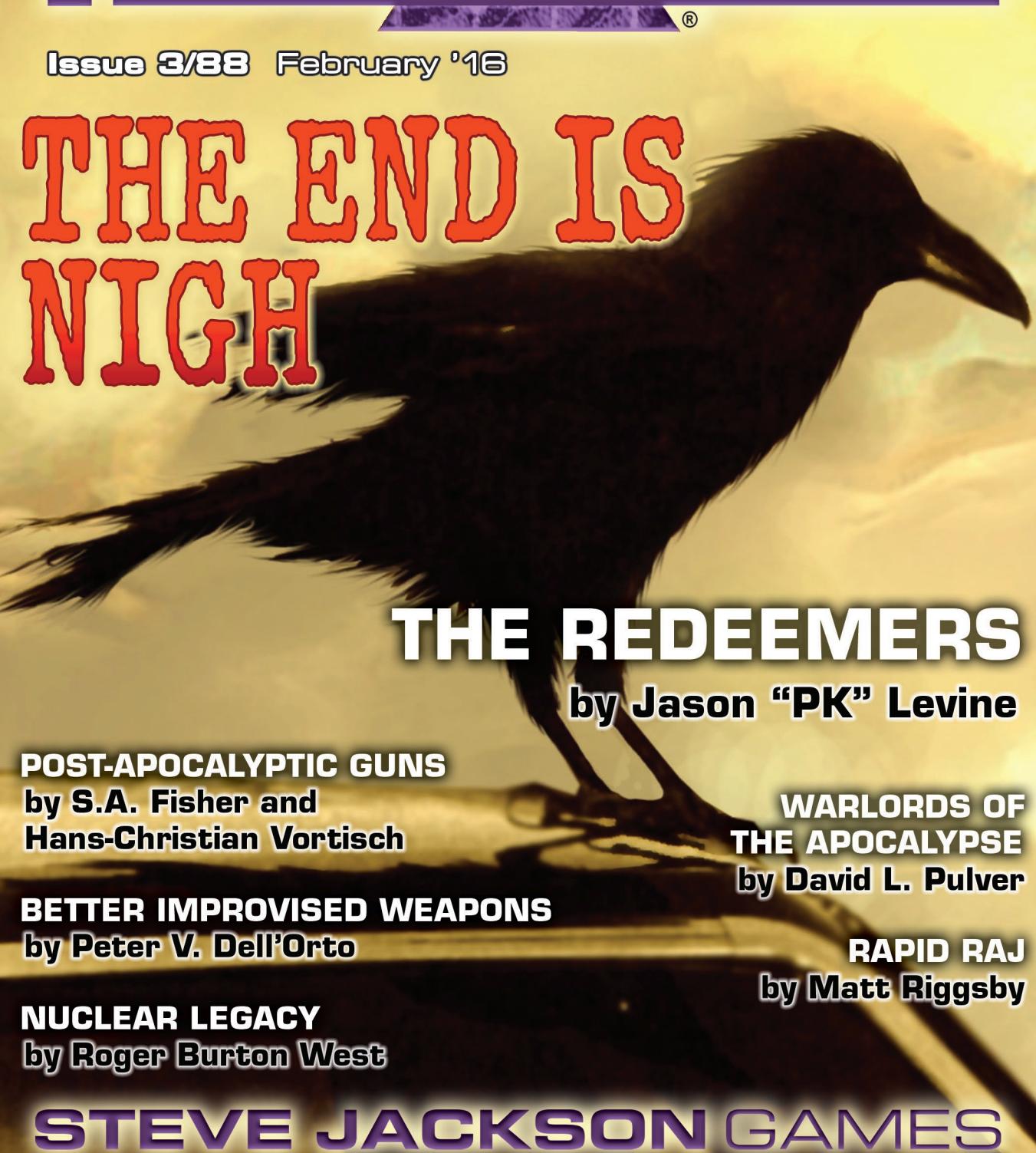


PYRAMID®

Issue 3/88 February '16

THE END IS NIGH



THE REDEEMERS
by Jason "PK" Levine

POST-APOCALYPTIC GUNS

by S.A. Fisher and
Hans-Christian Vortisch

BETTER IMPROVISED WEAPONS

by Peter V. Dell'Orto

NUCLEAR LEGACY

by Roger Burton West

**WARLORDS OF
THE APOCALYPSE**
by David L. Pulver

RAPID RAJ
by Matt Riggsby

STEVE JACKSON GAMES

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ARTICLE COLORS

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

Pale Blue: In This Issue

Brown: In Every Issue

Green: Columnist

Dark Blue: *GURPS* Features

Purple: Systemless Features

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IN THIS ISSUE

The future is what you make of it, especially if the world's been rebooted! We're unearthing a stockpile of information about the apocalypse and beyond. These post-apocalyptic goodies are ready to be dropped into any of your games, from *GURPS Action* to *GURPS Zombies* . . . or the upcoming *GURPS After the End* series (see p. 3).

Amid the wasteland, nearly all will fall short when judged by *The Redeemers*. Assistant *GURPS* Line Editor Jason "PK" Levine describes a powerful gang whose outlook on purity makes them wary allies or deadly enemies. This feature provides *GURPS* stats for the gang members, plus full details on their compound and surrounding area, complete with beautiful maps (courtesy of consummate cartographer Matt Riggsby).

If you're looking to defend yourself amid the wasteland, your life and death may be at the hands of *Post-Apocalyptic Guns*. Firearms experts Hans-Christian Vortisch and S.A. Fisher (co-authors of *GURPS High-Tech*) look at all matters of interest to the weapons of wasteland warriors, providing *GURPS* info on heirloom guns, kludging together ammo, and even building new weapons – including stats for the super-simple slam fire gun!

Not everything is one-on-one in a hell-torn world; sometimes you have to face the *Warlords of the Apocalypse*. This month's Eidetic Memory offering from *GURPS Mass Combat* author David L. Pulver show you how to use the *Mass Combat* rules in a post-apocalyptic setting, with new rules and options, plus two sample forces to face on the field of battle.

If your back's against the wall, don't go down without a fight – even the odds with *Better Improvised Weapons*. *GURPS Martial Arts* co-author Peter V. Dell'Orto gives you *GURPS* insight into using anything at hand to attack or defend, including revised perks and the Improvised Rule of Cool.

When the world ends, its uranium-powered devices may continue to run . . . but someday someone will need to deal with this *Nuclear Legacy*. *GURPS Reign of Steel: Will to Live* author Roger Burton West takes you on a systemless tour of what happens when the heroes encounter abandoned nuclear reactors, ancient bombs, radioactive disposal sites, and more.

This issue also contains another peek at the forthcoming *Car Wars* universe with a moment amid melee (as reported by ever-prolific Matt Riggsby), plus a Random Thought Table that looks at how to start tomorrow with a clean slate, an Odds and Ends that offers more encounters for your wasteland warriors, and – for the tacticians – a poster-sized map of the Redeemers' bunker with 1" hexes, suitable for oversized printing. The end may be nigh for the world, but – just like every month in *Pyramid* – the fun is just beginning!

FROM THE EDITOR

END TIMES MEAN GOOD TIMES!

You'll need more than this issue of *Pyramid* if you're going to venture into the post-apocalyptic wasteland . . . but it's a great start! Whether you encounter gangs (pp. 4-12 and 20-25), a forgotten trove of guns and ammunition (pp. 14-18), or the hidden dangers of an abandoned power plant (pp. 28-30), this issue of *Pyramid* is sure to be worth its weight in bottle caps.

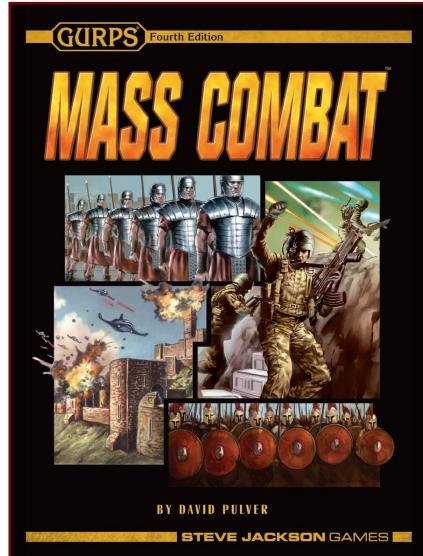
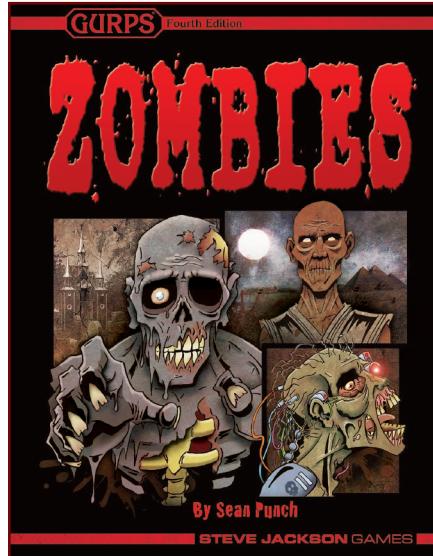
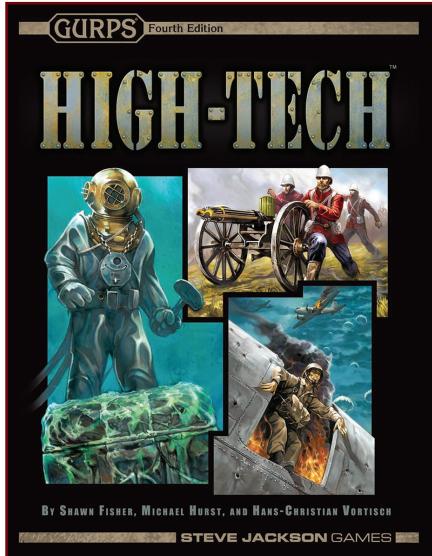
In a lot of ways, I think the post-apocalyptic ethos seeps its way into the pages of *Pyramid*. In the same way that wasteland warriors never know what they'll find when they unearth a bunker or loot a long-forgotten store, that same sense of discovery and promise comes with each issue of *Pyramid*. "This is so cool; what am I going to do with *this*?" are words that apply equally well to a pristine pre-fall workshop as they do to the articles herein. May *Pyramid* continue to surprise and delight for years to come. (And that workshop will be *great* for improvised weapons; see pp. 26-27.)

WHAT COMES NEXT?

Like all *Pyramid* issues (including the first post-apocalyptic one we did way back in 2009 with *Pyramid* #3/3), this issue is designed as a standalone issue. However, it's also laying the conceptual foundation for ***GURPS After the End*** – another in our quick-play series of supplements that follow in the footsteps of ***GURPS Dungeon Fantasy*** and ***GURPS Monster Hunters*** by paring ***GURPS*** down to those elements you need to get exploring fast. May this issue serve you well . . . and if it whets your appetite for more ***GURPS*** gaming goodness in a post-apocalyptic vein, we hope you'll stay tuned in coming months; the end may be nigh, but ***GURPS After the End*** will be just the beginning of the fun!

WRITE HERE, WRITE NOW

We love to know what you're thinking! How are you using this material in your campaign? What do you wish we'd write about? Let us know privately at pyramid@sjgames.com, or join the friendly fans online at forums.sjgames.com.



