it cybernetic?
● Is it armor or protection?
● Is it powered? (In other words, does it require batteries or an external source?)

Since there are five criteria, Gerti's cards need five holes each.

First, we started out with a bunch of blank index cards and our three-hole punch. Ours had three adjustable punchers, so we nudged them all to the edge of the punch.

Since all the spacers have the same width, the holes are all going to be (more or less) equally spaced.

We then punched our first batch of three holes. We used the far edge of the punch as the guide, aligning it with the far edge of the card. To make the next batch of holes, we nudged over the cards a bit, making sure the outermost punch went through the (soon-to-be) center hole of the punch again. This doesn't need to be lined up perfectly; using the punch as our guide keeps us from having to move the punchers – which we could also do if we needed more holes. The goal is to get as many holes on cards as we need, as consistently placed as possible. (It just so happened that the holes we made ended up looking mostly centered, but it's not essential.)

The number of cards you can punch at once depends on your hole punch – doing as many as you can at a time makes the job go faster. The one we used could do about four cards comfortably.
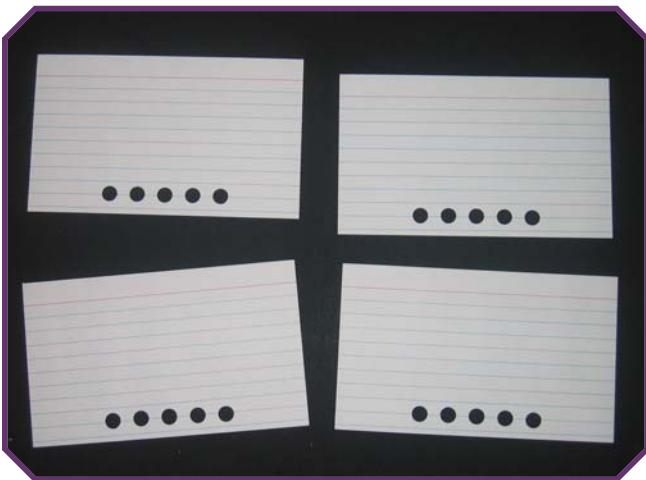
After a while, we had a stack of cards with holes punched how we needed them. Since we knew the criteria of each card, we went ahead and cut our notches now. (See the photo at the top right of this page.) A card with no notches could be used to create a key to the notches, or it could hold essential character information.

In the real world, it would make more sense to put the information on each card first, *then* cut the notches – but doing it this way means we have a photo of a bunch of blank, notched cards.
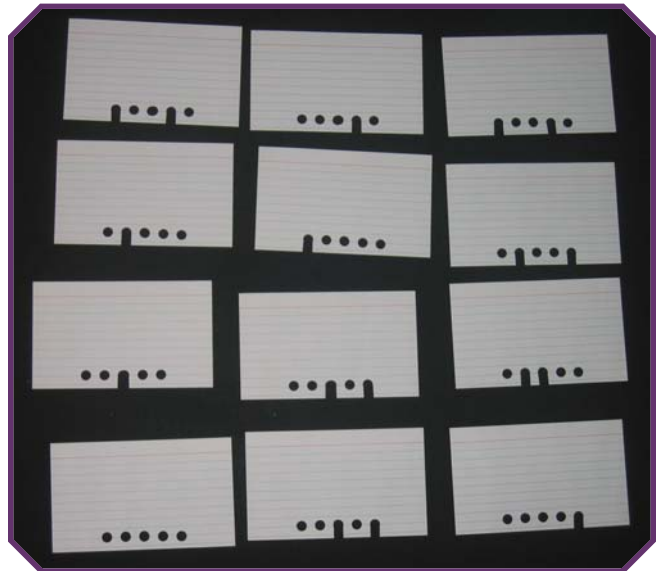
Finally, we put the information on each card. Since we were making an easy-to-photograph deck, we put bare-bones information on each card: What it represents, and what flags have been represented with each notch.
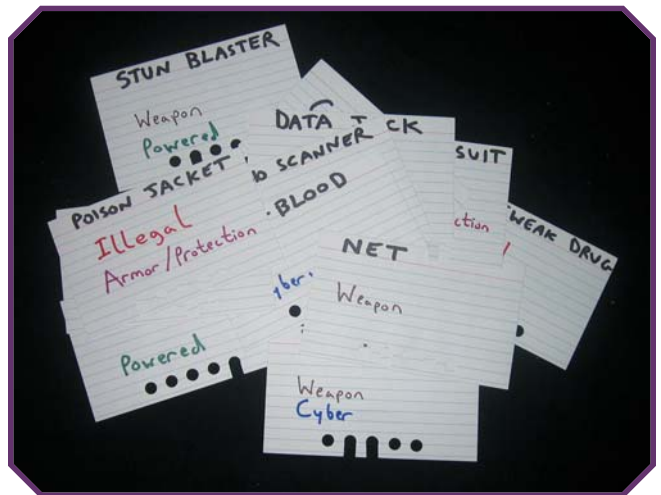
In the real world, these cards would probably contain all kinds of useful information. See the sample cards based on this deck on pp. 22-23 for two abbreviated examples.

Sample Key

The sample key is for the cards on p. 22, as well as the cards seen in the photo above.

A key for the psionic ability cards on p. 23 would read (from top to bottom): Psychokinesis, Ergokinesis, Offense, Defense, Other.

Sample Key

Illegal

Weapon

Cybernectics

Armor/Protection

Powered
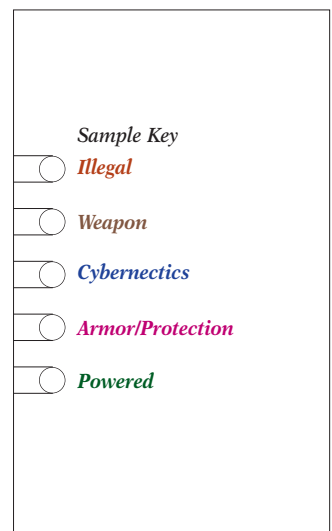
Using the Deck

Once our deck was built, we were able to start using it. As an example of the utility of the deck, let's say Gerti finds herself in a situation where she needs to defend herself in a city with heavy surveillance. She wants to cull through her gear to find all legal weapon options she has available.
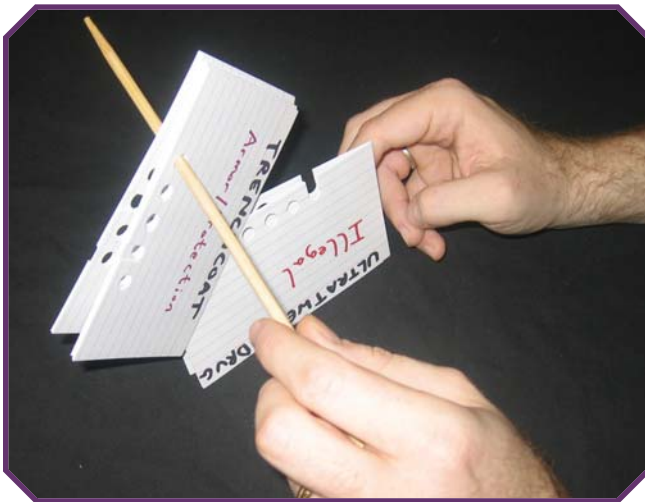

Using the chopstick, her player skewers the right-most hole (when the holes are on the top of the cards) and shakes gently. Since that hole is notched if a card is *illegal*, she wants to keep all the cards that remain hooked to the chopstick – those should all be legal objects.


