

# PYRAMID

Issue 3/85 November '15

## CUTTING EDGE

**TRAINING FOR THE TECH**  
by Phil Masters

**FREE FALLING**  
by Timothy Ponce

**THE PERKY L33T**  
by Christopher R. Rice

**CUTTING-EDGE  
ARMOR DESIGN**  
by David L. Pulver

**REMIXING THE ROCKER**  
by Jon Black

**WHITE GOLD**  
by Matt Riggsby

# STEVE JACKSON GAMES

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# CONTENTS

FROM THE EDITOR . . . . .3  
TRAINING FOR THE TECH . . . . .4  
by Phil Masters  
REMIXING THE ROCKER . . . . .10  
by Jon Black  
EIDETIC MEMORY: CUTTING-EDGE  
ARMOR DESIGN . . . . .17  
by David L. Pulver  
FREE FALLING . . . . .25  
by Timothy Ponce  
RANDOM THOUGHT TABLE:  
FORWARD THINKING . . . . .32  
by Steven Marsh, *Pyramid* Editor  
SHORT BURSTS: WHITE GOLD . . . . .34  
by Matt Riggsby  
ODDS AND ENDS . . . . .35  
COVER ART PRINT . . . . .36  
APPENDIX Z: THE PERKY L33T. . . . .37  
by Christopher R. Rice  
ABOUT *GURPS* . . . . .38

# IN THIS ISSUE

The future is so close, you can almost taste it! This month's *Pyramid* looks at the near-now, with skills, tech, and situations for those on the bleeding edge of reality.

When weapons innovations continue to push the envelope, the best fighters are constantly *Training for the Tech*. Phil Masters – author of *Transhuman Space: Martial Arts 2100* – takes a look at futuristic gunplay, with styles and style components of particular interest to those in a TL9 campaign (including, of course, *Transhuman Space*). Become a missile whisperer, partner up with a support shotgunner, and more!

When the cyberpunk tomorrow comes, there will never be a better time for *Remixing the Rocker*. See how the world of music might evolve in a world of chrome, with *GURPS* info on technological tweaks to tunes, mind-controlling music, and even using aural elements to help with healing!

The future might be dangerous; fortunately, you can be prepared with *Cutting-Edge Armor Design*! This month's Eidetic Memory offering from *GURPS Ultra-Tech* co-author David L. Pulver pushes the boundaries of armor creation, with a plethora of options to devise your own futuristic protection. Have you ever wanted to make arachnoweave or ceramic nanocomposite armor? Now you can!

The blackness of space is a frontier all its own, and one challenge its inhabitants must contend with is *Free Falling*. With this *GURPS* guide to all things related to weightlessness, you'll learn zero-G fighting styles, how to move in a free-fall environment, what kind of health problems you'll have in space, and more.

This issue also contains an Appendix Z that adds some perks for cyberpunk hackers, a Random Thought Table that looks at the future through the lens of the past, and an Odds and Ends that highlights the stunning cover from Brandon Moore. It also includes a vignette by Matt Riggsby, long-time *GURPS* author, that takes you into the world of *Car Wars*, as its cutting-edge development continues apace.

Sometimes the future is not knowing what you wanted until you see it . . . then you don't know how you lived without it. Even if you didn't know before you wanted to play a laser-blasting, liquid-armor-wearing musician living in microgravity, you probably want to do so now . . . and this month's issue is here to help. The future has never looked better!

## ARTICLE COLORS

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

*Pale Blue:* In This Issue

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

*Green:* Columnist

*Dark Blue:* *GURPS* Features

*Purple:* Systemless Features

## COVER AND INTERIOR ART

Brandon Moore

*Even the tiniest of actions can change the future.*

– Casey Newton, in *Tomorrowland*

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# FROM THE EDITOR

## THE FUTURE IS NOW! No, WAIT; Now! Um . . . Now!

Lots of science-fiction stories take place in far-flung futures. But the future is closer than ever, and this issue of *Pyramid* is devoted to all the tomorrows that are just around the corner.