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THE REDEEMERS

BY JASON “PK” LEVINE

*“Son, there are a million things that’ll kill you in the wasteland, but your fellow humans are more dangerous than any monster or faceless hazard. Gangbangers are **everywhere**. Far too many people are trading in their humanity for a chance to hurt others. If there’s any scrap of good you can say about them, it’s that most are honest about what they are – they’re blood-thirsty sadists and they know it. But the most dangerous are the ones who think that their actions aren’t just justified, but morally **right** – as in, ordained in the eyes of God.”*

“I’m talking about the Redeemers, a bunch of true believers who think that the Lord’s work includes killing us sinners off and looting our corpses. With most gangs, you just have to look too dangerous, too not-worth-the-trouble to attack. But if you see some bald freaks dressed in black and white, you’d better pull a hood over those earrings and make damned sure none of your crew are holding hands or making eyes at each other, else they’ll kill you where you stand.”

As an ever-present menace in most post-apocalyptic games, gangs run the risk of becoming *dull*. Raiders and bandits need something to differentiate them, to make them stand out. The Redeemers exist to fit that bill.

The Redeemers are a large gang, numbering almost 100 people, based out of a former rest area turned fortified compound known as the Promised Land. Led by a charismatic preacher/warrior, they follow a unique religion that predates any living member. They’re violent enough to be a threat but stable enough to negotiate with – as long as they don’t believe that anyone in the group is . . . *impure*.

As a species we’re fundamentally insane. Put more than two of us in a room, we pick sides and start dreaming up reasons to kill one another.

*– Ollie Weeks, *The Mist**

THE REDEEMER CODE

The Code comprises bits and pieces of several old-world religions filtered heavily through the worldview of *Godfather Jakob the Redeemed*, the gang’s first leader. There is no holy

book, with everything being passed on via oral tradition. As such, the doctrine has shifted over time, with every subsequent leader putting a personal spin on things (even if unintentionally). Its current beliefs can be summarized as:

1. Purity Is All. The rest of the Code flows from the need for its believers to remain “pure” in the eyes of God. Certain actions lead to impurity, which must be cleansed (if possible) for the follower to reach *Nirvana*: an afterlife paradise where, ironically, impure behavior may be indulged in freely. If the impurity cannot be cleansed, the Redeemer must be put to death, after which he’ll suffer eternally in the icy realm of *Purgatory*.

2. Some Are Worthy. The Redeemers are happy to convert outsiders, as long as they’re already pure. New converts will be welcomed as probationary members, but kept under constant guard until they’ve proven themselves; the gang isn’t stupid! Those who join do so for life and will be hunted down if they attempt to leave the gang. Redeemers aren’t supposed to steal from or harm the worthy (that is, other Redeemers); doing so is grounds for a *spiritual* – a “stump trial” of sorts, in which the leader hears from both sides and then passes judgment.

3. Most Are Unworthy. All non-Redeemers are fair game; members may steal from them, kill them, and so on, regardless of their purity. In practice, the gang preys on anyone weaker than they, but when dealing with a group strong enough to defend themselves, the Redeemers will usually leave them be (unless its members are *flagrantly* “impure” or there’s otherwise a good reason to attack). In fact, many merchant caravans include the Promised Land on their route; as long as the visitors can maintain at least the illusion of purity, the Redeemers are actually decent trade partners.

4. Fornication Leads to Impurity. While they do not call it “marriage,” the Redeemers only mate consensually and they do it for life. Once two people have sex (which includes most sexual activities, not just coitus), they are both forbidden from being with others until one of the two dies. Death is also the only way to cleanse fornication; in a rare exception to the prohibition against murdering the worthy, one participant must kill the other. (This assumes that both were otherwise pure; fornication with the impure *cannot* be cleansed.) The Redeemers hate rapists and prostitutes with equal fervor. Homosexuality and contraception are nonissues, however; the monogamy is all that matters.

5. Altering Your Body Leads to Impurity. The body is a temple and must be kept pristine. This means no tattoos, piercings, or other body modifications. (The prohibition includes cybernetics and bio-mods, in settings where such things exist.)

The only way to cleanse the Redeemer is to remove the modification, usually via force. A side effect is a dislike of amputees and others whose bodies have been “modified” by accident; while the victims are not technically impure (and are allowed to use simple prosthetic replacements), many believers consider them marked by God’s displeasure.

6. Mutation Reveals Impurity. If mutants exist in the setting, the Redeemers hate them. As there is no way for this impurity to be cleansed, any Redeemer who develops mutations is killed on the spot, and mutated outsiders are attacked (if the odds favor the gang) or treated with contempt (if not).

7. Other Religions Come From Impurity. The Redeemers are proudly intolerant of other faiths. They’re willing to interact with members of other traditions, as long as those heathens don’t proselytize, but a theocratic caravan or community invites their wrath.

While all Redeemers claim slavish devotion to the Code, most members only identify strongly with a particular portion of it. For example, a given Redeemer may pay only lip service to the rules about fornication (even dallying on the sly) while passionately hating those who voluntarily modify their bodies. The GM playing up these variances will go a long way toward making the gang feel *real* and interesting, particularly if they’ll be a regular campaign feature.

THE GANG

The Redeemers dress to set themselves apart from the unworthy. All of their clothing and armor is a mix of black and white, in no particular combination; e.g., a given raider might wear black leather on his upper body, white gloves, white pants, and black shoes. As a side effect of keeping their bodies “sacred,” most shave their head (men and women alike); the rest maintain short, cropped hair.

The Redeemers supply themselves primarily through scavenging (in the city ruins a few days’ travel away), raiding travelers, and hunting, with over half of the gang away from the Promised Land at any given time. They keep what they need and trade the rest with merchants and a few wary settlements. They’re always in the market for bullets and ethanol; the latter fuels their vehicles *and* keeps the whole flock happy.

Redeemer Laity

There are about 80 “rank and file” Redeemers, though only 25-35 will be at the main camp at any given time. They either wear leather armor (DR 1*) or leather with thin plates from road signs and such (DR 2, but -1 to Move and Dodge from encumbrance). For weapons, most carry cheap .41 derringers (1d pi+, Acc 0, Range 80/650, RoF 1, Shots 2(3i), Bulk -1, Rcl 2, Malf. 17) and *either* a board with nails pounded through it (sw-2 imp, Reach 1, Parry -1U) or a length of weighted chain (sw+1 cr, Reach 1-4*, Parry -2U, can entangle at -4).

ST 11; DX 10; IQ 10; HT 10.

Damage 1d-1/1d+1; BL 24 lbs.; HP 11; Will 11; Per 11; FP 10.

Basic Speed 5.00; Basic Move 5; Dodge 8; Parry 9 (Brawling), 8 (Axe/Mace), or 6 (Kusari).
SM 0; 5'7" to 6'2"; 120 to 180 lbs.

Advantages/Disadvantages: Callous; Improvised Weapons (Axe/Mace or Kusari); Obsession (Recruit the worthy) (15); Stubbornness; Total Intolerance (Religious). • Either Code of Honor (Redeemer Code) or Fanaticism (Redeemer Code).

Skills: Brawling-12; Guns (Pistol)-12; Intimidation-12.

• Either Axe/Mace-12 or Kusari-11. • Other common but not ubiquitous skills include Armoury (Melee Weapons or Small Arms)-10, Bicycling-12, Driving (Automobile)-11, Mechanic (Automobile)-10, Merchant-10, Scrounging-12, and Survival (local terrain)-12.

GANG REACTIONS

Apply the following additional modifiers to any reaction rolls made by Redeemers or to any Influence Roll made against them. For group encounters, average the leader’s reaction modifier with the worst modifier in the party (round down, for the worse). The options for each bullet point are exclusive; if more than one would fit, use the worst. In all cases, Theology (Redeemer) may act as a complementary roll. A Good or better reaction will usually result in a recruitment pitch!

- +2 if *no* penalties below apply *and* the subject speaks well of or shows interest in the Redeemer faith.
- -1 for dressing provocatively, -2 if caught or admitting to having casual sex, or -4 for a known prostitute or rapist.
- +1 if all body hair is shaved off, -1 for especially long hair or beard, -1 for amputees (with or without prosthetics), -2 for a single piercing or small tattoo, -3 for multiple modifications, or -4 for cybernetics or bio-mods.
- If mutation exists, -1 to -2 for someone exhibiting “mutant-like” qualities (GM’s call). For a confirmed mutant, take the reaction penalty from Freakishness or Social Stigma, add -1, and *double it* – or use -4, if worse.
- -2 for displaying articles of other religions (e.g., a crucifix necklace) or -4 for ostentatious displays (like a train of covered wagons all painted with crosses) *or* for debating religion with the gang.

Brother or Sister

Each brother or sister oversees a group of up to a dozen members *or* has some specific duty at the Promised Land. There are currently 14: Brothers Alister, Dirk, Ewell, Orton, Ramon, Shipley, Trace, Vasili, and Wilton, and Sisters Corinne, Mirelle, Nina, Tavaras, and Tsi. Five remain at the camp while the others supervise distant activities.

Most wear armor improvised from leather and metal (DR 3, but -2 Move and -1 Dodge from encumbrance), though a few prefer thick leather (DR 2*) to stay nimble and fast. They use the same melee weapons as the laity above, but most carry cheap .36 revolvers (2d-1 pi, Acc 0, Range 120/1,300, RoF 1, Shots 6(3i), Bulk -2, Rcl 2, Malf. 17).

ST 13; DX 12; IQ 12; HT 12.

Damage 1d/2d-1; BL 34 lbs.; HP 13; Will 13; Per 12; FP 12.

Basic Speed 6.00; Basic Move 6; Dodge 10; Parry 11 (Brawling), 10 (Axe/Mace), or 9 (Kusari).

SM 0; 5'7" to 6'2"; 120 to 180 lbs.

Advantages/Disadvantages: Callous; Combat Reflexes; Fanaticism (Redeemer Code); Improvised Weapons (Axe/Mace or Kusari); Obsession (Recruit the worthy) (9); Stubbornness; Total Intolerance (Religious).

Skills: Brawling-14; Guns (Pistol)-14; Intimidation-14; Leadership-12; Merchant-12; Scrounging-13; Survival (local terrain)-12; Tactics-12; Theology (Redeemer)-12. • Either Axe/Mace-15 or Kusari-14.

ST 15; DX 15; IQ 14; HT 13.

Damage 1d+1/2d+1; BL 45 lbs.; HP 18; Will 16; Per 16; FP 13.

Basic Speed 7.00; Basic Move 7; Dodge 11; Parry 12 (Brawling or Broadsword).

SM 0; 5'9"; 140 lbs.

Advantages/Disadvantages: Ambidexterity; Callous; Charisma 2; Combat Reflexes; DR 1 (Tough Skin); Fanaticism (Redeemer Code); High Pain Threshold; Obsession (Recruit the worthy) (6); Reputation +4 (Redeemers); Stubbornness; Total Intolerance (Religious); Voice.

Skills: Body Language-16; Brawling-17; Broadsword-17; Diplomacy-14; Guns (SMG)-17; Intimidation-17; Leadership-17; Merchant-15; Public Speaking-20; Religious Ritual (Redeemer)-15; Scrounging-16; Survival (local terrain)-16; Tactics-14; Theology (Redeemer)-15.

Techniques: Dual-Weapon Attack (Broadsword/SMG)-17.

ADVENTURE SEEDS

MacGuffin: The PCs need some old-world information and learn that it was stored on a computer in the patrol station that became the Redeemer's bunker. If they want it, they'll need to fight, talk, or sneak their way into the Promised Land. Does an intact hard drive even exist? And will the Redeemers realize the value of what the adventurers are looking for and want it for themselves?