*For a handy gadget-style prop, grab the **Space-Opera Scanner** in **Pyramid** #3/9.*

She then unhooks that stack of legal objects and skewers the second hole from the left – the one that marks if it's a weapon or not. Shaking gently, she now keeps all the cards that fall out (since those ones are all weapons).
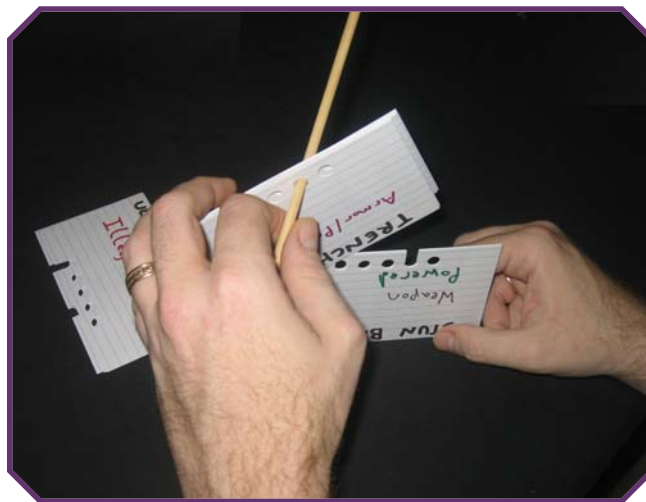
The resulting pack should all be legal weapons; she discovers she has three options to choose from!
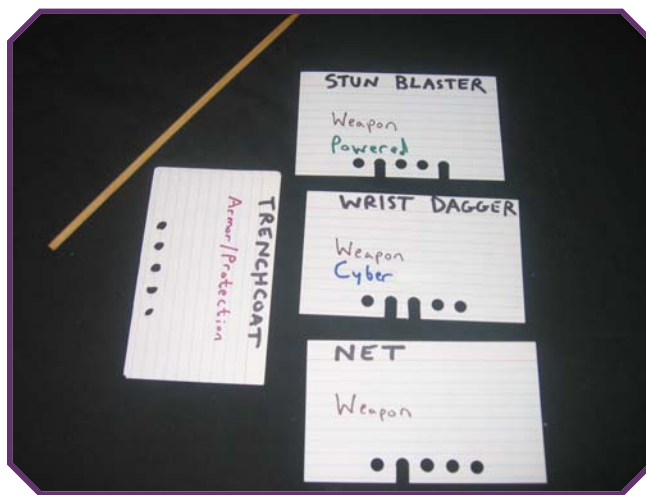
Uses and Advantages of the Deck

A deck like this really shines when a player has lots of options that he has to keep track of – especially if each of those options has information that is useful to keep with it. For example, the base idea could be used by a magician who has lots of spells to keep track of (perhaps with holes that denote whether a spell is defensive, offensive, costs fatigue, and so on).

It's also useful if the players need to keep track of what items they have on-hand at this moment. Especially if they have more gear than they could carry comfortably, the existence of a deck lets them manually cull which items they have for a particular adventure – and then the holes and notches let them sort out what they have based on what they need!

A deck like this could also be used to represent information the PCs might need to sort out. For example, a stack of cards could contain a random word on each one; one of them represents the password of the bad guy. By acquiring or figuring out various clues, they figure out which notches are applicable; these might be representative of something, or merely symbolic. ("The password we want should have a notch on the first, second, and fifth holes!")

Of course, if using this technique, make sure that the password card has a unique pattern of holes – unless you give the heroes a way to figure out *which* of the multiple cards with those notches is the right one!

DISADVANTAGES OF THE DECK

There are a number of disadvantages of the deck that should be taken into account before using it in your campaign.

First, of course, there's the problem of having to generate a card for each item you want to keep track of. Once you work out a system to generate holes in a card, the rest is pretty easy and doesn't require any more handwriting than a normal character sheet. (Some hole punches have additional punchers; if you can generate five holes at once, making these cards is a breeze!)

Second, the criteria that holes/notches can keep track of need to be Boolean – in other words, all information needs to be "true" or "false." Thus the deck isn't incredibly useful to keep track of (say) the five levels of Legality Class in a deck – although five dots could be used to keep track of this information: "Is it Legality Class 1?," "Is it Legality Class 2?," etc.

Finally, the cards can be a bit flimsy; the existence of notches makes them likely to get caught on the edge of folders, in binders, etc.

ADVANCED TIPS

If you use this technique and discover you like it, there are a number of advanced techniques you can use.

Of course, the number of holes in each card is limited only by geometry (how many holes you can squeeze on a page) and necessity. If you're punching holes anyway, it might be a good idea to punch an extra hole or two for future use. For example, if Gerti's player had designed her deck so that there were six holes, with the sixth one unused, then the player is ready to go if the campaign starts including many more aquatic adventures; she simply defines the sixth hole to be "If is waterproof?" and cuts notches on the appropriate cards.

Second, it can be useful to have a good way to determine which way is "up" on the cards. One way to do this is to trim identical triangular wedges from each card, turning each card into a slight trapezoid. Then, if any cards are upside down, there's an easy-to-grab wedge you can use to cull those out by hand.

Alternatively, a clever technique might be to stick a hole in opposite corners – say, the northwest and southeast corners. Cut notches in all the northwest ones, but do not make notches in the southeast ones. Then, if you have a deck with cards in random directions, simply skewer one of the corners – the cards that shake out were upside-down!

As a final – easy – advanced tip, keep some cards with no notches cut in them. These cards will be trivial to cull – simply skewer the deck once for each hole, and the card(s) that are left on the chopstick when you run out of holes will be those with no notches. You can make these cards have information you *must* to be able to find in a loose deck – such as an index-card version of the character sheet.

Binary Sorting Deck

As another use of this technique, you can make a binary sorting deck. Consider the table below of the first 66 binary numbers.

Imagine if you had a stack of 66 items that you liked to consistently be able to sort into order (such as an alphabetical listing of abilities). Construct a deck of 66 cards, numbered 0 to 65, each with seven holes at the bottom. Then use the table below to determine where the notches should go, based on 1s. Thus Card 41 would have (left to right) hole-notch-hole-notch-hole-hole-notch.

When the time comes to sort them, skewer the right-most hole. Put the cards still on the skewer on top of the deck. Do the same with the second-most-right hole, again putting the cards on the skewer on top. Keep skewering from right to left, putting the deck on top each time. By the time you skewer the left-most deck and put the cards on top, the deck should be magically sorted! (To sort in reverse order, skewer from right to left, but put the skewered cards on the *bottom* of the deck.)

Of course, the chart below can be expanded to as many cards as you need, provided you still have room for holes and notches.

Number	Binary	Number	Binary	Number	Binary
0	0000000	22	0010110	44	0101100
1	0000001	23	0010111	45	0101101
2	0000010	24	0011000	46	0101110
3	0000011	25	0011001	47	0101111
4	0000100	26	0011010	48	0110000
5	0000101	27	0011011	49	0110001
6	0000110	28	0011100	50	0110010
7	0000111	29	0011101	51	0110011
8	0001000	30	0011110	52	0110100
9	0001001	31	0011111	53	0110101
10	0001010	32	0100000	54	0110110
11	0001011	33	0100001	55	0110111
12	0001100	34	0100010	56	0111000
13	0001101	35	0100011	57	0111001
14	0001110	36	0100100	58	0111010
15	0001111	37	0100101	59	0111011
16	0010000	38	0100110	60	0111100
17	0010001	39	0100111	61	0111101
18	0010010	40	0101000	62	0111110
19	0010011	41	0101001	63	0111111
20	0010100	42	0101010	64	1000000
21	0010101	43	0101011	65	1000001

Item: _____

Notes: _____

Category: _____

Item: _____

Notes: _____

Category: _____

Ability: _____
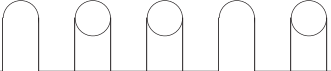
Notes: _____

Category: _____

Item: Palm Computer

Notes: See small computer, ***Ultra-Tech,*** p. 22.

Category: Powered

Item: Chameleon Suit

Notes: See chameleon surface, ***Ultra-Tech,*** pp. 98-99.
Illegal in this campaign.

Category: Illegal, Armor/Protection, Powered

Item: Stun Wand

Notes: See ***Ultra-Tech,*** pp. 164-165.

Category: Weapon, Powered

Item: Chip Slot

Notes: See p. B71 and ***Ultra-Tech,*** p. 216.

Category: Cybernetics, Powered

Item: Leather Trench Coat

Notes: See long coat, ***High-Tech,*** p. 64. +4 to Holdout.
DR 1.

Category: Armor/Protection

Item: Net

Notes: See p. B276; use melee net.

Category: Weapon

Item: Ultratweak Drug

Notes: A combination of an adder (***Bio-Tech,*** p. 155)
and Tempo (***Bio-Tech,*** p. 155). +1 to DX; Enhanced
Time Sense. No HT roll; aftereffects same as Tempo.

Category: Illegal

Item: Nu-blood

Notes: See blood cops, ***Bio-Tech,*** p. 165. Permanent.