The great thing about the “near now” futuristic style is that it can be part of so many types of gaming. Certainly, campaigns set in the not-too-distant future can use more glimpses of tomorrow. However, even games that are set in “today’s” world benefit from these materials – especially those that skirt the edge of believability. When a campaign has monster-hunting champions or shadow-lurking assassins, what’s so unbelievable about hyper-new armor, or a quick

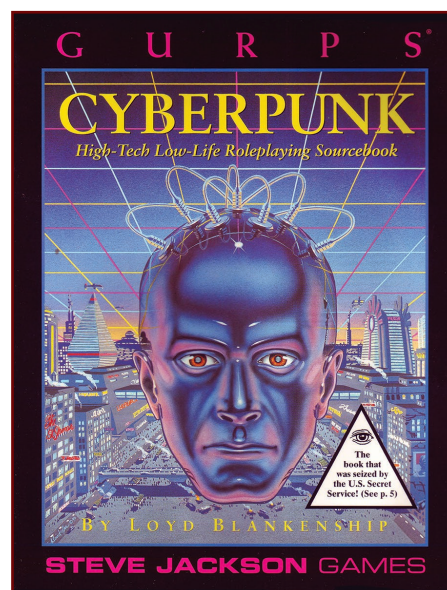
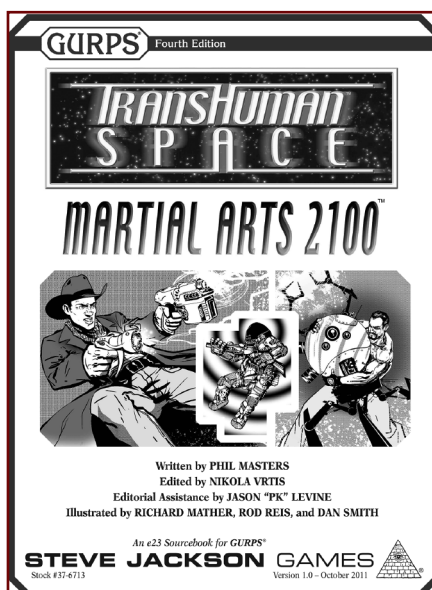
zero-G trip outside of Earth’s atmosphere? Even super-spies could find themselves on a space shuttle . . .

Plus, the future is always ahead until it’s here. Maybe the heroes are the *first* cyberpunk-style rock band in the world, or the world’s only operatives of laser-wielding battlesuits.

So if your game is in the future, there’s sure to be something here that’ll ring true for you. And if it’s set in the present . . . well, there’s no time like the future!

## WRITE HERE, RIGHT NOW!

How was your visit to the realms beyond today? Did you find something to write home about, or was something not quite what you were expecting? We love to get your comments! Let us know via ultra-tech speeding electrons that arrive personally to our inbox at [pyramid@sjgames.com](mailto:pyramid@sjgames.com), or join our online virtual realms at [forums.sjgames.com](http://forums.sjgames.com).



*Additional Material:* Sean Punch and Hans-Christian Vortisch

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## SKILLS

In addition to specialties of the skill covered in previous sources, Captivator stylists (below) may learn *Fast-Draw (Grenade)* as an optional skill. On a successful skill roll against this specialty, not only is a grenade pulled from a belt or pouch instantly, but the wielder can, if he wishes, press the manual arming switch on a smart grenade (*Ultra-Tech*, pp. 146-147) as part of the process.

## NEW TECHNIQUE

This new technique can prove useful with certain types of weapons.

### *Disk Bouncing*

Average

*Default:* Throwing-3.

*Prerequisite:* Throwing; cannot exceed Throwing-1.

Saucer grenades (*Ultra-Tech*, p. 147) can be bounced off walls and hard surfaces as they are thrown. You have practiced this trick; use this technique instead of Throwing-3 as the base skill for the throw, then apply range and other modifiers as usual.

## OTHER TECHNIQUES

As with perks, the styles detailed on below borrow techniques from the preexisting sources listed on p. 4. The GM

will need information on the cinematic techniques only if he's running a cinematic game.