Schism: A Redeemer named Susan wants to quit the gang and sees the PCs as a way to run. She might pay them for passage, blackmail them if she can learn a worthwhile secret, or strap herself to the bottom of their wagon, car, etc. (if they have one). Unknown to the PCs, Susan believes that God wants her to found a new, better gang – and stole Jakob's holy symbol (see *Mother Tempest*, below) on the way out. Tempest sends cyclists out to rally all distant Redeemers, and now dozens of fanatics across the countryside are angrily looking for Susan . . . and those assisting her.

Witness: The Redeemers have kidnapped Blaine, a teen from a local settlement, leaving with a promise to his parents that he'd be returned. With no reason to trust the gang, they beg the PCs for help. Gathering intel will reveal that Blaine is being held in the bunker until tomorrow's spiritual, as the only witness of Brother Orton's alleged fornication. Tempest insists that Blaine is in no danger . . . unaware that Orton's friends are willing and able to eliminate the evidence.

Mother Tempest

The Redeemers are currently led by a charismatic, 31-year-old Latina who took control seven years ago when the former leader (Father David) died in battle. She maintains the gang's respect through fire-and-brimstone speeches and knowing just when to risk settling situations via personal combat. She keeps Godfather Jakob's holy symbol – a pocket-sized, silver, winged shield with worn lettering ("–OTO–," "HAR–Y–VID–," "–YCL–") – in her room for quiet reflection.

Fortune has seen Tempest shot in only her torso and legs, so she keeps those covered in thick leather while proudly displaying her unscarred face and arms. If she anticipates a fight, she instead wears a custom suit of chain mail and license plates (DR 4) and wields a cavalry saber (2d+2 cut or 1d+2 imp; Reach 1) and machine pistol (2d+2 pi, Acc 2, Range 160/1,900, RoF 20, Shots 25+1(3), Bulk -3, Rcl 3).

THE PROMISED LAND

This area (map on p. 9) once was a rest stop attached to a highway patrol station, just off the northbound interstate. An asphalt off-ramp led to a small parking lot surrounded by a U-shaped rest area, then further north to the patrol station's parking lot. Being quite a ways from the nearest city, the station had a little of everything the officers would need (holding cells, garages, etc.).

Now, the Redeemers have turned it into a walled compound centered around "the bunker" (the former patrol station). The asphalt exists only as a memory; most of it has been broken down by time, blackening the sand, while any large chunks that survived were used as building material by the gang. The rest area to the south of the compound has been almost thoroughly dismantled by the Redeemers for use in construction and fortification. A few ruins still stand – including what remains of the public restrooms (the southernmost of the three gray-roofed areas), where gang members on clandestine business often meet. Although this area exists outside of their walls, the Redeemers definitely consider it *theirs*; anyone squatting here (or worse, dismantling the remaining pillars and corrugated metal roofing) will provoke their ire.

The bunker is surrounded by a wall composed of metal sheeting (mostly the roofs formerly over the rest stop's walkways), car hulks, asphalt piles (easily climbable, but roll Climbing at -3 twice to avoid an "tarslide," with one failure trapping the climber and two also suffocating him), and the large concrete abutment wall to the south. Two openings to the southwest and southeast are kept under constant guard (+4 to the guards' Sense rolls to notice someone sneaking through).

Depth Gauge: Sir? Your Deaconship? Good day! Or night. Whatever the case may be . . .

*Deacon: What is it?
I'm a busy man.*

– Waterworld

A great deal of intelligence can be invested in ignorance when the need for illusion is deep.

– Saul Bellow

Inside the wall, the Redeemers who aren't privileged enough to live in the bunker have set up dozens of lean-tos (green) and tents (gray and brown); the gangbanger's place in the pecking order determines where he sleeps. At night, bonfires ensure that the darkness penalty remains between -1 and -5, depending on distance from the fires. In addition to the guards on the wall, sentries are always walking atop the bunker itself; they can easily climb up from the inside using ladders.

THE BUNKER

Though "the bunker" (map on p. 10) is just an affectionate nickname, it's remarkable how well this patrol building has held up; its structural integrity modifier is +2. While most Redeemers enter via the common room (#1), it has a second entrance (of sorts) in the bus (#9). It can also be infiltrated via its windows, which are all broken but boarded up (aberrative DR 1, HP 23), though there's no simple way to do so *stealthily* from the outside.

1. Common Room

Formerly the station garage, this is now the main entrance to the bunker, a place for the higher-ups to relax, and the de facto assembly room for spirituels and speeches. Even on a slow day, at least half a dozen people are here. Normally, the three large doorways are open but draped in plastic sheeting, canvas, etc., which can be tied back in good weather. However, the Redeemers keep three barricades (taken from the sides of the highway) standing on their ends, ready to drop into place with two Ready maneuvers each. Given a few minutes to prepare, they can back this up with an impressive pile of junk and furniture. At night, two large bonfires keep the darkness penalty between 0 and -2.

From here, the only way into the bunker proper is through the armory (#3); the windows on the west and south wall have been broken and boarded. A ladder to the north leads up onto the roof.

2. Living Space

A "private-ish" room for one Brother or Sister, though who gets which room can vary over time. When many of them are ranging afar, a favored gangbanger may be allowed to use one. Conversely, if an unusual number of Brothers and Sisters are at home, they may have to double-bunk.

3. Armory

A room full of lockers, where the Redeemers keep excess weaponry: rifles, shotguns, machetes, etc., in various states of

repair. The few fully intact lockers are used to hold the best arms, locked with a combination lock that any Brother, Sister, or Tempest can open.

At least one armed guard is *always* here. If the compound is under attack, there will usually be three: two in the southwest corner covering the doorway, and an unseen one to the north backing them up.

4. Pantry

While the showers here no longer work, the cold well-water continues to flow. The gang not only drinks it, they also use it for improvised refrigeration of foodstuffs by running pipes through scavenged insulated coolers.

5. Kitchen

A crude vent system to the roof allows the gang to turn fresh meat into jerky.

6. Storage

Miscellaneous supplies are kept here, including extra blankets (during warm weather) and anything scavenged that isn't valuable enough to be kept in the armory (#3), Tempest's room (#12), or a cell (#13).

7. Chapel

While the common room (#1) is for speeches and sermons involving the entire gang, this is where the leaders gather to discuss business, tactics, and matters of spirituality.

8. Infirmary

As this used to be the receptionist area, it has a low counter, protected by bars, allowing clear sight between here and the bus (#9). The Redeemers' medical supplies are simple but effective (no fancy electronics here).

9. The Bus

Many years ago, seeing that the wide gap here (once spanned by double doors, as the main entrance to the station) posed a security challenge, the Redeemers disassembled the front third of a *city bus* and reassembled it inside the small room. Now this entrance is the reinforced bus door, controlled by a hydraulic lever. Anyone on the inside can open the door with a single Ready maneuver, but it's almost impossible to force from the outside; any attempt to do so must overcome the *door itself* (DR 4, HP 23) rather than its attached hardware.

The door between this room and the project room (#14) is barred. It doesn't lock on its own, but if necessary, it can be easily secured with a chain and padlock.

10. Staging Room

The ladder here leads up onto the roof. A few spare weapons are usually kept here, despite the area offering less protection against theft than the armory (#3), so that rooftop sentries can get to them quickly. At least one person is usually here, to check on the sentries and toss them firearms or ammo as needed.

11. Workshop

This room is crammed with various tools, primarily for use with the Armoury skill, but also for Mechanic repairs on small items. (Vehicle repairs are made outside.)

12. Mother Tempest's Room

Formerly the evidence room, this is the only completely secure room in the compound; the reinforced door locks (-6 to pick) and there are no other obvious entrances. Tempest keeps her personal effects here, including a pile of sleeping furs – she distrusts actual beds, as you never know if someone's hiding beneath – and a claymore mine (*GURPS High-Tech*, p. 189). She doesn't know for sure if the latter works (GM's call), as she keeps its existence a secret; it's her last-ditch defense against being assaulted in her own room.

13. The Cells

These three holding cells are used to keep Redeemers waiting for a *spiritual* (trial), victims kidnapped by the gang for some reason, or high-value items that won't fit in an armory locker (#3). The cell bars are heavily reinforced, but the locking mechanisms no longer work. As such, they're secured with heavy chain (DR 6, HP 15) and combination padlocks (DR 2, HP 6, but on the outside so a prisoner can't reach them).

14. Project Room

This area isn't dedicated to any one thing in particular, but instead is a hodgepodge of overflow storage and parts for or produced by the workshop (#11). One of the gang's long-term projects is building their own ethanol still, and there's about one-third of a working setup here now.

*But don't blame me,
oh children, if those
promises don't keep
'Cause promises,
like lives, can be bought
so very cheap.*

– Oingo Boingo,
“Tender Lumlings”

ABOUT THE AUTHOR

Reverend PK Levine knows a thing or two about whipping the unwashed and dangerous masses into a warlike frenzy – but he's transitioned from rabble-rouser to Assistant *GURPS* Line Editor. And then one day, *one day*, he will unify the gaming community and we will rise up against . . . well, you'll see. In the meantime, he lives near Chattanooga with his equally intimidating wife. He'd like to thank Melissa VanEyll for many of the ideas that made it into this article, Matt Riggsby for the beautifully detailed cartography, and Steven Marsh for the player handout.



The fear has grown . . .

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MAP OF THE PROMISED LAND



MAP OF THE BUNKER (DETAILED)

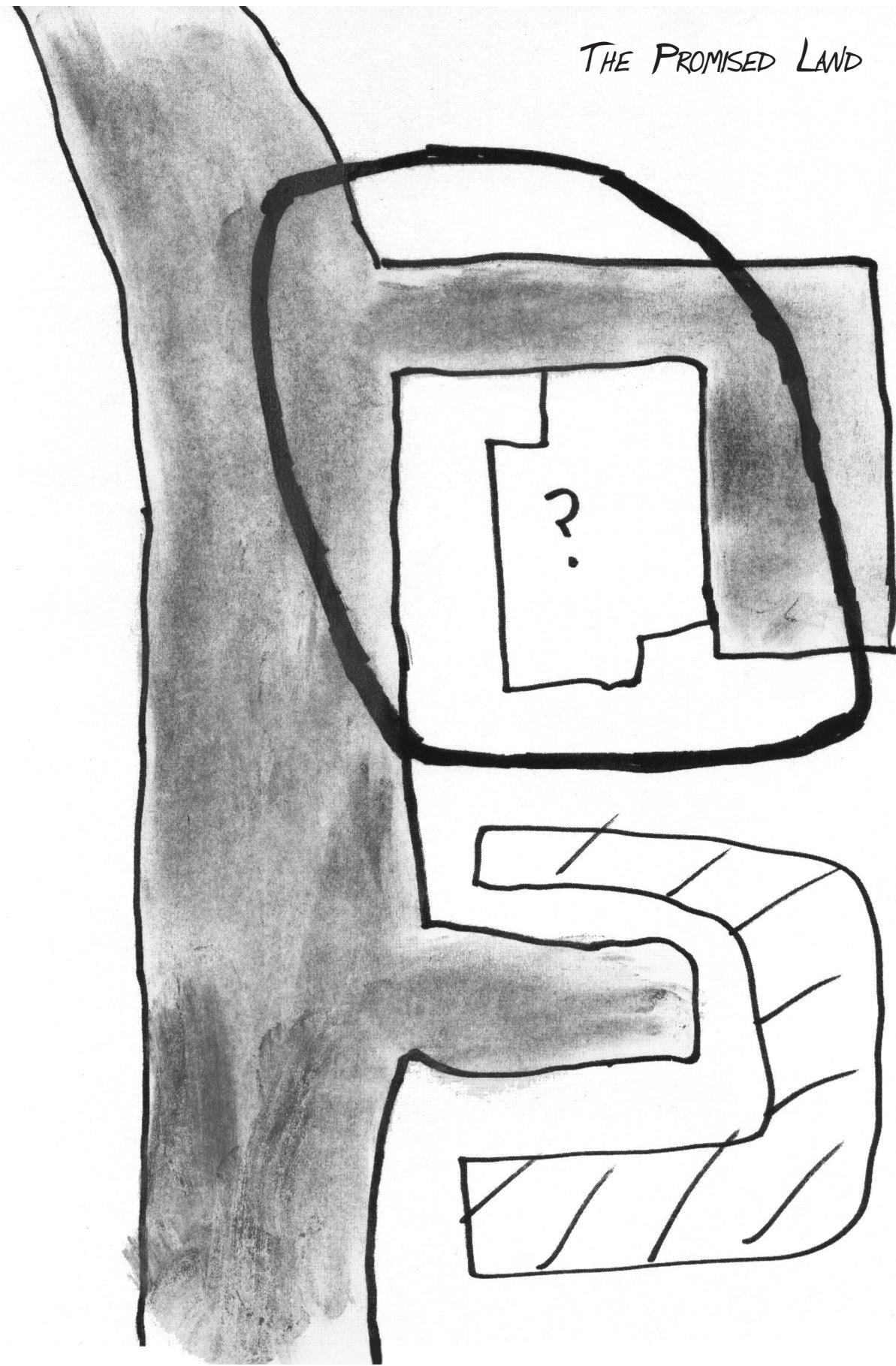
Scale: 1 hex = 1 yard.