Category: Cybernetics

Example Cards: Equipment (see Sample Key on p. 18)

Ability: PK Shield _____
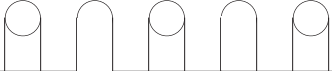
Notes: See **Psionic Powers,** p. 56. _____

_____

_____

Category: Psychokinesis, Defense _____

Ability: TK Crush_____

Notes: See **Psionic Powers,** p. 54. _____

_____

_____
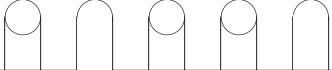
Category: Psychokinesis, Offense_____

Ability: Levitation _____

Notes: See **Psionic Powers,** p. 55. _____

_____

_____

Category: Psychokinesis, Other _____

Ability: Super Jump _____

Notes: See **Psionic Powers,** p. 57. _____

_____

_____

Category: Psychokinesis, Other _____

Ability: EK Shield _____

Notes: See **Psionic Powers,** p. 33. _____

_____

_____

Category: Ergokinesis, Defense _____

Ability: Hyperspectral Vision _____

Notes: See **Psionic Powers,** p. 37. _____

_____

_____
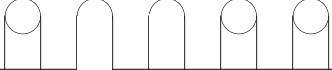
Category: Ergokinesis, Other _____

Ability: Lightning_____

Notes: See **Psionic Powers,** p. 33-34. _____

_____

_____
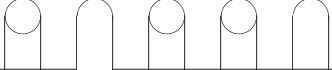
Category: Ergokinesis, Offense _____

Ability: Remote Control_____

Notes: See **Psionic Powers,** p. 32. _____

_____

_____

Category: Ergokinesis, Other _____

Example Cards: Psionic Powers (see Sample Key on p. 18)

PSI-POWERED IMBUEMENTS

BY REV. JASON "P.K." LEVINE

GURPS Power-Ups 1: Imbuements introduced a new class of skills which can *imbue* attacks (from punches to pistol shots) with supernatural power. In many settings, the cinematic warriors who demonstrate this kind of "impossible" ability are also masters of other powers . . . particularly *psionic* ones.

Fiction is full of psychic soldiers who have learned how to focus their inborn gifts on the art of war, from using a sixth sense to know just when to strike to teleporting a speeding bullet *inside* a foe's armor. While one can achieve this by mixing **Imbuements** and **GURPS Psionic Powers** as-is, it's a little more fun to add some synergy between the two.

In this framework, every psionic power has its own set of Imbuement Skills; see *Power Lists* (p. 25). Any psi with abilities or Talent for that power *and* the Imbue advantage can learn those (and only those) Imbuement Skills. The more powers you possess, the more Imbuement Skills you can learn!

> *A deranged madman is building an army of psychic soldiers to take over the world!*
>
> *– Raz,* **Psychonauts**

IMBUE

Even if you have multiple psionic powers, only buy Imbue *once*, with the *Psionic* (-10%) power modifier and a new *Power-Based* (-5%) limitation. The latter adds two restrictions and one benefit:

- You can only learn the Imbuement Skills listed for the psi power(s) you have.

- Imbue does not belong to any single power. Thus, instead of having a single Talent which applies to all Imbuement Skills, you must apply each separate power Talent to its own set of skills.

- If something negates some (but not all) of your psi powers, you can continue to use the Imbuement Skills for the psi powers you still have. In other words, if you lose one power, you don't lose the Imbue advantage – just the Imbuement Skills associated with that power.

IMBUEMENT SKILLS

Once you buy Imbue, you may learn the Imbuement Skills listed below for any psionic power that you possess (that is, any power for which you have abilities *or* Talent). You can learn any legal specialty for each skill – after all, the whole idea of Imbuements is versatility! Note, however, that Imbuement Skills can only be used on equipment and unarmed attacks – not on psionic abilities. Your psi fuels your Imbuements, not the other way around! See *What Can I Imbue, Again?* (p. 25) for more.

Psi-powered Imbuement Skills are bought as IQ/VH (not DX/VH) skills. When you learn each skill, add the appropriate power Talent (if you have it) to its level. If a skill shows up on the list for multiple powers, you may *choose* which one governs that skill. Note that there is no case in which you would ever add multiple psionic Talents to a single Imbuement Skill.

Example: Linda has Imbue 3 (Power-Based, -5%; Psionic, -10%), ESP Talent 2, Psychokinesis Talent 4, and a mix of ESP and Psychokinesis abilities. As she can learn any of the Imbuement Skills listed for ESP or Psychokinesis (but no others), she chooses to learn Padded Armor. Since this falls under both powers, she decides that her skill is governed by Psychokinesis, and buys it at IQ+3 for 4 points. To show this, her player puts a * by it and writes "* Includes +4 for Psychokinesis Talent" at the bottom of her character sheet. If Linda's ESP (only) is ever crippled, it doesn't affect her Padded Armor skill, but if something cripples her Psychokinesis (or all of her psi), Padded Armor becomes completely unusable as well.

Ironically, super-advanced tech is easier to introduce in a campaign than "near-future" gear, since it'd be almost impossible to reverse-engineer and duplicate.

POWER LISTS

Each psionic power governs a set of IQ/VH Imbuement Skills, as listed below. Skills with a * are Defensive Imbuements, from *Perfect Defense* (*Pyramid #3/4,* pp. 10-14). The GM can rearrange these lists as he sees fit, of course.

Astral Projection

Binding Shot, Dancing Shield*, Dancing Weapon, Ghostly Weapon, Lighten Armor*, Penetrating Strike, Spiritual Defense*, and Stealthy Attack.

Notes

Half of the skills (Ghostly Weapon, Penetrating Strike, Spiritual Defense, and Stealthy Attack) make use of the ability to phase things in and out of the astral plane, while the remainder represent ghostly assistance . . . and ectoplasm, in the case of Binding Shot.

Ergokinesis

Annihilating Weapon, Blinding Defense*, Burning Strike, Dazzling Display, Electric Weapon, Fireproof Armor*, Incendiary Weapon, Insulated Armor*, Shockwave, Stealthy Attack, and Subtle Defense*.

Notes

In a game that splits up Ergokinesis, Photokinesis governs Blinding Defense, Dazzling Display, Stealthy Attack, and

Subtle Defense (by either warping or energizing light) while Electrokinesis handles the rest, with its ability to charge weapons with energy or insulate against that energy. Cyberpsi doesn't really lend itself to any Imbuements, though a generous GM can have it share Electrokinesis' list.

ESP

Arching Shot, Blunting Armor*, Far Shot, Forceful Blow, Guided Weapon, Impenetrable Armor*, Padded Armor*, Reinforce Armor*, Supreme Control, and Traumatic Blow.

Notes

ESP lends itself to combat in informative ways. This allows tricks of impossibly perfect aim (Arching Shot, Far Shot, Guided Weapon) and knowing *just* when and where to attack. The Defensive Imbuements involve careful positioning to minimize the penetration of incoming physical attacks.

Probability Alteration

Arching Shot, Bank Shot, Blunting Armor*, Crushing Strike, Expand Armor*, Homing Weapon, Impenetrable Armor*, Padded Armor*, Reinforce Armor*, and Widen Shield*.

Notes

Most of these skills involve improbable attacks; e.g., Crushing Strike can make an arrow turn before striking a foe or let you shoot bullets at the ground to launch rocks at your opponents. Expand Armor and Widen Shield have no physical effect – attacks are simply "drawn" to the protected areas – while the remaining Defensive Imbuements work similarly to ESP, above, replacing "careful" with "lucky."

Psychic Healing

Continuing Attack, Crippling Blow, Drugged Weapon, Energizing Defense*, Healthful Armor*, Resilient Armor*, Restorative Armor*, Sovereign Armor*, Sudden Death, Toxic Strike, and Withering Strike.

Notes

Biological control over others can be a potent weapon in battle. The Defensive Imbuements represent a sort of "healthy aura" that has some benefit for armor.

Psychic Vampirism

Annihilating Weapon, Chilling Strike, Corrosive Strike, Energizing Defense*, Envenomed Weapon, Sudden Death, Toxic Strike, Traumatic Blow, Vampiric Weapon, Vengeful Defense*, and Withering Strike.

Bad guys are often considerate, using tech with displays that note their function in huge type: "ENTER PASSWORD" or "SELF-DESTRUCT IN 15 SECONDS." Maybe it's cheaper for them to do it that way!

Notes

A psychic vampire with an Addiction for the life-force of others can satisfy that need through the use of Vampiric Weapon. Throw in the Blood Healing perk (**Psionic Powers,** p. 51) and it's clear why so many vampires gravitate toward professions that allow killing.

> *The form is humanoid, but there are many internal differences. Their bodies appear to function in an unusual psychokinesis level.*
>
> *– Spock,* **Star Trek** *#1.4*

Psychokinesis

Blunting Armor*, Burning Strike, Chilling Strike, Crushing Strike, Cutting Strike, Dancing Shield*, Dancing Weapon, Expand Armor*, Far Shot, Forceful Blow, Guided Weapon, Impaling Strike, Impenetrable Armor*, Incendiary Weapon, Lighten Armor*, Padded Armor*, Piercing Strike, Project Blow, Reinforce Armor*, Rigid Armor*, Telescoping Weapon, Traumatic Blow, and Widen Shield*.