### *Targeted Attack*

Like human beings, vehicles have hit locations; see pp. B554-5. Naturally, skilled shooters can learn to target such locations, using the rules in *Martial Arts*, p. 68. Vital areas (-3 to hit) are always a good target if the weapon used has enough penetration, while wheels (-4 to hit) or tracks (-2 to hit) are sometimes only lightly protected even on well-armored vehicles. A good hit there can leave a target vehicle gratifyingly immobile.

*Then a surge of living  
monsters carried me back up  
into the light – and training  
paid off; I landed on my feet,  
talking and fighting.*

– Robert A. Heinlein,  
*Starship Troopers*

# NEW STYLES

These three new styles would be suitable for use in most realistic near-future games. They also can be fitted into cinematic games by allowing the listed cinematic options (after the stylist has taken the Gunslinger advantage, of course).

## CAPTIVATOR

5 points

Advances in technology at TL9 and beyond make “less than lethal” weapons increasingly effective and reliable, leading to their adoption by many individuals and organizations who prefer not to kill their opponents if possible. This style represents advanced training with such devices. It is popular with police, bodyguards, and private investigators. In some settings, it may be learned by intelligence agents who are assigned to capture opponents for interrogation or just to work with the police.

It covers a range of weapons, allowing someone to use whatever's best for the task in hand: “stun beamers” such as electrolasers (*Ultra-Tech* pp. 119-120 or *Changing Times* p. 62), sonic weapons (*Ultra-Tech* pp. 124-126), or neural weapons (*Ultra-Tech* pp. 121-122) in games with appropriate superscience; large-caliber low-velocity guns that can launch tangler or biochemical aerosol shells (see *Ultra-Tech*, pp. 153-155); and grenades that can carry similar payloads in larger quantities. In addition, stylists learn to restrain

opponents “by hand,” although their initial training usually assumes that the opponent has been temporarily disabled with a weapon first. Many also learn to use vortex ring projectors (*Ultra-Tech*, p. 134) or handheld sprayers to deliver liquid, gas, or nanotech attacks, but this is usually regarded as a secondary option.

Quite a few learn to use old-fashioned police weapons such as batons, more advanced stun wands or zap gloves (*Ultra-Tech*, pp. 164-165), or small-caliber pistols loaded with gas rounds. Captivators often go into action with a different weapon in each hand, and are trained to switch quickly when the situation changes; shooting or throwing equally well with each hand is considered good, but can be hard to learn.

Given all these options, and the complex situations in which captivators often have to use their training, the style puts a premium on situational awareness and judgment. Its primary skills may be DX-based, but anyone with below-average IQ or serious psychological issues will be unlikely to pass the course.

Many captivators learn basic interrogation techniques, so that they can get extra information about a situation from one prisoner before moving on to the next objective. How brutal these get may depend on local rules of engagement, but it's hard to get either too subtle or too *effectively* ruthless in the middle of a firefight. Likewise, it's sometimes useful to be good at intimidating opponents into compliance.



### Option: Trauma Plate Carrier

Flexible armor (including scale armor) that covers the torso or chest locations may optionally be fitted with a carrier attachment for removable trauma plates – rigid armor designed to increase protection against higher-power ammunition or impaling weapons (“anti-stab plates”).

Build this as an extra layer of rigid armor with plate construction covering any torso location (sometimes with a directional DR option if only a front or back plate is included). Typical material used in trauma plates at TL8 are grades of steel, titanium alloy, and polymer composites; more advanced cutting-edge materials are quite possible.

Note that it is possible to build a non-ballistic carrier vest for the plates by simply using a cheap material like nylon and assigning something like DR 1 or DR 2.

### Number of Pieces

If it's not already clear, decide how many pieces the armor consists of. A suit of armor covering multiple locations can be a single piece provided they can logically be connected together. For example, both hands must be separate pieces (gloves) if they were on their own. However, two hands, two arms, and a torso (or chest) piece could be considered a single piece, since these locations can all be connected together. Use common sense, the descriptions of the locations, and the hit location diagram on p. B399 (although it doesn't list the expanded **Low-Tech** locations, they're fairly obvious).