MAP OF THE BUNKER (BLANK)

Scale: 1 hex = 1 yard.

THE PROMISED LAND

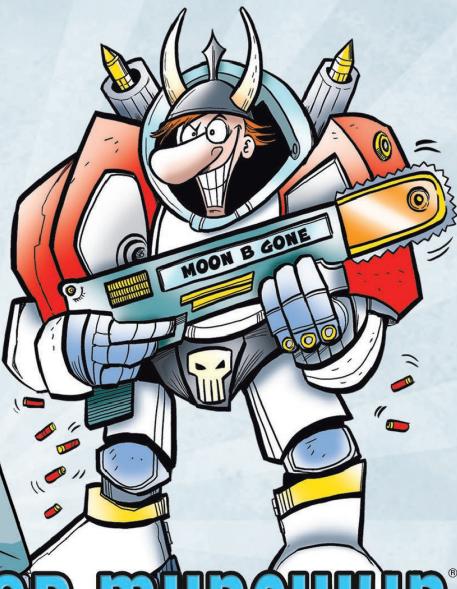


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POST-APOCALYPTIC GUNS

BY S.A. FISHER AND HANS-CHRISTIAN VORTISCH

Besides his pistol and half-shredded clothes, a pocket knife, and compass, his pouch held a miniature fishing kit that might prove useful, if he ever made it over the mountains to a decent watershed. And of course ten spare rounds for his .38, small, blessed relics of industrial civilization. Back at the beginning, during the riots and the great starvation, it had seemed that the one thing in inexhaustible supply was ammunition.

— David Brin, *The Postman*

Guns will continue to be important tools after the apocalypse, regardless of its nature. Depending on how far in the past it occurred, the guns which remain may be exactly the same as before, or they may face dwindling resources, such as missing parts and especially ammunition. They may even be weapons that were made after the end, using whatever technology is available.

Firearms could be a common sight, a dwindling resource, or newly made from whatever tech is available.

HEIRLOOMS

His battered Remington M-700 sporting rifle was at his side in its sheath of caribou skin. The gun, a family heirloom, showed the scars of a hundred years of constant use. It fired 7mm cartridges of which the community now had less than one hundred rounds left.

— James Axler, *Deathlands: Red Holocaust*

Firearms can be kept in shooting condition for many decades or even a couple of centuries with little effort. TL5-8 guns often have a service life in the tens or hundreds of thousands of shots, although the occasional firing pin, spring, or other small part will have to be replaced. Given even moderate care (*GURPS High-Tech*, p. 80), most guns will still be perfectly functional for generations after the end. For example, many guns captured by the U.S. government from Native Americans in the Indian Wars in the late 1800s were serviceable weapons made in the 18th and even the 17th century.

Similarly, the conflicts in Afghanistan in the 1980s and more recently have seen effective use of rifles made around the turn of the 20th century.

Unfortunately, proper maintenance may not always be possible. Whenever working guns are found, the GM should decide on their condition, or roll 2d randomly on the following table:

Result	Condition	Malf. Penalty
2-3	Perfect (well-maintained or even new)	-
4-6	Serviceable (maintained, but worn parts)	-1
7-10	Wretched (neglected)	-2
11-12	Junk (heavily worn and corroded, possibly missing parts)	-3

ARMS CACHES

Included with the bases are many supply caches scattered throughout the countryside. Each cache is well stocked with a variety of Morrow equipment and has a good supply of ammunition and spare parts.

— *The Morrow Project*

Nations, organizations, and individuals may have stored weapons (and other supplies) in preparation for the end. These stashes can involve anything from burying a few cases of ammunition in the backyard by a “survivalist” or “prepper” to building huge bunker systems with large stores of supplies like many nations did during the Cold War. Their original owners may have died or moved on without being able to access them, and afterward they were forgotten. Some of these caches may remain undisturbed after the end, becoming concealed time capsules that promise good-as-new, pre-apocalypse arms for the lucky wastelanders who find them.

Depending on who set up the cache, it can be anything from a haphazard collection of guns and ammo that have long been spoiled from exposure due to unprofessional storage or unforeseen natural causes like earthquakes, to a veritable Aladdin’s Cave with shelves of carefully packaged firearms complete with accessories, ammunition, and reloading equipment. Even the best storage may have not been enough to preserve them, depending on how long ago the apocalypse occurred.

Which firearms have been stored in such a cache depends entirely on the original owner. Considerations include funds, access to specific types (e.g., military weapons), perceived requirements, etc. See *The New West* (p. 17) for suggestions as to which types might be best suited for use in a post-apocalyptic environment.

However, what might be best suited is not necessarily what is available. Most caches are designed for use during or shortly after the end, not two or more generations later. It is quite possible that a cache will primarily stock weapons like semiautomatic pistols, submachine guns, and assault rifles that are optimized for armed conflict against other people in the immediate aftermath of an apocalypse, but ill-suited to long-term campaigning using reloaded cartridges in a hostile, possibly heavily changed environment with limited access to spare parts and maintenance materials. This will likely mean an arms cache is of less use to a wastelander than it might be expected. The GM can use this as a built-in half-life, giving the PCs access to powerful weapons that can be used for a short time (or even just once), but eventually they have to be abandoned due to resupply or deterioration issues.

Properly cached firearms will usually be disassembled, embalmed in corrosion-protective grease such as Cosmoline, and then sealed in airtight packaging. Unpacking, degreasing, and assembling a single gun takes at least one hour and either an IQ-based Guns or Armoury (Small Arms) roll. Cached ammunition will typically be stored in airtight containers that have to be opened and unpacked, taking at least five minutes.

RELOADING

He carried a shotgun upside down over his shoulder on a braided leather lanyard and he wore a nylon bandolier filled with shells for the gun . . . The shotgun shells in the loops of the bandolier were handloaded and the ends sealed with candlewax.

— Cormac McCarthy, *The Road*

Billions of self-contained cartridges are manufactured annually throughout the world, and although many are fired, there is always a large surplus. Combine this with the fact that cartridges can be stored for decades or even centuries with no or little ill-effect, and you'll get a high likelihood that factory-loaded ammunition will be theoretically available for a long time after the end. This does not necessarily suit a post-apocalyptic campaign, since one of the most important themes of these is the scarcity of supplies, especially of consumables like cartridges. The GM can easily rule so, since even the continued existence of pre-collapse ammunition does not mean that it is available in the area in which the PCs operate. Furthermore, the GM can be justified in worsening the Malf. of old ammunition to represent the resulting misfires (p. B407). Every couple of decades could result in -1 to Malf. This is a dramatic rule rather than a strictly realistic one, since modern shooters are often shooting surplus ammunition made half a century ago without problems, and currently produced cartridges are even more reliable and will store even longer.

If original factory-loaded ammunition is scarce, people will resort to reloading the spent cases (*High-Tech*, p. 174). While the cases can often be easily reused, the three other major components of a cartridge are more troublesome — these include the propellant, primer, and projectile.

Brass

Metal cartridge cases have a structural limit. Depending on the case construction, power of the load, and type of weapon it is used in, cases can be reloaded hundreds of times. However, the cases of many powerful cartridges can go through the reloading cycle only a dozen times or so before they become unusable. The cases need to be cleaned and resized before reloading, which requires special tools (*High-Tech*, p. 174).

All-brass shotshells (*GURPS High-Tech: Adventure Guns*, p. 21) can be reloaded just like rifle or pistol cartridges. However, most TL7-8 shotshells have a light plastic hull (*High-Tech*, p. 164) with a brass base. These can be reloaded only a few times.

Eventually, new cases need to be made, most likely from melted-down old cases, which requires more effort but can be done with shop tools, including a draw press. This requires a Machinist roll.

If melting and drawing new cases is not an option, cases with a split throat or similar problem can still be remade into a usable cartridge by using only the rear half. Cut the case short to make a brass base and then prepare a paper or cardboard upper portion. The shell can be primed normally, and the powder and bullet seated in the paper. These can be covered in lard to proof them against the environment. This is essentially how paper-hull shotshells are made at TL6. Used in a non-repeating gun or revolver, it should work despite -1 to Malf. In a repeating weapon of any kind, expect -3 Malf.

POST-APOCALYPTIC GUN MALFUNCTION TABLE

Reloading ammunition after the apocalypse faces a number of challenges, and the results will likely be more prone to misfires or catastrophic explosions. To reflect this, use the following table instead of the less punishing *Firearm Malfunction Table* (p. B407).

- 3-4 – Misfire.
- 5-7 – Mechanical problem.
- 8-11 – Stoppage.
- 12-16 – Misfire.
- 17-18 – Explosion.

Really desperate wastelanders may be reduced to creating cases from scratch. Reloaders do this today when reloading obsolete or hard-to-find ammunition. Handmade cases won't work in self-loading weapons, but they should work fine in non-repeating or manually repeating guns, such as single-shot derringers or double-barreled shotguns.

One method is to start with a suitable sized metal rod (brass, copper, aluminum, or even steel), then drill out a large cavity for the powder and projectile and a place for a primer on the other end. Drill or punch a tiny hole in the primer cup for the flash hole. It may be necessary to machine a groove for the cartridge to eject; this can be done by placing the cartridge in a drill and carving the groove with a file.

Prime it, load the cartridge with powder and a bullet, and it's finished. If it is a shotgun shell, place a circle of paper or cardboard over the shot and add a little wax or lard to seal it. A reasonable pace for making one such cartridge is likely at least 30 minutes, assuming a hand-held bit-and-brace. Reduce Malf. by -1 and double WPS (*High-Tech*, p. 175).