Notes

A teke wielding a weapon with TK Grab *is* considered to be holding it for the purpose of Imbuement Skills. You must still learn the normal specialty for the Imbuement Skill; even if you usually use TK Grab skill to swing your sword forcefully, you would buy Forceful Blow (Broadsword), not Forceful Blow (TK Grab). Note that this is merely a question of how you're "holding" the weapon – in no way are you using the Imbuement Skill on the TK Grab itself! See *What Can I Imbue, Again?* (p. 25) for more on this (and a note about TK Bullet).

Telepathy

Crippling Blow, Deafening Display, Drugged Weapon, Fatiguing Strike, Project Blow, Restorative Armor*, Stealthy Attack, Stupefying Blow, Subtle Defense*, Sudden Death, and Thunderous Defense*.

Notes

Most of the offensive skills represent channeling physical strikes into mental effects, with the sound-based skills specifically turning the normal noise into a telepathic "shout."

Teleportation

Conic Blast, Multi-Shot, Penetrating Strike, Project Blow, Shattershot, Shockwave, and Telescoping Weapon.

Notes

Several of these involve splitting projectiles by rapidly 'porting them to be "everywhere at once," or exploding them by 'porting them *into* matter.

Anti-Psi

As usual, Anti-Psi is a special case. First, it only governs two skills: Nullifying Armor (Psionic)* and Strike of Negation. Second, most anti-psis will lack other psionic powers, so their Imbue will have Anti-Psi (-0%) and Limited Skill Access, Two Skills (-60%) instead of Psionic and Power-Based.
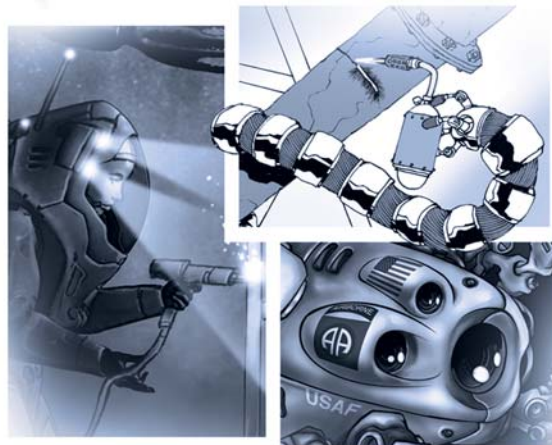
ABOUT THE AUTHOR

Reverend Pee Kitty, sometimes known as Jason Levine, is the co-author (with Scott Maykrantz) of the **GURPS Creatures of the Night** series and the author of **GURPS Dungeon Fantasy 5: Allies** and **GURPS Psionic Powers** (of course). Praise "Bob."

The Nectar Box

by J. Edward Tremlett

KissingthegoddessthewaveformcomesIrideit – (Contact Established) – tenmillionmilesfromtheunderstandingIgo – (Getting Something Faint, 10 Million Out) – theelectricfor-mofthespinningheadthingrisinglikeanewstar – (Ten Valkyrie Class Destroyers Cloaked In Warpspace Possibly Heading Our Direction) – crawlingthroughmudandbloodthehallsofsteeland-goldcallingcalling – (Something Else Behind Them Even More Faint) – ohgoddessIseeit – (Nothing There But Something Is There Watching I Think Is Someone Else in This Sector . . . ?) – IseeitIseeitIseeitI – (Oh Goddess Get Him Out of This Trace It Sees Us It Sees Us) – IIIIIIIIIIIIIIIIII – (USER OFFLINE)

In the far-flung future, humanity is hundreds of billions strong yet horribly divided. Their massive empires vie with one another for usable worlds, scarce resources, and the even more scarce discoveries that will allow one faction to rule over another – or at least keep the others at bay. One cross or intemperate word, or mistaken move of a fleet, could plunge entire star systems into a final and terrible conflict. Eternal brinksmanship is the best anyone can hope for, other than a miracle.

Into this mix comes a strange gift, sent by an unknown ally: the ability to plug oneself into the cosmic unconsciousness that permeates all levels of reality. Those "Ghosts" who use the Juice derived from the Nectar Box can place themselves into a "Ghost Trance" and send their minds and souls through the cosmos at superfast speeds for as long as the trance holds out. This allows for real-time cosmic awareness on a vast scale, giving the ability to guard their empire's holdings against even the most secretive of threats, and spy on enemies on the other side of the galaxy without leaving one's homeworld.

However, the Nectar Box's gifts are not without drawbacks. The Ghosts' eventually debilitating reaction to the Juice is the least of the controlling empire's worries. The secret of the Ghosts' true abilities must be kept, or else the program would lose its edge, and possibly suffering military reprisal. Meanwhile, those who lost their jobs because of the Juice are demanding investigations and political action.

Then there's what the government *doesn't* know about. Like who gave them the Nectar Box, and why. Or that poorly diluted Juice is being sold on the black market and getting into the wrong hands. Or that there's something observing their Ghosts, every time they trance across the galaxy.

Or that an altered underclass of humanity is developing strange abilities, and hearing the call of something *beyond* – something whose servants are already here . . .

The Nectar Box is a highly powerful (and dangerous) piece of exotic technology that can be plugged right into any far-flung space-opera setting where centuries-old cold wars demand political paranoia and high degrees of surveillance. The known background of this strange object is given here, along with generic notes of what its use entails, how it's been exploited thus far, and what problems are coming about as a result. Ideas for characters, and their initial plot directions, are included at the end.

Beware Ships Bearing Gifts

The *Menelaus* was a standard, 2,000-person colony ship dating back from the time of the First Great Expansion, when slower-than-light engines ferried crews in suspended animation into the unknown reaches beyond the solar system. Many of the colony ships were successful, but well more than half were lost, assumed destroyed by navigational hazards, mechanical breakdowns, and heretofore-unforeseen complications of long-term spaceflight. Many of the lost were never accounted for: No black-buoys were recovered, no final transmissions received, no wreckage found floating in deep space – they just vanished into the cold, empty blackness between the stars like ghosts.

So it was with some amazement – and much concern – that the *Menelaus'* identification beacon was detected centuries after the First Great Expansion, coming in from the far West Galactic Arm. Telepresence was established with *Deep-Fifteen*, a former navigational beacon retrofitted to become a long-range "listening" post for some "Teeps" (p. 28).

The Teeps soon discovered that the *Menelaus* was a derelict. It was "dead" except for its beacon, with its hull broken in several spots – no doubt by asteroids – and only one life sign found on board. That was on the bridge, where a very strong signal guided the boarding party right to the captain's chair. Sitting on it was a mysterious, translucent black cube, 10 inches to a side, with odd, language-like markings on one side.

That the box was of alien manufacture was without question. But it bore no resemblance to artifacts made by any other civilization they'd encountered. That plus the apparent return of the ship, and the placement of the box, suggested that this was someone's way of saying "hello."

That wasn't the scary thing, though. The true source of concern came from what was the only thing missing from the ship: Every single sleeper pod had been neatly removed. The 2,000 men, women, and children of the *Menelaus* were missing without a trace. This fact made the commander of *Deep-Fifteen* wonder if the box wasn't both "hello" and "thank you."

The government sent a team of xenoarchaeologists out to *Deep-Fifteen* to collect the box, and a group of engineers gathered all information they could on the *Menelaus*. The engineers couldn't track exactly where the ship had been in all that time, given that its equipment was junked a long time ago. But they determined that the last time the computers had all been working, it had been very close to the western edge of the galaxy, and the sleepers still had not awoken. Otherwise, they had no idea what the *Menelaus* may have encountered at the end, and probably never would with the facts that could be gleaned from the vessel.

The xenoarchaeologists soon had to turn to xenobiologists for answers, as it became clear that the life signs inside the box were growing in intensity as soon as they brought it on board *Deep-Fifteen*. Within 48 hours, the box was glowing from within, and a day after that, it was slowly dripping a gooey, clear fluid that defied full chemical analysis and smelled like orange honey. It was quickly determined that the box "fed" off proximity to living beings, producing the fluid in proportion to how many people were nearby. Those who got a whiff of the fluid said they felt very odd – it was as though they were outside their own bodies for a second, looking at themselves from a strange angle.

At some point, a reckless lab tech decided to try and taste the fluid, just to see if it had anything in common with what it smelled like. He was wrong, and he paid the ultimate price. But his foolishness paved the way for more careful testing and then concrete results. The science of the Juice and the technique of Ghost Trancing were the result.

THIS UNCERTAIN SCIENCE

Those who use the Juice have officially been called Ghosts of Space, after a figure from Earth's mythology. Unsurprisingly, most of them prefer the term Ghosts or Ghostdancers. Sometimes Trancers. *Never* Juicers.