*Example:* The chest can connect to each shoulder so despite covering three different areas this can be treated as a single piece of armor. That's important, as it means we can quickly put it on as a single unit, rather than having to attach each piece individually.

### Extra Detail: Armor, Surface Area, and Size

The listed **GURPS** weights for armor assume they are sized to a wearer of average build (115-175 lbs. – see the *Build Table*, p. B18). In reality, a wearer who is a significantly different size or shape will need to have armor of a different size (or appropriately sized inserts) with a different weight and cost. Finding such sizes may also prove difficult.

Each +1 or -1 to SM affects surface area by the factor shown in *Adjusting for SM* (see **GURPS Ultra-Tech**, p. 16). Apply that factor to surface area right away, or just multiply the final cost and weight by the factor.

Armor also can be scaled individually to particular body sizes and weights. This can be done by dividing character weight by 150 (average human weight) and then raising it to the two-third power (that is, find the cube root, then square it). Use this as a multiple to surface area, rather than adjusting for SM. The formula is:

$$\text{Surface Area Multiplier} = (\text{character's weight}/150)^{2/3}.$$

If someone's only option is to wear ill-fitting armor, consider assessing a penalty of -1 to DX (or -2 to DX if the armor

covers half or more of the surface area). In addition, if the armor is too small, consider reducing the penalty to target any chinks in armor by 1 or 2, as there will be gaps in protection.

*Example:* The armor being built here won't use these extra detail rules, but what if it were built for a slim teenager with a 110-lb. body weight? If so, the optional surface area multiplier would be  $(110/150)^{2/3} = 0.81$ , so the 5.95 square foot T-shirt is only 4.81 square feet.

### Typical Flexible Armor Outfits

*Bodysuit* covers the torso (including groin), arms, and legs: 17.5 square feet.

*Gloves* cover hands: 0.7 square feet.

*Jacket* covers the torso and arms: 10.5 square feet.

*Full Suit* covers all locations: 21.35 square feet.

*Trousers* are long pants, protecting the groin and legs (but not the feet): 7.35 square feet.

*Vest* is a shirt covering the chest: 5.25 square feet.

## STEP 3: ARMOR MATERIAL

Choose a material type for the armor. Stats are given in the *Armor Material Table* (p. 20).

### Flexible Materials

*Rubber* (TL6): Natural or synthetic rubber.

*Elastic Polymer* (TL7): Synthetic rubber-like elastomer materials such as neoprene or Spandex, and various blends. Commonly used in wetsuits, motorcycle riding suits, superhero costumes, or lightweight protective gear (e.g., paintball armor vests).

*Nomex* (TL7): Flame-resistant meta-aramid blends such as Nomex (often reinforced with nylon, neoprene, etc.).

*Nylon* (TL7): A silky synthetic thermoplastic material; statistics are for strong ballistic weave nylon as used in early body armor and other protective gear.

*Ballistic Polymer* (TL8): Flexible plastic fiber composites such as Spectra Shield and Dyneema manufactured from ultra-high molecular weight polyethylene. Costlier but tougher than Kevlar.

*Improved Ballistic Polymer* (TL8): The latest generation of ballistic polymers.

*Kevlar* (TL8): Woven para-aramid fiber fabric such as Kevlar and Twaron.

*Improved Kevlar* (TL8): Costlier late-TL8 para-aramid materials using more sophisticated ballistic weaves.

*Improved Nomex* (TL8): Meta-aramid fabric reinforced with Kevlar, such as Nomex III.

*Arachnoweave* (TL9): Spider silk produced using genetic engineering technology. (TL10+ versions, not covered here, are further improved via enhanced spiders . . .)

*Basic Nanoweave* (TL9): A late-TL9 flexible armor using polymer reinforced by carbon nanotubes (albeit not quite as strong as the TL10 nanoweave armor in **Ultra-Tech**).

*Laser-Ablative Polymer* (TL9): Ballistic polymer built to absorb laser fire.