Going Black

He had become used to saving most of his brass for reuse, but neither primers nor modern smokeless powder would be easy to find, and they were impossible for him to duplicate. Possibly he could make black powder, if he had to. But to the best of his present knowledge, he would have to be willing to make a long and probably perilous trip through strange territory, south, to get sulfur.

—Gordon Dickson, *Wolf and Iron*

The main problem in reloading ammunition for modern firearms is the propellant. Guns designed at TL6-9 generally employ nitro-based smokeless propellant (*High-Tech*, p. 185). This is difficult to produce after the end. Black powder is much easier to make (*High-Tech*, p. 186). Black powder can be loaded in modern cartridges, but the result will generally be slightly weaker. Reduce Dmg by -1 per die and multiply Range by 0.9. Black powder residue will also quickly foul up a gun (*High-Tech*, p. 86). In TL6-9 breechloading guns that are not designed for it, it will worsen Malf. by -1 after 20 shots, by -2 after 40, and so on. See the film *Waterworld* for a drastic depiction of the fouling generated by black powder-reloaded cartridges fired from quadruple .50-caliber Browning M2 aircraft machine guns (*High-Tech*, p. 133).

Example: A TL6 Colt Government .45 semiautomatic pistol (*High-Tech*, p. 101) with Dmg 2d pi+, Range 150/1,600, and Malf. 17 (p. B407) would have Dmg 2d-2 pi+ and Range 135/1,440 using black-powder cartridges. After 20 shots, it has effective Malf. 16, and after 40 shots, it has effective Malf. 15.

Black powder works best in spacious, straight-cased cartridges such as used by most TL5 firearms: e.g., .22 Long Rifle, .38 Special, .45 Long Colt, .44-40 Winchester, .45-70 Springfield, and all shotshells. However, many TL6-8 cartridges like the 9×19mm Parabellum or 5.56×45mm NATO also can be filled with black powder. Some, like the .40 S&W, are less suited, since they lack the room required to pack in enough propellant to reach the operating pressures with the less energetic black powder. Obviously, advanced TL8-9 ammunition that is caseless or otherwise unsuited cannot be reloaded using black powder.

A major disadvantage of going back to black powder is its corrosiveness. Even TL8 firearms, if used with black powder, will deteriorate over time without careful maintenance (*High-Tech*, p. 80). An attentive shooter can thus extend the lifespan, but the longer after the apocalypse, the fewer functioning firearms will be available.

Firing black powder loads also has other disadvantages, especially in weapons with relatively high RoF; see *Black Powder Guns* (*GURPS Tactical Shooting*, p. 16).

Lead Poisoning

Jacketed projectiles are standard at TL6-9, since they offer many advantages, including improved reliability and

accuracy. They are difficult to make, however. Reloading after the end will most likely have to resort to unjacketed lead bullets, which can be cast with limited materials, tools, and skill (*High-Tech*, pp. 163, 174). A dead car battery will yield over 20 lbs. of lead, which can be melted in a small iron crucible or ceramic pot over any hot campfire. Molds can be made from wood or clay or directly in a bed of sand, if need be. Recall that properly cast and shaped bullets — such as the Minié ball (*High-Tech*, p. 109) and rifled shotgun slugs (*High-Tech*, p. 166) — are major innovations which will be useful in such a black powder renaissance.

Unjacketed lead can quickly foul TL6-9 weapons with rifled barrels. Known as leading, this is difficult to remove and can increase the pressure in the barrel up to the point of bursting it! Leading will cause -1 to Malf. and -1 to Acc after 100 shots or so. Proper cleaning — at least two hours with hot water and cleaning solvents — returns the firearm to the original condition. Wastelanders can prevent leading by using a smoothbore barrel — such as in a shotgun — or by wrapping the lead bullets tightly in thin paper. Lard or wax can ensure that the paper sticks to the lead. The wrapped bullet can then be seated in the cartridge case. This increases reloading time by 20% and requires additional raw material for the reloading process.

In those moments where you're not quite sure if the undead are really dead-dead, don't get all stingy with your bullets.

—Columbus, in *Zombieland*

Prime Time

The primers in TL6-8 centerfire cartridges are similar to the TL5 percussion caps in caplock actions (*High-Tech*, p. 164). Primers can be refilled just like the cases can be reloaded with propellant, but the process is slightly more complicated and hazardous. A typical homemade priming compound consists of unstable phosphorous, an oxidizer like potassium, and an abrasive like boron carbide or ground glass. It is basically the same mixture as found on the tips of strike-anywhere matches (*High-Tech*, p. 57) or in children's cap guns, which can be harvested for this purpose. These items might be even more scarce than actual cartridge primers, which can be hoarded in bulk and cached for decades, and so the priming will probably have to be made from raw materials using a Chemistry roll.

Rimfire cartridges (mainly TL5 designs), where the primer is in the rim of the case, are tricky to reprime. Provided all materials are available, use an Armoury (Small Arms)-2 roll to reload these. The tiny .22 Short and .22 Long Rifle rimfire cartridges can be reprimed, but this is a tedious job and really only worthwhile if pre-apocalypse ammunition cannot be acquired; given that these two calibers are the most widespread cartridges in the world, excellent for caching due to low cost and bulk, and of little use in combat, they will probably be available for a long time after the end.

Still, wastelanders will be able to make use of the low-powered cases and cast the lead bullets to fill them with ease.

THE NEW WEST

"I have my trusty cannon," he said, half drawing the ancient, ponderous Le Mat percussion pistol. "I assure you that I shall give a good accounting of myself, and I shall take some of the monsters with me."

– James Axler, *Deathlands: Neutron Solstice*

All this means that the most reliable and efficient firearms after the end are medium- to large-caliber TL5 guns with relatively low RoF. Many obsolete guns will see a renaissance, both originals and the millions of replicas that have been made at TL6-8. Single-action revolvers, lever-action carbines, large-bore single-shot rifles, double-barreled shotguns, and even mechanical machine guns will constitute much of the more reliable armament. See *Adventure Guns* for an exhaustive selection of TL5 firearms. As examples of this return to the guns of the Old West, watch films like *A Boy and His Dog* and *The Book of Eli*; the latter even features a Gatling Model 1874 (*Adventure Guns*, p. 37). A step up from direct replicas, a number of TL7-8 equivalents mimic the old technology but take advantage of more modern materials and manufacturing, including single-action revolvers and lever-action rifles that feature firing pin safeties, making them safe to carry fully loaded (*High-Tech*, p. 93).

Another option are TL6-8 bolt-action rifles, which are simpler and sturdier than lever-actions, yet offer more firepower than single-shot rifles. Most of these are chambered for bottlenecked smokeless cartridges, however, and will not be as efficient with black powder.

Note that even simple firearms can go awry. Revolvers, for example, can get out of sync due to excessive use, especially with powerful loads, meaning the cylinder no longer aligns properly with the barrel mouth, causing a malfunction with each shot. Correcting this requires an Armoury (Small Arms) or Machinist-5 roll.

An even simpler solution is to shun cartridges entirely and go back to muzzleloading. This requires fewer materials and tools, but also comes with all the drawbacks of the TL4-5 muzzleloaders, which primarily concern low RoF and, most

distressingly, low reliability. Most of the muzzleloaders listed in *GURPS Low-Tech, High-Tech*, and *Adventure Guns* can be maintained using fairly limited knowledge.

NEW GUNS

This was a Thrower, a muzzle-loading, smooth bore carbine, whose inch and a half bore fired six-inch long explosive rockets. The weapon was hideously expensive, the barrel being made of beryllium copper, and its small projectiles had to be hand-loaded . . .

– Sterling Lanier, *Hiero's Journey*

At some point, wastelanders will start to build new firearms. These will almost certainly be muzzleloaders or simple cartridge guns such as single- or multi-barrel rifles, shotguns, and pistols. Revolvers are probably the pinnacle of what can be achieved in mechanical complexity. These guns may be improvised weapons such as the zip-gun (*High-Tech*, p. 92), or they may be newly built clones of the few remaining gun models. Many of these home-grown guns will likely use the existing barrels, springs, and so forth from defunct guns. Rechambered, rebored and rerifled, old barrels could have a very long life.

Copying a known muzzleloading design requires Armoury (Small Arms) or Machinist-5. Good patterns to copy would be the Tower blunderbuss (*High-Tech*, p. 104) or Kentucky rifle (*High-Tech*, p. 107). Manufacture of a rifled musket is a long task (p. B346) that can easily take up to 100 hours, assuming a workshop and a supply of all required materials. Developing a new muzzleloader but employing known principles (such as action type) is a Simple invention (p. B473) using Engineer (Small Arms) or Armoury (Small Arms)-6, with -6 (Simple) and +5 (existing variant). Using the *Time Spent* rules (p. B346) gives a bonus on the design and manufacturing rolls.

Incredibly simple guns can be made with the most minimal in tools and supplies. One such weapon is the *slam fire gun* which can be fashioned out of nothing more than a couple of pipes. These weapons were in common use by guerrillas fighting the Japanese in WWII, and today are still made in the Philippines, built from iron plumbing pipe or the front forks of cast-off motorcycles and scooters. For construction rules, see the description for the zip-gun (*High-Tech*, p. 92).

Post-Apocalyptic Guns Table

See pp. B268-271 for an explanation of the statistics.

TL Weapon	Damage	Acc	Range	Weight	RoF	Shots	ST	Bulk	Rcl	Cost	LC	Notes
GUNS (RIFLE) (DX-4 or most other Guns at -2)												
5 Small Game Slam Fire Gun, .22 LR	1d+1 pi-	1	70/800	4/0.0077	1	1(10i)	7†	-5	2	\$10	3	[1]
GUNS (SHOTGUN) (DX-4 or most other Guns at -2)												
5 Hunting Slam Fire Gun, 12G 2.75"	1d pi	1	30/600	6/0.12	1x9	1(10i)	10†	-6	1/5	\$20	3	[1, 2]

Notes

[1] The weapon should use the *Post-Apocalyptic Gun Malfunction Table* (p. 15).

[2] The stats list buckshot, but the ideal load for hunting large predators might be buck-and-ball (*High-Tech*, p. 173).

One pipe of the slam fire gun should be the proper internal diameter to hold the desired caliber shell, and it should fit tightly inside another shorter pipe. The smaller diameter pipe serves as the barrel which contains a cartridge, while the larger diameter outer pipe is fitted with a pipe cap and fixed firing pin. The user grasps the smaller inner pipe, which should protrude from the outer pipe by a foot or so. When ready to fire, he slams the inner pipe backward, and the impact against the pin fires the cartridge. Fitted with a carved wooden stock and sights, such a weapon would never be mistaken for a proper gun, but could be used to good effect at close range, and is certainly better than nothing! Deluxe models might include a folding stock, and a foregrip mounted to the barrel.

You're gonna need every bullet.
– Sam, in *The Colony*

GOING PART WAY

Wastelanders don't need to build guns from scratch, however. It is very simple work to convert almost any cartridge gun to a muzzle loader. The most practical gun for this is a simple breechloader, such as single or double shotgun, or a bolt-action rifle, but even an assault rifle could become a make-shift muzzle loader in a pinch. In fact, revolvers loaded this way are very similar to the Civil War-era cap-and-ball revolvers! All the shooter needs to do is load the base of a cartridge with a primer into the gun. From the muzzle pour in the powder, place a patch, then a ball or shot, then patch it again. When ready, simply aim and fire. Such a loading process will require a ramrod for loading, and will change the stats significantly, typically resulting in RoF 1 and Shots 1(20i). Other stats like Damage, Acc, and Malf. will also suffer, as mentioned under *Going Black* (p. 16).