Ghosts are selected from the vast pools of young people entering the armed services. Program recruiters seek out those with high aptitudes for imagination, observation, and risk taking. Loyalty is a lower priority, as they find that addiction to the Juice creates its own obedience.

Possible candidates are clandestinely tested and then quietly recruited; they are told only that they're getting a chance to work on the ultimate spy program. If they balk at the main task after they see the operation, they are trained as support staff or secondary observation, with an agreement that they

Teeps

Those who employ telepresence – the ability to remotely sense and interact with a location – are called "Teeps." For the purposes of this article, it is assumed that the host government had previously employed banks of Teeps plugged into sensor arrays, trying to sense the presence of enemy ships' computers and fighting deadly and swift mental battles with opposing Teeps well before traditional countermeasures can be brought online. Entire battles were won or lost with telepresence without firing a single shot. However, the Nectar Box threatens to make the Teeps all but unnecessary.

can always reconsider. There is also the understanding that they won't be interacting with other branches of the military at all once they sign on: "Silent as a Ghost" is the saying among the organization.

Ghost Trancing requires the oral ingestion of a measure of Juice, which is highly diluted Nectar (one part per million). One teaspoonful of Juice is enough to send the average human under for a full hour; three is the maximum dosage the average human can handle without overdosing, enabling someone to experience its effects for three hours. During that time the breath of the person doing the Trancing is heavily laden with Juice. Anyone sharing his air experiences the effects of airborne, second-hand Juice and is subject to fleeting observational psychic phenomena. When controlled, this side effect is an essential part of the operation.

The operation requires two people: one to be fully under, and one to be observing. The one doing the Ghost Trancing is given between one and three hours' worth of Juice and reclined back on a special couch that minimizes all physical sensations. The observer sits next to the couch and uses a special helmet to share the Juice-laden breath of the one who's fully under. A video-recording apparatus is also nearby, and several support staff are on hand to monitor their observations and life signs, and provide medical assistance.

While Ghost Trancing, the mind and soul of the Trancer are *outside* of his body: His disembodied spirit moves at the speed of thought through the Cosmic Unconsciousness, seeing everything there is to see, and verbalizing what's seen through an endless stream of seeming gibberish – "Ghostspeak." The Ghost can home in on a specific world; find a specific person, place, or thing there; and then observe all that goes on around it until the dose wears out. He can also simply watch over a particular area of space for intrusions, or explore a specific area of uncharted space just to see what's there. He cannot affect what he sees, but he cannot be detected or affected except by another Ghost.

Breathing the second-hand nectar allows the observer to be half-in and half-out, so that he can interpret the other's train-of-thought reports from the field. In a good pairing, the observer is capable of simultaneous interpretation, sometimes decoding the report *before* his partner even says a word.

*As a campaign development/complication, periodically reward heroes with money that can only go toward a spaceship. See the **Spaceships** series for rules and vessel ideas.*

However, the observer has another, more important task: acting as an "anchor" for the Trancer. Without the observer, there's a chance the Ghost will forget himself out in the Cosmic Unconsciousness and thus not perform his mission.

There's also a chance he might not come back at all. Sometimes Trancers can't return before the dose wears off, and sometimes they decide they don't want to. The observer is supposed to warn the support staff if it looks like the Trancer is going to "Starchild" so they can subject the body to severe, sickening pain to shock him back – prematurely ending the Trance.

Every Ghost gets "Zapped" at some point, so it's seen as a sobering rite of passage instead of failure. The real failure is when an observer loses a Trancer, and this is cause for near-endless reports and possible disciplinary measures. Even so, the casualty rate is high. One in 200 Ghost Trancing sessions end with the Ghost not making it back in time for whatever reason.

Bodies of such lost Trancers are kept on life support for one week, just in case the consciousness returns. But only one in a 100 lost Ghosts are capable of returning within that period. Those who do are never quite the same.

The Politics of Ghost Trancing

The discovery of the Nectar Box was only a short while ago, but it has completely revolutionized several areas of space defense, counter-intelligence, and exploration. Not everyone agrees that this is a completely good thing, as old jobs have been lost and new problems have arisen. However, the positives of using this piece of alien technology far outweigh the negatives, and those negatives can be handled. For now.

The existence of the Nectar Box, and Ghost Trancing, is a highly classified secret. Only the leader of the empire and the war cabinet know about it, along with a very insular arm of space defense's intelligence, which has benefited highly from this new technology. Certain key research scientists have been drafted to work within that arm, most of whom are leading anthropologists, xenobiologists, and xenoarchaeologists. They are under continuous surveillance to ensure they don't tell anyone what they know.

Ghosts are constantly being sent into the hearts of rival empires and alien civilizations to report on their plans, troop movements, alliances, and intelligence-gathering operations. The empire has used this knowledge to plan ahead and concoct numerous counter-intelligence operations to take advantage of what their enemies "know." They're careful not to react too strongly or obviously – such as arresting spies they've uncovered – but may one day reveal more of their hand if war seems otherwise imminent.

The Nectar Box is kept in a secret facility within the largest city on the empire's homeworld. Surrounded by millions of people, it produces 10 gallons of Nectar a day. This Nectar is then diluted into Juice, and halved: Half is shipped all over the empire, to stations and outposts where Ghosts do their work, and half is stockpiled against the Nectar Box ever breaking or ceasing to function. It's feared that not all the Juice winds up where it belongs, though, and there is a worry that it's reaching the black market.

As Ghosts are incapable of affecting the physical world, Teeps are still needed to act as defensive and offensive weapons. However, they are only used when a situation goes "hot," which means that there is no longer a need for around-the-clock Teep watches. Ghosts perform this task instead, and the Teeps have no idea why so many of them have been reassigned or forced into early retirement.

Given the singular nature of their skills, the retired Teeps are not all finding equitable work. Some have acquired other, sometimes questionable patrons, but many are scraping out an existence with a much-reduced military pension, and they are not happy. Neither are those companies who provide the cyber-surgery and maintenance needed for Teeping, and they are directing their paid-for politicians to ask loud questions.

They aren't the only ones asking loud questions. Contrary to initial reports that Juice was safe for long-term consumption, it's obvious that Ghosts are going mad over time. Many of the oldest Ghosts are suffering from severe hallucinations and dissociative disorders. Some find a way to overdose so they can ride forever. Some die from psychosomatic damage while hallucinating that something's coming after them. Others go AWOL and vanish like their namesakes.

Those in charge of the program are trying to keep a lid on this right now, as they're afraid of being accused of reckless incompetence. They're directing their scientists to quietly learn whether it's the Juice itself or exposure to the Cosmic Unconsciousness that's causing this. With any luck, they can fix what's wrong without losing too many more operatives. Meanwhile, the most erratic members are being transferred to ultra-secure psychiatric facilities to await a cure, and even then, they're finding a way to just vanish.

That's not the only mystery among the Ghosts, though. Some of them believe those who died from "psychosomatic damage" weren't hallucinating, and there *is* something else out there, watching them from the wastes between stars. It's been described as everything from a cluster of eyes and mouths to a black star that doesn't appear on any charts – sometimes both at once. Some wonder if it's enemy Ghosts observing their movements, while others suppose it's something else, but still nothing to mess with. Some want to make contact.

Some already may have.

Then there are the police, who don't realize the Nectar Box exists; they are wondering what to make of "Zone" – a new and dangerous drug that's sweeping through the undercities of the homeworld. It gives its users the feeling that they're flying unseen outside their own bodies, but if taken too heavily, the "Phantoms" may not come back from the trip. No one's had any luck identifying the chemicals that make up Zone, and a box seized by police had military markings on it. That box has since vanished from the lockup under mysterious – read "black ops" – circumstances.

Campaign idea: Heroes are normal folks who each acquire a piece of tech tied only to him, each with a specific function (futuristic weapon, super-sci armor, etc.). Work as a team!

The Tangential Nectar Box

Although designed as a background element, there's nothing that requires the Nectar Box to be a disruptive force in a campaign. For example, maybe the Box was acquired and is being utilized by alien species, one known for mysterious lore or powerful psychics. Especially if that race is not bent on galactic domination, it could easily use the box as its source of all knowledge. In this case, the PCs might merely interact with the effects of the Box tangentially (for example, encountering the Zone drug and its effects on a world they visit, or stumbling across disgruntled unemployed Teeps).