## STREAMLINED ADAPTATION SYNDROME

The rules above cover each aspect of adapting to free fall. Individuals may experience different – or all – aspects of this process, but it requires a lot of rolls. At the GM's option, make a single HT roll upon entering microgravity to cover spinal decompression and space sickness, followed by another HT roll after six months that covers musculoskeletal and cardiovascular effects. Make any subsequent rolls individually.

## RECOVERY

While space adaptation syndrome is easily remedied with transdermal anti-nausea patches or even just time, recovering from cardiovascular and musculoskeletal atrophy takes years. At TL8 or less, recovering lost muscle and bone requires a successful HT roll after physical therapy lasting twice the time

spent in free fall. Success removes six months of ill effects; any failure results in no progress. The physical therapist's Physician skill serves as a complementary skill for this HT roll. At TL9+, ultra-tech medicines or nanobots may drastically reduce recovery time or even mitigate the health effects of microgravity completely.

*At this point I thought  
"We made it," by which  
I meant "We survived."*

– Ron Garan

# FREE-FALL ACTIVITIES

Moving, working, and fighting in zero gravity is challenging for the inexperienced, but most spacers have at least Free Fall-12 and are no less proficient at tasks than their ground-bound counterparts.

take a Ready maneuver to erase -1 worth of control-related DX penalties. If you lack purchase, a successful Free Fall roll removes -1 in DX penalties, but failure *increases* the penalty by your margin of failure! Lastly, you can roll against Astro-

## WEIGHT VS. MASS

As every high-school science teacher explains at some point, weight and mass are different. Mass refers to the property of matter that resists acceleration, and weight measures the effect of gravity on an object. *GURPS* often uses "weight" in place of "mass" because it is easier to conceptualize – after all, most games take place in the same Earth-normal gravity we experience daily. But in extraterrestrial environments, an object's weight varies.

The only time "weight" truly means weight is when determining how much someone can lift. Determine a load's local weight by multiplying its weight on Earth by the local gravity in Gs. All other rules – e.g., encumbrance, Ritual Path Magic weight modifiers, etc. – use "weight" as a stand-in for mass. In these instances, use the weight as measured in 1G regardless of local gravity.

batics (*Space*, p. 224), a special type of Acrobatics only useful in free fall, to regain control and negate all penalties with a single Ready maneuver or as a step on a critical success! Failure carries the same risk as Free Fall. All rolls to erase these DX penalties may take Body Sense as a complimentary skill.

## MOVING IN FREE FALL

Unless you have Flight with one of Newtonian Space Flight or Space Flight, your Space Move is 0; otherwise, it equals  $2 \times$  Basic Move. But just because you lack Space Move doesn't mean you can't propel yourself by other means!

Anyone can climb along any surfaces that provide hand- or footholds. This requires a successful roll against either Climbing or Lizard Climbing. The former lets you move one yard per second, and the latter grants move equal to  $1/2$  Basic Move. Both of these options require sufficient handholds or footholds to move around.

You can also throw yourself from handholds or jump off of stable surfaces, for a Move of ST/2, but always remember to modify for encumbrance – *especially* if pushing or dragging a load. Every level of Super Jump doubles your speed when pushing off with your legs, as does a successful Flying Leap roll; Super Throw (*GURPS Supers*, p. 30) has a similar effect when using your arms to move in free fall.

Chases, races, and long-distance movement in microgravity require rolls against HT-based Free Fall skill instead of Running. High-speed maneuvers and acrobatic movement rely on Astroatics (*Space*, p. 224).

## Control Rolls

These rules occasionally require control rolls – rolls or Quick Contests against Free Fall or its default – that determine the extent to which people command their own movement in microgravity. Failure results in loss of control over your movement – you suffer a DX penalty equal to your margin of failure, cannot alter your course, and continue at the same speed in the same direction you were moving until you either regain control or collide with something; see *Collisions* (pp. B430-431).

Every second you remain out of control, you may roll against the higher of DX or a grappling skill to grab a nearby *stable* object. If successful, you achieve purchase and can

## ABOUT *GURPS*

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

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

Rules and statistics in this book are specifically for the *GURPS Basic Set, Fourth Edition*. Page references that begin with B refer to that book, not this one.

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