MIX AND MATCH

With one swift move, he jacked the round into firing position . . . He could hear it click loosely inside the gun as he lifted it. Slowly, he took the shell out again and laid the gun thoughtfully down on the counter. The proper-size ammunition, probably, would be in that room down the corridor, but his chances of getting there . . .

– Gordon Dickson, *Wolf and Iron*

Tracking specific ammunition involves bookkeeping and may slow down play, but it is realistic (*High-Tech*, p. 178) and can lead to rewarding game experiences. During the Vietnam War, underequipped Vietcong guerrillas would often carry an assortment of captured and found cartridges in case they chanced on a weapon that would take them (*GURPS SEALs in Vietnam*, p. 47). One of the joys of post-apocalyptic settings is scavenging. Searching for and finding the right cartridges for a specific firearm can involve considerable game time or provide the incentive to go on a quest. Using specific rather than generic ammunition can be used by the GM to (further) restrict supply. This in turn can dominate the game style, such as in settings where guns are available (and possibly

game-changers) but melee combat and low-tech missile weapons are much more common. Carefully guarding ammunition for those important moments when it's needed most can lead to tough choices in play; consider *The Road*, where the protagonists have just two shots left. A serious scarcity of ammunition is also a reoccurring topic in the film *Mad Max 2*.

One way to cope with this ammo shortage is to use a barrel insert for the weapon so that the user can shoot ammunition of a smaller caliber. Each such barrel insert is machined to tight tolerances to fit into the breach of the weapon and drilled out to make space for a specific cartridge. A 12-gauge fitted with the appropriate insert could then fire rifle or pistol cartridges. This works best on a single- or double-gun where the inserts could be long enough to serve as a sub-caliber barrel, allowing the weapon some modicum of accuracy. Assume Acc is halved for pistol or rifle rounds, to a maximum Acc of 3. On semiautomatic weapons, the insert would be quite short, reducing Acc to 1. Barrel inserts weigh from 0.5 lb. to 2 lbs. depending on length and caliber.

THE WELL-ARMED WASTELANDER

"Squirrel seven bullets, rabbit twenty bullets, willing to barter," read a hand-lettered sign . . . It was bullets that were now the currency of choice, especially .22 and shotgun shells. For his own hunting he had set the .22 rifle aside, going over to the .50-caliber Hawkins flintlock.

– William Forstchen, *One Second After*

A good survivalist setup would be a 12-gauge single-shot shotgun, chambered for 3" cartridges so that 12-gauge shells of the most common lengths can be used; shotgun cartridges are also easily reloaded. The wastlander might also have a few shells prepared with a primer only, as well as a powder horn, patches, and balls for muzzle-loading the shotgun for hunting purposes. He would then be able to use virtually any powder or bullets he could scavenge, once they were melted down and recast or taken apart and the powder added to his powder horn. Likewise, scavenged ammo could be used to reload his expended shotgun shells. He might also have a barrel insert for shooting small game, chambered for a common caliber like the .22 Long Rifle, and perhaps one or two others for making use of other popular ammunition types, such as .223 Remington or .30-30 Winchester. He'd also likely have a revolver that could be set up in the same way as the shotgun, using either full reloads or the muzzle-loading technique. If a working handgun could not be found, a zip-gun could be fashioned and carried as a backup weapon.

ABOUT THE AUTHORS

S.A. Fisher is the author of *GURPS WWII: Dogfaces* and co-author of *GURPS High-Tech, Fourth Edition* and *GURPS Gun Fu*. His doctorate in history included studies in collapsed societies and failed civilizations; his bunker is fully equipped.

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EIDETIC MEMORY

WARLORDS OF THE APOCALYPSE

BY DAVID L. PULVER

The end of civilization doesn't mean the end of war – the "final war" is anything but! Enclaves of civilization may form militias to battle marauding gangs for control of scarce resources, mutant hordes will grow in strength in the wastelands, and would-be warlords will recruit rag-tag armies to strive to conquer what's left of the world.

These guidelines discuss ways to utilize the *GURPS Mass Combat* rules in a post-apocalypse setting.

*No animals have survived,
and all the crops are long gone.
Someday all the trees in the world
will fall. The roads are peopled by
refugees towing carts, and gangs
carrying weapons, looking for fuel
and food.*

– *The Man, in The Road*

TECH LEVELS

Post-apocalyptic armies often include soldiers equipped with a mix of salvaged high-tech items, improvised weaponry, and newly manufactured low-tech gear. To represent this, individual elements within the same army typically possess different TLs.

In fact, that might even be true within any given element – but when this happens, the TL should reflect an average, e.g., a squad of troops with TL6 bolt-action hunting rifles led by a sergeant with a TL9 laser pistol taken from invading aliens might be TL7.

For purposes of determining the army's cost to raise and maintain, assume a typical post-apocalypse world has stabilized at TL4. Higher TL military elements exist, but will cost more to raise and maintain. Therefore, multiply all costs to

raise and maintain elements by the multiplier shown on the *Element Cost Table*.

Element Cost Table

TL	Cost	TL	Cost
0-4	×1	9*	×32
5	×2	10*	×64
6	×4	11*	×128
7	×8	12*	×256
8	×16		

* Only available if the apocalypse occurred some time in the future or involved an intrusion of ultra-tech (e.g., super-intelligent machines or invading aliens).

Raising and Maintaining Units

In many post-apocalypse settings, a massive amount of economic "deflation" may have occurred, and the GM will have set starting wealth at well below the usual limits to approximate this. After all, actual money no longer exists, and starting wealth is rock bottom. "Raising" and "maintaining" units in the sense of procuring or manufacturing equipment and anything like regular wages is going to be rare. Moreover, a lot of people will join up just to have some place to go.

To reflect this, the GM may wish to consider two options. The first is to assume almost all elements are mercenaries (no cost to raise, 1.5x cost to maintain) – that is, they're troops, adventurers, or wanderers with pre-existing gear.

The second option is to assume massive deflation, and drop all prices (*after* the TL adjustment) by a significant factor. For example, if it's a TL4 background (normal starting wealth \$2,000) but the GM has decided starting wealth is only, say, \$500, then assume a 4:1 deflation in all costs, and divide costs to raise and maintain by 4. This can be justified by both wage depression and use of barter, scavenging, etc. to equip forces.

Equipment and Troop Quality

Mass Combat forces are customized by choosing equipment and troop quality. Neither are likely to be up to the standards of armies before the apocalypse.

Deflation aside, most post-apocalyptic troops lack decent or uniform equipment. In fact, with the exception of a few elements representing individual warlords or adventurers, or their personal guards, the equipment quality of TL4 or less troops is Poor, Basic, or *sometimes* Good. Equipment quality for TL5+ troops is normally worse: Poor quality is most common, and it's rarely better than Basic. Weapons, armor, and vehicles are often improvised, in very poor repair, or a motley collection of gear without any standardization among the troops. If everything *does* work, there's still rarely enough ammo, fuel, or parts to keep it running. Exceptions may exist (e.g., well-equipped survivalist enclaves), but they'll be unusual.

Troop quality also suffers! In the years and generations after the fall of civilization, most people are too busy trying to find or steal enough food to survive the next winter to do regular military training, although survival activities (e.g., hunting, fighting off gangs or wild animals) mean a decent number of people know how to use weapons. Nevertheless, few forces have enough of a surplus to expend their limited supplies of ammo and fuel in any kind of large-scale combat training or exercises. Many recruits will also be weakened by disease, hunger, radiation, or injuries, due to lack of nutrition and medical care. As a result, most troops are Inferior or Average quality, especially if equipped with scavenged gear they don't understand how to properly use. Good troops are uncommon, and Elite troops very rare! The best troops may be a few elements of wandering adventurers or mercenaries who make combat their livelihood.

Optional Features

Gangs and savage hordes are often Impetuous. Robots and super-mutants may be Super-Soldiers. Local gangs or militia who know the land (or have adaptive mutations) may have the Terrain (Type) feature, giving them a significant "home ground" advantage. Mutations or NBC suits can grant Sealed.

Some warlords may have set up a feudal or militia system with Levy troops to call up for short periods. In the dog-eat-dog world of the wastelands, there may be a few Hero elements, but there are even more who are Disloyal, Mercenary, or Fanatic (religious cults, etc.)!

Common TL0-5 Elements

A well-organized post-apocalyptic enclave *might* be able to forge good armor and swords, breed warhorses, train troops to fight as pikemen or heavy cavalry, or build war galleys – but the majority of wasteland warlords haven't the skills, time, or resources to do this. As a result, most low-tech forces tend to use the following simpler elements.

Amphibious Warriors, Aquatic Warriors, Beasts, Flying Beasts, Giant Monster, Ogres: These fantastic elements are best suited for mutant humans or animals.

Balloon: A hot-air balloon is the most likely type of "air support" available.

Battle Mages: This can represent individuals with powerful mutant powers or psionic abilities rather than magic.

Boat or Large Boat: Simple rowboats, canoes, rafts, or sailboats are the most likely naval elements to be encountered in the wastelands.

Bowmen: Decent archers or crossbowmen will take a while to train, but may become more common as firearm ammunition becomes hard to find.

Cavalry Pistols: If there are handguns and horses or other mounts, this sort of unit may be more common than conventional cavalry.

Heavy or Light Chariots: These may be lashed together from a subcompact automotive or motorcycle chassis pulled by animals, mutant animals, or even enslaved humans! They can also include go-carts, trikes, and similar exotica.

Heavy or Light Artillery: These are usually catapults, crude black-powder cannons, or rocket launchers, often built with scavenged steel springs, metal pipes, and other components. Thus, they use TL8+ metal alloys to assemble TL2-3 weapon designs, and so usually end up being TL4 or TL5.

Light Infantry: This is probably the most common troop type encountered in a wasteland setting – a bunch of guys with spears, clubs, knives, bows, slings, or black-powder firearms (or often a mix of them) who fight in loose order.

Miners: Labor is usually available.

Mounts or Draft Team: Ordinary horses may be available in some regions.

Stone-Age Warriors: These are typical of degenerate wastelanders that have completely regressed to barbarism, or gangs of feral human or mutant children.

Chalmers smiled knowingly . . . "I'm going to send you with a small detachment. You're going to go to Newton Grove, but hold position far enough away that you won't be noticed."

– D.J. Molles, *The Remaining: Extinction*

Common TL6+ Elements

Sizable forces composed entirely of TL6+ elements are rare, and are usually the remnants or descendants of military forces or survivalist enclaves. However, it's common to have a few TL6+ elements within a larger low-tech force: squads or individuals who are lucky enough to have scavenged some high-tech weaponry and equipment.

Just about any TL6+ elements are *possible* – a warlord might base his entire power around a single surviving tank or helicopter and sufficient mechanics, ammo, fuel, and spare parts to keep it running, for example – but the following are most likely.

APC: This is a simple wheeled armored personnel carrier from police departments or national guard stocks; a reasonable facsimile can be improvised by bolting steel plates and gun mounts onto an off-road truck. Unlike more sophisticated armored vehicles, they can be kept running without specialized skills. Most electronics will have long since broken down, so even if TL8+ designs, they're usually best treated as TL7 vehicles.

Command Post: This is usually only found in the most organized paramilitaries or survivalist enclaves. It's rarely available for gangs, villagers, or the like.