Admittedly, the underlying threats posed by the Box are important to those in the empire that owns it. If nothing else, the collapse of an intelligence network one has grown reliant on is a significant issue. However, provided that the threatened empire isn't integral to the campaign, it's entirely possible for the Nectar and its resultant mayhem to be part of a setting, without feeling that it will tear the galaxy apart if it isn't discovered and resolved.

That's not the only new addition to the undercities. Strange graffiti is cropping up there – weird symbols that bear no resemblance to any alien writing system the police have ever encountered. It seems to be some kind of territorial marking, because the normal dwellers of those awful pits – the most desperate of the poor – are running away in genuine fear. They won't speak of what drove them from their homes, even for money.

These new interlopers the police encounter in the undercities are a weird sort: malevolent-eyed types whose DNA match no one living, dressed in clothes dating back to the First Great Expansion (they police believe they must have found a storage cache down there). They don't talk much; no one wants to interrogate them for too long, anyway, because they all smell sickly sweet, like honey. That isn't an offense, however, and neither is one homeless group running off another. So the police aren't going to investigate too much, just yet.

Even so, two officers dared to go further in than ordered. They came back seemingly mad, jabbering uncontrollably about what they'd seen. They spoke of strange machines being built in the undercities, out of junk and cast-off computers, by men, women, and children who moved like ants in a hive. They claimed to see those people appear and disappear from view as easily as stepping into the shadows. They said they could tell they were being watched the entire time, *as if someone were invisibly following their every move.*

They had clearly been driven insane by the experience, and they were not listened to.

OUT OF THE BOX

While the Nectar Box has been written as a deep background object – and therefore something most PCs would never even *know* about, much less see – its effects have heavily impacted the empire that now owns it. This gives numerous opportunities for characters, stories, and campaigns based around its benefits and drawbacks.

Ghosts at Large: Adventures could revolve around Ghosts as they travel the spaces between the stars and wonder what's watching back. They might explore the outermost reaches of the galaxy, especially the strange, western area where the *Menelaus* ended up. Player-character Ghosts could be spying on rival empires and helping run games on them, slowly becoming aware that they have Ghosts of their own. They could be learning how to Ghost Trance *without* taking the Juice, and wondering if they should tell anyone. Finally, any Ghosts could realize they're beginning to disappear for real.

Of Teeps and Buggy Whips: Heroes could also be unemployed Teeps trying to survive in a glutted market (or have allies or associates who fit this description). They may want to discover what changed and who these "Ghosts" really are. Those who learn the truth may feel the urge to broadcast it or use this knowledge to their advantage. Teeps may even wish to try Juice to see how it interacts with their Teeping – a decision they might regret.

Following the Zone: The PCs might be sleazy opportunists taking advantage of Zone, either as sellers or guards for those who do. They may be involved in the trade of Juice and are helping to steal it, sell it to foreign powers, or make it into Zone to sell to pushers. If they become addicted, they might find out that there's a whole other world out there, with something strange and powerful living in it. Maybe their missing friends and clients are waiting for them, over there.

Shadows Over the Undercity: Heroes could be police or associates of them, dealing with Zone and the strange goings-on in the undercity. They could learn that the military is very interested in Zone and is shadowing their investigations. They also might come across that the weird writing has been cropping up lots of places, especially where people gather to do Zone. They could figure out that the DNA on the weird, new arrivals in the undercity matches the crew from a long-lost colony ship. They might even discover that the newcomers' numbers are increasing all the time. Ultimately they may penetrate far enough into the undercity to learn that those two officers *weren't* insane; if anything, they were understating the problem.

ABOUT THE AUTHOR

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

Random Thought Table

No Market for Used Plasma Grenades

by Steven Marsh, *Pyramid* Editor

In the original *Traveller* game, character advancement was more-or-less impossible. The amount of in-game time it took to improve skills meant giving up adventuring for long stretches, which defeats the point of adventuring in the first place. (Of course, *Traveller* is also the classic game known for killing off PCs during character creation, so it's always been about thinking outside the box . . .)

The optimists in the world might think this resulted in a setting where gamers could focus more on character development and roleplaying, escaping the rat race that is character improvement. Of course, we don't live in a magical Candy Land of marmalade skies and fuzzy bunny police, so it didn't always work out that way. The "rat race" often just migrated to a new arena: technology.

When other character-advancement options are closed, getting new stuff is always a possibility. In addition, in tech-heavy settings, it's possible to upgrade equipment and gear and still have a character-advancement system. This isn't necessarily a bad thing, although understanding the implications can go a long way toward making sure it's not a problem. Here, then, are some tips that you can use to keep gear from escalating a campaign faster than you'd like. They mostly apply to campaigns that use *High-Tech* and *Ultra-Tech* (or their respective eras), but some of the advice is universal.

Today's Bleeding Edge Is Tomorrow's Garbage

Those who like to stock their lives with gadgets are often amazed at how quickly they grow to be "obsolete." The original Xbox cost $299 when it was released, but its price dropped to $199 six months later. Nowadays – eight years after its release – a refurbished Xbox costs $50 or less. That's quite a price drop.

The majority of high-tech devices feature similar price deterioration in the modern world. There's almost no aftermarket for most used cell phones, either because new ones are so cheap or the demand for old ones drives the price down to near-zero. New cars practically lose half their value the moment they're driven off the lot. Most computers go from costing $1,000 to $100 in a half-decade.

> *Oi! Listen, in the year 5000, this was cutting edge!*
> – Doctor Who, ***Doctor Who***
> *(2005, #2.3)*

This is an important part to realize, because many adventurers believe (perhaps because they're supported by their controlling game system) that they'll be able to sell back old gear at a reasonable return – say, 50% of the original price. They do so in the hope and expectation of being able to buy new, better gear. However, if modern trends keep holding true, their old gear will be near-worthless when the time comes to try to sell it.

"But Random Thought Table!" you might be saying. "Don't those prices fall because the tech is getting better? If I allow my PCs to purchase new gear, don't I have an obligation to make that new gear better?"

Character creation idea: No advancement via character points. Each "character point" rewarded is instead converted to cash, which is spent only on gear. Power up!

Good question, Nameless Rhetorical Device! The answer is, "Not really." See, equipment keeps getting "better," but in most cases, the improvements are immediately gobbled up by improvements in other areas – usually in ways that have no effect on game mechanics. Hard drives are much bigger nowadays than they've ever been, but audio and video data keeps increasing its quality as well. Video games look better than they did a decade ago, and the underlying media can hold 100 times more data than systems a mere decade old, but that doesn't necessarily mean they're 100 times more fun. Cell phones keep getting smaller, but they're still plagued by many of the same problems that dogged them in the 1980s.

So, if a PC has to buy a new commlink because their five-year-old one got destroyed in a firefight, make a comment along the lines of, "Wow! The audio quality of this new commlink is incredible! You have no idea how you got by on the digital swill you were subjecting your ears to before."

PRICES INCREASE GEOMETRICALLY

Anyone who's ever tried to build a computer from components knows that prices do strange things to the laws of physics – or at least the laws of mathematics. If you're buying a new processor, you'll discover that the 1.85 GHz Intoolium processor costs $200, the 1.95 GHz model costs $300, and the 2.05 GHz costs $500. Oh, and if you hunt around, you might find an online retailer who's willing to sell you a 2.15 GHz for $1,000. What's going on?

At the extremes of technology, making stuff that works better/faster/harder takes that much more effort, and manufacturers and retailers adjust their costs accordingly.

This same curve can apply to any other tech. If a stun blaster normally does 2d+1 damage and costs $200, then one that does 2d+2 might cost $300, one that does 2d+3 damage costs $500, and one that does 3d damage might cost $1,000.

This idea, coupled with the previous one about (lack of) resale value, means that heroes will need to think long and hard about their gear. Do they go in the field without a stun blaster rather than spend the $200 they have on the low-end model, since they know that "upgrading" from that will require them to start almost from scratch, cost-wise?

GADGETS LIVE ON CONSUMABLES

As a final point to consider, many modern electronics make their money off "consumables" – things the buyer will need to keep buying. This can disguise the true cost of the item. As a real-world example, most people would balk at a $600 gizmo that performs its functions indefinitely, but be enticed by one that costs $200 up front plus $49.99 a month as a service fee . . . even though the latter ends up costing *$800* after a year!

Extrapolating, maybe the heroes' weapons are relatively affordable, but they require special power cells (such as paper cells – see pp. 12-15). Perhaps repairing their armor costs 10% of its original purchase price . . . each time it needs to be repaired! And so on.

This gadgetry trend also opens up the possibility for gear-minded mavericks who want to work for their supper. In the same way it's possible to refill an inkjet cartridge (with the risk that one might ruin the empty cartridge or become covered in ink), so too might ultra-techies attempt to jury-rig a cheaper solution. Of course, this can also lead to interesting roleplaying queries: Would you trust *your* life to a $5 patch job on your $500 armor, when the guy at the shop said it would take at least $50 to bring it to full strength?