Riflemen or Mounted Rifles: This element is the best way to represent groups armed with TL6+ rifles, submachine guns, shotguns, revolvers, or automatic pistols. Since a large quantity of TL7 and TL8 weapons and ammo would survive an apocalypse, these elements are the most likely combat element to be acquired at the TL7+ level.

Heavy Support Weapon (HSW): A well-equipped paramilitary may own a couple of machine guns, but finding enough ammo to use them can be challenging.

Combat Engineers: An element or so of combat engineers can represent a MacGyver-style gadgeteer or expert looter and his buddies; also use them for squads built around a warrior carrying an exotic weapon like a flamethrower or explosive booby-traps. Combat engineers could represent a bunch of smart urchins who are great at finding secret routes into and out of buildings and are equipped with their own array of gadgets.

But if the things attacked in large numbers, the wall simply would not matter.

— K.R. Griffiths, *Wildfire Chronicles: Mutation*

Light or Heavy Truck: There are often plenty of trucks around (unless an EMP fried all their ignitions); the problem is usually finding fuel and oil. Low-quality light trucks can represent ordinary cars or vans that are pressed into combat service. TL7 or TL8 vehicles are reasonably likely; however, TL6 can also represent higher-TL designs that have had numerous parts replaced by makeshift components.

Mortar Team: A very well equipped paramilitary *might* have one or two of these elements, either original issue or improvised. More powerful artillery is very rare!

Motor Recon: This element type can represent the common “military” type of vehicles used by nomad road warriors – a motley array of pickup trucks, SUVs, cars, and dune buggies, sometimes with bolted-on improvised weapons or exotica like tripod-mounted crossbows, flamethrowers, harpoon guns, or wheel blades. Motor Recon element can also represent three to five armed riders on motorcycles.

Combat Engineering Vehicle: Real military CEVs are very rare, but civilian bulldozers or other construction equipment that have been fitted with improvised armor plate and gun ports are far more likely to be encountered than real tanks!

Fast Attack Boat or Gunboat: Small- or medium-sized coastal vessels are the most powerful naval elements likely to be operational. Few warlords will have any.

Airship, Scout Aircraft, or Utility Aircraft: Powered aircraft are legendary artifacts in a post-apocalypse setting! If a warlord has such a flying machine, it's most likely to be a civilian general aviation aircraft, a blimp (usually converted to hot air), or possibly a light cargo aircraft or helicopter. More sophisticated craft would be almost impossible to fuel, arm, and maintain.

SAMPLE POST-APOCALYPTIC FORCES

Large armies are difficult to field in the post-apocalyptic wastelands; platoon or company sized units are more likely. Remember, each element represents about five to 15 men, a large creature, or a single vehicle and its crew. Just eight to 20 elements is a pretty large force.

Two examples are provided here: a gang of motorized raiders led by a ruthless warlord, and a tribe of cannibal mutants who worship a balloon-riding sky goddess. Assume both have logistic forces sufficient to support them: the civilians and camp followers who live under the gang's thumb, or non-combatant tribesmen.

Troop costs shown below are adjusted for TL inflation but not any (optional) deflation.

DDT

DDT supposedly stood for Dan Darwin's Troopers but everyone just called 'em DDT. They started out as paramilitary group run by “Captain” Dan Darwin, a survivalist who wanted to travel about the wastelands hiring out to protect communities from raiders.

After a few years of being heroes, most of his men got tired of this. Upon encountering the next bunch of farmers in need of salvation, one of them, Sergeant Lucas McCoy, argued for killing all the sissy men and taking their women, gas, and

homes for themselves. Darwin objected that it wasn't honorable. “Neither am I,” said Lucas, and shot him in the belly, while his own followers announced he was taking over the company. “Honor,” he declared “is dead! It died and was burned with the Old World! All that matters now is gas, girls – and guns!” Then he finished off Darwin, while his men did the same to their former commander's loyalists.

He didn't reckon for Darwin's daughter Dara, the team's scout, who had managed to get airborne in the hot-air balloon that DDT used for scouting . . . along with DDT's only working set of night vision goggles and a pair of hand grenades. As she rose into the night sky, the vengeful teenager dropped her grenades on DDT's ammo dump – the resulting blast eradicating DDT's only heavy weapons and hideously scarring McCoy's face.

Over the next two years, “Scar Face” McCoy's amoral but ruthless leadership transformed DDT from a paramilitary mercenary unit into a feared and hated motorized gang of raiders. The gang operates out of a fortified gas station on the edge of a wasteland, extorting “taxes” (fuel, cartridges, food, slaves) from weaker settlements in their neighborhood and raiding those who don't pay. McCoy also always has his ears open for any rumors of where Darwin's brat may have drifted off to. If he catches her, he's vowed to make her pay!

DDT FORCE ROSTER

<i>Elements</i>	<i>Total TS</i>	<i>Classes</i>	<i>Mobility</i>	<i>Features</i>
McCoy's Guards (Riflemen)	30	F, Rec	Foot	
Deathdozer (CEV)	25	Arm, Eng	Mech	Impetuous
Big Mac (Heavy Truck)	5	T3	Motor	
DDT Shooters (Bowmen)	2	F	Foot	
Booze Riders (Motor Recon)	5	Cv, F, Rec	Motor	Impetuous
Rolling Death Commandos (Medium Infantry)	4.5	-	Foot	Impetuous
Kiddy Cars (Light Chariots)	1	Cv, F	Mtd.	Impetuous
Mercury Cougar Eliminator (Light Truck)	7.5	Cv, T1	Motor	Disloyal, Mercenary
<i>Armor TS</i>	25			
<i>Cavalry TS</i>	13.5			
<i>Engineer TS</i>	25			
<i>Fire TS</i>	38			
<i>Recon TS</i>	35			
Force TS	80			

McCoy's Guards (TL6)

Riflemen

Lucas McCoy carries a .50 Desert Eagle. He leads a squad of a half-dozen bodyguards armed with a mix of bolt-action hunting rifles, revolvers, and shotguns, with limited ammunition. They wear camouflage BDUs and baseball caps or cowboy hats, and usually deploy in Big Mac.

TS: 30. WT: 1.

Classes: F, Recon. Mobility: Foot.

Quality: Poor equipment; Average troops.

Features: None.

Cost: \$160K to raise; \$36K to maintain.

This is a single element with a total TS of 30.

Deathdozer (TL6)

Combat Engineering Vehicle (CEV)

This is a bulldozer and back hoe combination covered with improvised corrugated iron and steel plates and iron spikes. It's overweight, and no one is very good at driving it as it uses up too much fuel for its operators to be allowed to practice much. The gang members who do get assigned to it tend to feel invincible and charge right at the enemy!

TS: 25. WT: 4.

Classes: Arm, Eng. Mobility: Mech.

Quality: Poor equipment; Inferior troops.

Features: Impetuous.

Cost: \$300K to raise; \$15K to maintain.

As McCoy likes to say, "there's only one deathdozer!" – single element with a total TS of 25.

Big Mac (TL7)

Heavy Truck

A big-rig truck modified to run on ethanol fuel. The truck is in poor repair and often breaks down, but when working, it's

used to transport the troops. The drivers have a revolver and shotgun, but aren't very good at handling it.

TS: 5. WT: 4.

Classes: T3. Mobility: Motor.

Quality: Poor equipment; Inferior troops.

Features: None.

Cost: \$60K to raise; \$3K to maintain.

This is a single element with a total TS of 5.

DDT Shooters (TL4)

Bowmen

DDT's heritage as a mercenary company means it has a bit more discipline than some gangs. It doesn't have enough vehicles, guns, and ammo to equip the entire gang, but it has a couple of squads armed with crossbows (with some knives, chains, axes, and clubs for backup) who've been trained to lay down missile fire in organized volleys.

TS: 2. WT: 1.

Classes: F. Mobility: Foot.

Quality: Basic equipment; Average troops.

Features: None.

Cost: \$40K to raise; \$8K to maintain.

There is one element of DDT shooters in the gang with a total TS of 2.

Booze Riders (TL6)

Motor Recon

These mohawked riders terrorize on dirt bikes and motorcycles, armed with a mix of pistols, sawed-off shotguns, chains, and throwing spears. The motorcycles are fueled by ethanol alcohol; half the time, the undisciplined riders drink the ethanol instead of using it as fuel.

TS: 2.5. WT: 1.

Classes: Cv, F, Rec. Mobility: Motor.

Quality: Poor equipment; Inferior troops.

Features: Impetuous.

Cost: \$25K to raise; \$2.5K to maintain.

There are two elements of booze riders with a total TS of 5.

Rolling Death Commandos (TL4)

Medium Infantry

A vainglorious name for the most battle-crazed but least well-equipped gang members – mostly youths and new recruits, these are close assault troops armed with meat cleavers, axes, and hammers. Motorcycle helmets, garbage-can lid shields, and leather jackets covered with chains protect them. They often ride skateboards or use rollerblades when the gang operates on highways. If they prove themselves, survivors are told they may end up graduating into the motor pool and getting a bike off of a dead booze rider.

TS: 2.25. *WT:* 1.

Classes: None. *Mobility:* Foot.

Quality: Poor equipment; Average troops.

Features: Impetuous.

Cost: \$22.5K to raise; \$4.5K to maintain.

There are two elements of Rolling Death Commandos in the gang with a total TS of 4.5.

Kiddy Cars (TL4)

Light Chariots

The child auxiliary, these each represent a trio of shopping carts with upgraded suspensions and larger wheels. The carts are pulled by chained mutant dogs and driven by feral child-soldiers armed with slingshots firing ball bearings or with Molotov cocktails. If one of the kids drops a cocktail, the kiddy car goes up in a huge fireball.

TS: 0.5. *WT:* 4.

Classes: Cv, F. *Mobility:* Mounted.

Quality: Poor equipment; Inferior troops.

Features: Impetuous.

Cost: \$25K to raise; \$5K to maintain.

There are two elements of kiddy cars with a total TS of 1.

Mercury Cougar Eliminator (TL7)

Light Truck

Mercury Cougar and her co-driver Bam Styx are mercenary road warriors who have temporarily joined up with DDT. They don't trust the gang and vice versa. They drive a tricked-out muscle car with off-road tires, and carry pistols and sawed-off shotguns.

TS: 7.5. *WT:* 1.

Classes: Cv, T1. *Mobility:* Motor.

Quality: Poor equipment; Average troops.

Features: Disloyal, Mercenary.

Cost: \$0 to raise; \$18.75 to maintain.

They are a single element with a total TS of 7.5.

*Meet spirit for
worship
Sky-born and earth
given.*

– John Veitch,
“The Tweed”

OWL GIRL AND THE MUTANTS

A tribe of primitive mutants were living around a blasted ruin in a desert waste, raiding neighboring settlements and preying upon those travelers and scavengers foolish enough to dare venture into their “sacred death lands” – the ruined city they considered

taboo, land of the ancient sky gods. The mutants killed and often ate anyone who defiled their sacred grounds . . . until a goddess floated down out of the sky!

Mutant Warriors (TL0)

Stone-Age Warriors

A gang of fierce warriors with various mutations. The tribe are fanatical followers of the sky goddess they call Owl Girl.

TS: 1.5. *WT:* 1.

Classes: Rec. *Mobility:* Foot.

Quality: Basic equipment; Good troops.

Features: Fanatic; Terrain (Desert).

Cost: \$42.5K to raise; \$6K to maintain.