THE BOTTOM LINE

The goal of these ideas is not to thwart and infuriate players or their characters, but to give "advancement by gear" a different flavor than other forms of character development. With a bit of thought and some extrapolation of modern-day ideas into the world of tomorrow, building up one's tech and toys may feel more engaging than erasing a dollar total and writing in the new piece of loot.

ABOUT THE EDITOR

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

A Consumer's Corollary

As a counterpoint to the notion that all electronics eventually become worthless, it should be noted that some gadgets or devices retain their value fairly well in the aftermarket. This might be because of collectability, underlying quality, or unusual attributes. As one example, many products made by Apple Computer retain a healthy percentage of their original value even years later. Similarly some consumer electronics – especially early runs of a product line – command slightly higher prices on resale because they are easy to hack or otherwise perform a tangentially related function.

If buying equipment that will retain its value on the aftermarket is a concern to the heroes, let them make appropriate rolls (such as research, weapons, or technology – perhaps even streetwise) to attempt to do so. Ironically, they may well pay a premium for such equipment in the first place – but it might be worth it in the long run! If Foobitz Alpha would sell for $1,000 new and in five years be worth $100, but Foobitz Beta costs $1,500 new and sells for $750 used, going with the latter results in a "loss" of $750 dollars instead of $900 at the end of five years.

Similarly, it can present an interesting conundrum to adventurers if they learn an old device they wanted to sell actually has a fair bit of aftermarket value: "Is this a '17 model vibroblade?! I'll pay you whatever you paid for it new! I can install Bladux on it." Do the heroes want to keep it and try to get a *better* deal, or try to figure out how to use the quirky gear's undocumented attributes themselves?

ODDS AND ENDS

Toys!

Today's tots play with gadgets and gizmos that are close to our own, but not quite the same. Here are some guidelines for constructing kiddy versions of tech.

Most toy versions of gadgets cost 1% to 10% of what the "real" version costs. The low end of this range is for items that aren't close at all to duplicating the functionality of the original, while the high end delivers a verisimilitude of the real device. For functionality, check to see what other devices are in that item's price range that are similar. Toy items are usually much more durable and "foolproof" than their younger counterparts. Toy versions of dangerous items are almost always painted or marked in a distinctive way to keep them from being misidentified as the "real thing."

Example: Many of the rifles from **GURPS High-Tech** are approximately $500; the Daisy Number 111 Red Rider costs $50 and can actually fire projectiles. The $5 version is a plastic or carved wood model that merely resembles a real rifle.

Example: A blaster pistol (**GURPS Ultra-Tech,** p. 123) costs $2,200. The $220 children's model rumbles and comes with targets that react to the "blasts" of the toy, while the $22 model is more like a $10 laser flashlight (p. 113) attached to a plastic representation.

Example: A TL9 personal computer is $1,000 (**GURPS Ultra-Tech,** p. 22). The high-end toy model costs $100. Although it resembles a personal computer, its horsepower is similar to a $100 small computer. The $10 model has about the same computing power as a calculator.

Toys don't have much direct use to adventurers, but there are two important functions they can serve. First, they can reduce the 200 hours required to eventually learn a skill associated with the item, especially when played with by children. Low-end models generally reduce the time by 10% (to 180 hours), while high-end models reduce the time by 20% (to 160 hours). To get this discount when the child grows up, the kid must play with the item for at least 200 hours (the time normally required to acquire a skill point as an adult). Kids who play with high-end blaster pistols are a reasonable way toward buying their Beam Weapons (Pistol) skill!

Second, they make great decoys or bluffs; even if you can't afford a $2,200 blaster, you might be able to fake it through a situation with a $22 repainted model!

MURPHY'S RULES

BY GREG HYLAND

IN *ABERRANT* (White Wolf Publishing), IT TAKES AN AVERAGE OF *FOUR SHOTS* TO ACTUALLY INCAPACITATE A NORMAL HUMAN WITH A *TASER*. AFTER TWO SHOTS, THE VICTIM COULD HAVE WALKED OR RUN AWAY... HE JUST COULDN'T *SPRINT*!
–S. Marsh–

Got a *Murphy's Rule* of your own? Send it to murphy@sjgames.com

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Sufficiently Advanced Popguns Are Indistinguishable from Ultra-Tech

As a corollary to the above idea – especially in a campaign setting that features precursors or long-dead civilizations – what if some discovered scrap of technology turns out to be a toy of those people?

Working in reverse, a toy version of a mainframe (**Ultra-Tech,** p. 22) would cost $10,000 – the same as a microframe! If the heroes stumble across some mysterious "control room" – which, despite all their tampering and prodding, utterly fails to destroy them or itself – they might ultimately discover that it was nothing more than a children's entertainment center. The power contained within would still be useful, but it might take considerable effort to unlock the "child guards" of the precursors. In addition, it goes without saying that unleashing a TL12 version of the Teletubbies or Barney could have consequences at least as disastrous as blowing up an ancient biological weapons plant . . .

MORE SURVIVAL AND CAMPING GEAR

BY STEPHEN DEDMAN

In the future, "roughing it" may well result in a lifestyle that would make modern folks jealous, while still providing in a disconnect from many aspects of an ultra-tech life. Always of interest to exploration-minded heroes as well as colonists, here are some items useful to those away from civilization.

SHELTERPACK (TL10)

Originally designed by a retired Survey Service scout, and popular with soldiers, refugees, and recreational backpackers, the shelterpack uses memory bioplas, buzz fabric, and solar paint to compress many wilderness survival tools into the lightest possible package. It can pack itself into a box the size of an attaché case for easy storage, or unfold to form the following items.

Pack: A standard frame backpack (**Ultra-Tech,** p. B288) or hard suitcase (**Ultra-Tech,** p. B288) with five square feet of solar paint exposed.

Tent: A one-man unpressurized tent. Survival modifier +2. In Earth-normal daylight, the solar paint provides enough power to run a vapor canteen (**Ultra-Tech,** p. 76), survival foodfac (**Ultra-Tech,** p. 70), and recharge power cells. Shelterpacks can be joined together to make larger tents for more people: If 16 or more shelterpack tents are hooked up together, they constitute a solar power array providing external power (**Ultra-Tech,** p. 20).

Waterproof Poncho: A hooded black cloak that protects against wind and rain and provides some protection against both heat and cold (-20° to 120° F if worn over ordinary clothing and suitable footwear). This is often worn over an expedition suit (**Ultra-Tech,** p. 178); its solar paint helps keep the power plant charged. It's also useable as a heavy cloak in combat (p. B287) and has DR 1 and +4 to Holdout.

Boat: The shelterpack can be changed to two possible configurations: a two-person enclosed kayak (**High-Tech,** p. 232), or a flat-bottomed open coracle.

Sled: It can be used as a toboggan, a pulka, or a stretcher.

Saddle and Saddlebags: The standard setting is for an equine or gheap (p. 35) or robot equivalent, but it can be reprogrammed for other mounts.

When completely empty, the shelterpack can reconfigure itself between forms in 1d+9 seconds. Anything left inside it will be ejected downward; this causes the reconfiguring process to take (1d+4) times as long, and can be awkward for the occupant. A shelterpack incorporates a printed tiny computer (**Ultra-Tech,** p. 22) and datapad, and can respond to verbal commands; smart owners secure these with a voiceprint or other ID, to prevent pranksters turning their boats into suitcases while midstream.

Standard military-issue shelterpacks are rugged (**Ultra-Tech,** p. 15) and available only in black: $1,500, 12 lbs, LC4. Halve the cost for a non-rugged (but possibly more colorful) civilian version.

Military shelterpacks may also incorporate infrared cloaking (+$1,500; **Ultra-Tech,** p. 99) and/or reversible chameleon cloak lining (+$1,000 to + $8,000; **Ultra-Tech,** p. 99) for use in tent or poncho mode. Optional extras for both military and civilian models include upgraded computers (**Ultra-Tech,** pp. 22-23) and communicators (**Ultra-Tech,** pp. 43-45).

At TL11, shelterpacks that reconfigure into bioplas pressure Tents (**Ultra-Tech,** p. 77) become available: $3775, 12 lbs, LC 4.

MORPH MATTOCK (TL10)

A heavier version of the morph axe (**Ultra-Tech,** p. 83), the morph mattock places a removable two-pound memory-metal head on the end of a conventional (nonmagnetic and nonconducting) telescoping handle that collapses to two feet. It serves as a shovel (**High-Tech,** p. 25), double-bitted axe (**High-Tech,** p. 25), pickaxe, pry bar, paddle, fishing rod, or just the proverbial six-foot pole – or, for the more aggressive, a long fishing spear (not balanced for throwing) or naginata.

GURPS Traveller: Far Trader offers guidelines for commerce in a futuristic setting.

In the future, "roughing it" may well result in a lifestyle that would make modern folks jealous.

Removed from the pole, the head can become a hammer, hatchet, long knife, spanner, or even a cooking pot. Treat as basic equipment for Carpentry or Survival and improvised equipment for a variety of other tasks. $1,100, 5 lbs, LC 3.

GHEAP (TL10)

Gheaps are genetically engineered hybrid animals designed for small farms and start-up low-tech offworld colonies. By incorporating genes from monotremes, yaks, camels, and other domestic animals, scientists produced a hornless mount that laid eggs, produced milk, and could pull a plough or cart. Gheaps are as omnivorous as goats, and can survive in deserts, arctic tundra, or mountainous regions. As a result, they are also used as pack animals or mounts by those explorers who prefer the company of animals to that of robots or people.

Adult female gheaps lay one half-pound egg every 1d+20 hours in normal to warm weather (60° to 100° F), and produce up to seven gallons of milk in a 24-hour day given adequate food and water. Gheap meat is also edible (though tough), and its naturally dry manure burns well. Finally, its white hair can be woven into a yarn (more often used for ropes or nets than clothing – it does not take dyeing well, and garments of gheap wool are widely considered a mark of poverty and low status). In moderate or warmer weather, gheap hair is short (DR 1) except for a mane and tail, like those of a horse; they become much shaggier (up to DR 2) in cooler climes. Though largely defenseless against predators, they are as intelligent as dogs and make good watch animals, bellowing loudly if threatened.

Gheaps acclimatize to their native world in their first two standard years, during which time they grow to riding size. They can remain productive for another 10, but unless they are trained to it, they do not adapt well to sudden changes (such as moving to a world with a different gravity or rotation period). Gheaps cannot swim or jump, and they avoid bodies of water unless they can see the bottom and all the sides; getting one to cross a river takes an experienced gheap wrangler.

Male gheaps are less useful than females (except as mounts: they have Enhanced Move 1, Ground Speed 12), and less than 4% of fertilized gheap eggs result in male offspring. A fertilized gheap egg costs $500.

ST: 24	**HP:** 24	**Speed:** 5
DX: 10	**Will:** 12	**Move:** 5
IQ: 4	**Per:** 12	**Weight:** 1,400 lbs.
HT: 12	**FP:** 12	**SM:** +1
Dodge: 8	**Parry:** N/A	**DR:** 1 or 2*

Weak Bite (10): 2d-4 crushing. Reach C.
Hooves (10): 2d+3 crushing. Reach C.

Traits: Cannot Float; Cannot Jump; Congenial; Domestic Animal; Filter Lungs; Fur; G-Intolerance 1; Mild Thalassapho-bia; Peripheral Vision; Quadruped; Radiation Tolerance PF

2; Reduced Consumption 2 (Cast-Iron Stomach); Reduced Consumption 3 (Water Only); Temperature Tolerance 3.
Skills: Mount-11; Survival (one environment)-12.

* DR depends on climate; see description.

ADVENTURE SEEDS

Here are some ideas for using this new gear.

Ferals

Spacefaring heroes are sent to deliver mail to Bakersworld, a colony world settled 15 years ago that has no FTL communi-cator. They arrive to find the riverside farms deserted, but an aerial survey spots large flocks of gheaps wandering the high-lands nearby.

As it's rare for gheaps to become feral, the adventurers may decide to investigate. If they do, they'll see small human foot-prints amid the gheap tracks. If children from the colony sur-vived by living among the gheaps, can they tell the investigators what happened to the adults? And is it only instinct that makes the gheaps avoid the river – or something else?

Sundowner

A boastful guardsman on Cromwell bets the PCs that none of them could endure the training exercise given to local com-mandos: a 30-mile trek across the badlands, equipped only with a shelterpack, heat suit (**Ultra-Tech,** p. 177), filtration canteen (**Ultra-Tech,** p. 74), survival watch (p. 6 or **Ultra-Tech,** p. 78), and one weapon apiece – all while evading detection by stun-ner-wielding troops in a vertol (**Ultra-Tech,** p. 229).

The badlands are mostly black basalt beneath the snowline, crossed by streams of snowmelt. The main problem for anyone foolish enough to take the bet isn't the subzero temperatures during the 43-hour nights: It's the avalanches that happen around midday. Those who escape being buried in their tents may find the shelterpack's "sled" setting more useful than they'd imagined . . .

ABOUT THE AUTHOR

Stephen Dedman is the author of **GURPS Dinosaurs** and the novels *Shadowrun: A Fistful of Data; The Art of Arrow Cutting; Shadows Bite*; and *Foreign Bodies*. He has also written a number of *Pyramid* articles and other RPG material, plus more than 100 short stories published in an eclectic variety of magazines and anthologies.

He is co-owner of Fantastic Planet, a science fiction and fantasy bookshop in Perth, Australia, and is trying to save enough experience points to buy off the long-standing Wealth (Struggling) disadvantage. For more information, check out **stephendedman.com.**

APPENDIX Z
REALITY BACKUP, INC.

Many sci-fi universes have a notion of replicators – devices that can duplicate other objects. In fact, in our world, we're close to having 3-D "printers" that can create objects on the fly! Most RPG settings ignore or gloss over this idea, since it adds a complication to gaming: If desirable objects can be fabricated out of thin air, what's the point in smuggling, buying things, trading, or other fun-filled activities?

But what if . . .

THE PREMISE

It's possible to fabricate items. However, the government expressly forbids it in almost all cases. (Its rationale is that doing so would put too many people out of work across the cosmos, and copyright/trademark/information law forbids it in almost all cases anyway.) Information tracking is regulated enough that it can't be gotten around.

However, there *is* an exception. A tiny number of licensed organizations are able to use replicators and item scanners, for one purpose: item backups.

THE PLACE

Reality Backup, Inc. can store the patterns of any object(s) its customers desire, and then create a duplicate should the original become utterly destroyed or unusable. The procedure is:

- *Drop item(s) off for scanning.* This typically takes 24 hours, but might be longer for larger, complex, or unusual items.
- *Pay the fee.* This amount depends on the GM's needs, but 10% of the item's cost is a good baseline for consideration. This fee usually needs to be paid every year, but this time period can be adjusted depending on the campaign. Regardless, it's important that these "backups" are services, not products.
- *Use the original, as normal.*
- *Replace it, if needed.* In the event the original becomes destroyed or completely unusable – and only in that situation – Reality Backup, Inc. can use its replicators to generate a duplicate of the original from the stored patterns.

There are, of course, a number of exceptions and exemptions to this service.

- As designed, illegal items are forbidden from being copied. Although it doesn't affect things from a game standpoint if it's permitted, it does raise a number of questions: "If you're willing to handle and copy this illegal thing, why won't you break the law and duplicate it for me?"
- Consumables or other items designed for limited use can't be duplicated. "I, uh, *lost* my bomb . . ." is a weak excuse that Reality Backup, Inc. will see through. (Borderline cases – such as armor that is ablative but not obviously so – might warrant bluff or charm attempts.)
- Proof of the item's destruction needs to be provided. Reality Backup, Inc., is quite strict about this. Merely saying that you lost an item won't convince them, but video proof that can be certified unaltered would. Usually, though, the best proof is bringing in the shattered or charred remains of the object. (The same computers they use to scan items can be used to determine if the remains are the same as the original.) Again, this should be "foolproof" and permit almost no opportunities for fraud.

CAMPAIGN USE

Depending on how it's presented, Reality Backup, Inc. can either be a quasi-realistic addition to a setting or a flagrant (and somewhat silly) way to allow items to be "saved" for later use – like a video game. The underlying idea – the ability to purchase backups of gear for a reasonable price, provided it's done ahead of time – permits a number of interesting strategic choices for players, especially in realistic settings where stuff gets damaged frequently.

The core idea can also be adapted to other notions. For example, the ability to purchase backups might be a perk for guild members or associates of powerful organizations. Regardless, it's important that the idea be almost entirely "incorruptible"; the campaign could deteriorate significantly if the heroes figure out how to start duping rare or expensive items.

As a final adventure idea, the core idea does require the heroes to be without their favorite gear for 24 hours . . .

How many programmers does it take to change a light bulb? None – it's a hardware problem!

ABOUT *GURPS*

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