OWL GIRL'S MUTANT TRIBE FORCE ROSTER

Elements	Total TS	Classes	Mobility	Features
10 Mutant Warriors (Stone-Age Warriors)	15	Rec	Foot	Fanatic, Terrain (Desert)
Giant Mutant Cannibals (Ogres)	2	–	Foot	Impetuous
Giant Sand Worm (Giant Monster)	15	Arm	Foot	Disloyal, Impetuous, Terrain (Desert)
Owl Girl (Balloon)	(1)	Air	0	Night
Mutant Catapults (Light Artillery)	(3)	Art	Foot	
<i>Air TS</i>	1			
<i>Artillery TS</i>	3			
<i>Recon TS</i>	15			
Force TS	32.4			

There are 10 elements of mutant warriors with a total TS of 15.

Giant Mutant Cannibals (TL0)

Ogres

The tribe's elite storm troopers are a squad of 8'-tall pin-headed mutant cannibals armed with stop signs as clubs. Not very bright, however.

TS: 2. WT: 4.

Classes: None. Mobility: Foot.

Quality: Poor equipment; Inferior troops.

Features: Impetuous; Terrain (Desert).

Cost: \$36K to raise; \$2K to maintain.

There is one element of giant mutant cannibals with a total TS of 8.

Giant Sand Worm (TL0)

Giant Monster

A mutant giant sand worm semi-tamed by the tribe, who responds to their drums. However, it is sometimes prone to eating the tribesmen instead of the enemy.

TS: 15. WT: 8.

Classes: Armor. Mobility: Foot.

Quality: Poor equipment; Inferior troops.

Features: Disloyal; Impetuous; Terrain (Desert).

Cost: \$360K to raise; \$10K to maintain.

There is only one giant monster, with a total TS of 15.

Owl Girl (TL5)

Balloon

Owl Girl (Dara Darwin) is a teenage girl with a hot-air balloon and set of bulky night vision goggles. Rather than eat her, the mutants saw her descend from the air, and now worship her as their sky goddess "Owl Girl." Dara has accepted their

hospitality and has busied herself upgrading their defenses, just in case her "old friends" of DDT show up.

TS: (1). WT: 2.

Classes: Air. Mobility: 0.

Quality: Basic equipment; Average troop.

Features: Night.

Cost: \$60K to raise; \$6K to maintain.

There is one Owl Girl element with a total TS of 1.

Mutant Catapults (TL4)

Light Artillery

The bolt-throwers were manufactured by Owl Girl from various springs and parts she salvaged from the ruins, crewed by a team of picked mutants she personally trained.

TS: (3). WT: 1.

Classes: Art. Mobility: Foot.

Quality: Poor equipment; Basic troops.

Features: None.

Cost: \$30K to raise; \$6K to maintain.

There is one catapult element with a total TS of 3.

ABOUT THE COLUMNIST

David L. Pulver is a Canadian freelance author. An avid science-fiction fan, he began roleplaying in junior high with the newly released *Basic Dungeons & Dragons*. Upon graduating from university, he decided to become a game designer. Since then, David has written over 70 roleplaying game books, and he has worked as a staff writer, editor, and line developer for Steve Jackson Games and Guardians of Order. He is best known for creating *Transhuman Space*, co-authoring the *Big Eyes, Small Mouth* anime RPG, and writing countless *GURPS* books, including the *GURPS Basic Set, Fourth Edition*, *GURPS Ultra-Tech*, and the *GURPS Spaceships* series.

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BETTER IMPROVISED WEAPONS

BY PETER V. DELL'ORTO

Meldon Jones crouched near a pile of rusted junk as the rad-zombies shuffled toward him. He'd tried to be stealthy, but they'd heard him, smelled him, sensed his tasty brains – he still wasn't sure how they hunted the norms.

He pointed his trusty .45 at the head of the nearest one and pulled the trigger.

Nothing.

His heart sank. The trader had promised him the reloaded .45 rounds were good!

The zombies kept coming.

Meldon swapped his .45 to his off-hand and looked to the heap. A piece of pipe about a yard long was sticking out of the mess. He grabbed it – would it be enough to club down the prowling brain-eater?

A weapon is merely a tool for committing violence. Humanity makes dedicated weapons for a reason. Part of this is because the form and quality needed to have a man-killing weapon that won't fail against other weapons and armor doesn't match that of a similar work instrument. The features you need (and don't need) in a work axe are not the same as a weapon. A handy piece of pipe makes a nice instrument for whacking things, but it's not as good as a club designed with an ergonomic grip and a surface that won't easily bend, rust, or dent. And so on.

Yet in books, comics, and movies – especially movies! – whatever improvised weapon comes to hand is far superior to the actual dedicated weapons of those you wield it against. A pool cue is a better staff than a staff is, a board with a nail in it is a superior way to break mutant skulls than a police baton, and a Craftsman chainsaw beats a sword made by a master craftsman. At least for that first scene . . .

These rules are meant for use in games such as *GURPS Action*, *GURPS After the End*, *GURPS Dungeon Fantasy*, and after-the-apocalypse *GURPS Zombies* campaigns.

I got a sawed-off pool cue with a leather strap!

*– Tom Servo, in *Mystery Science Theater 3000* #3.7*

However, they can be applied to any genre where improvised weapons come into play.

BETTER THE FIRST TIME

These rules allow improvised weapons superior performance . . . once.

Improvised Rule of Cool

When someone initially uses an improvised weapon in combat, it is an inherently superior and more effective weapon than actual dedicated weaponry. The weapon is only -1 to hit (no penalty with the Improvised Weapons perk), does +1 damage compared to the weapon it most resembles, and the penalties listed under *Cross-Cultural Encounters (Martial Arts*, p. 212) apply to all of the opponents in the encounter even if the defender is familiar with the basic weapon that the item resembles.

This lasts only one combat, one extended scene in an adventure (breaking into a complex, escaping the prison, that first day in gladiator school), or one action sequence. The GM's word on how long it lasts is final – but it should never be less than one complete fight!

Fool Me Once . . .

Although the Rule of Cool only applies once for a given weapon, the GM might want to extend this further, allowing only the first use by anyone of a given *type* of improvised weapon to gain the benefits. Thus, someone can only use a chain as a kusari once and claim the benefits – even a different length of chain or the same chain by someone else wouldn't do. The board with a nail in it works great once, but from then on, all spiked boards are exempt from the Rule of Cool for everyone. This means that the protagonists

can't pass around the "better" improvised weapon, but it also means a constant hunt for more and more-obscure "weapons" for use ("I ready the stapler!"). In the right sort of game, this is a definite plus . . .

MINE IS ALWAYS BETTER

Sometimes improvised weapons stick around and become someone's signature weapon. Umbrellas, stools, frying pans, and baseball bats all have shown up as singular, special improvised weapons. Here are some ways to make that (more) sensible.

Intimidation Factor

Improvised weapons are scary. You can get shot with a gun or stabbed with a sword, but getting dismembered by a chainsaw or getting hit with a yo-yo circular-saw blade is another thing altogether.

When wielding an improvised weapon, all Intimidation attempts are at +1. The user must hold it in his hand, or otherwise display it prominently, for it to count.

"Improvised" Means "More Effective"

Pick one of the benefits listed under *Improvised Rule of Cool* (p. 26) – reduced “to hit” penalties, improved damage, or penalties to the defender. This benefit *always* applies, even after the other benefits fade away.

Which benefit applies should be matched to the type of weapon. For example, a car antenna rapier might be harder to defend against (it’s whippy), a board with a nail would do +1 damage, and a tape-handled piece of rebar could be at just -1 to hit.

I Made It Myself

This genre switch limits *all* of the rules above to singular custom weapons made by the actual wielder. In order for a weapon to apply, it must be based on improvised equipment, but modified by the actual wielder. This can be simple modification (a duct tape grip, a nail through the business end, sharpening the edge of a blunt tool) or a more extensive one (replacing the plastic string with monowire on a weed whacker, coring out a bat and pouring lead into the tip, making a three-section staff out of nylon rope and wooden dowels, etc.). In addition, such weapons *never* count as cheap quality, even if made from cheap materials.

Perks

Certain perks can modify the effectiveness of improvised weapons, regardless of if the GM is using the rules above.

Weapon Bond

You may take a Weapon Bond with an improvised weapon. You may claim the benefits of the Improvised Weapons perk for that weapon for any skill it is used with, *and* gain a further +1 for Weapon Bond.

Equipment Bond

In addition to its usual bonuses, Equipment Bond gives its +1 with a specific tool when the tool is used as an improvised weapon *or* reduces any “to hit” penalties to zero. This can be stacked with Weapon Bond, as above! Nail guns are a good choice . . .

Example: A mechanic has an Equipment Bond with her monkey wrench. In addition to getting a +1 to repair things

with it, she also gets +1 to skill when using it in combat *or* reduces the hit penalty for that tool to 0, whichever is better.

* * *

Meldon got a solid grip on the pipe, and took a swing at the first rad-zombie. Then the second, then the third.

One by one they dropped, their glowing red eyes dimmed and their skulls smashed into pulp.

As the last zombie fell, Jones glanced at the pipe that had saved his life – then dropped it in the dirt. He holstered his .45 and looked to the horizon.

It was time to move on . . .

ABOUT THE AUTHOR

Peter V. Dell'Orto was raised in New Jersey. He started role-playing in 1981, with *Dungeons & Dragons*, and has played *GURPS* since *Man to Man*. He has been active as a *GURPS* playtester, editor, and contributing author since 1996. Peter is the author of numerous *GURPS* articles for *Pyramid* magazine; author of *GURPS Dungeon Fantasy 12: Ninja*, and *GURPS Dungeon Fantasy Denizens: Barbarians*; and coauthor of *GURPS Dungeon Fantasy 15: Henchmen*, *GURPS Dungeon Fantasy Monsters 1*, *GURPS Low-Tech*, *GURPS Low-Tech Companion 2: Weapons and Warriors*, *GURPS Martial Arts*, and *GURPS Martial Arts: Gladiators*. He also writes the blog *Dungeon Fantastic* at dungeonthefantastic.blogspot.com. Outside of gaming, his hobbies include martial arts (he has fought amateur MMA in the SHOOTO organization in Japan, submission grappling in the U.S., and holds a *shodan* rank in kendo), fitness, studying Japanese, and painting miniatures.

gurps.sjgames.com/martialarts

STEVE JACKSON GAMES

NUCLEAR LEGACY

BY ROGER BURTON WEST

Whether the crash is fast or slow, there's going to come a time when nobody's left who knows how to operate a nuclear power plant. But that doesn't mean it can safely be ignored.

... and yet where the demons of the Fallout covered the countryside, the bodies for a time would not decay, except in contact with fertile earth.

—Walter M. Miller, *A Canticle for Leibowitz*

How DID IT END?

The reasons why the power plant was abandoned will have some effect on how long it takes before things get really bad.

If there's no preparation time (e.g., rapture or irradiation causes people to leave before they can do anything), then within a few days, some random event will cause the safety systems to shut it down.

If the plant is abandoned due to a nonradiation emergency (such as zombies, human riots, or highly extreme weather), the plant workers have a little time to make some hasty efforts at safely shutting down the site. The emergency that caused the evacuation does some amount of damage after the staff has gone.

In a radiation emergency so bad the area has to be abandoned, normal procedure would be to encase the worst of it in concrete and seal the rest to prevent dust releases as aging buildings collapse. But maybe there wasn't time to do that.

If the plant is abandoned more slowly (perhaps because of plague or slow flooding), the staff will know they can't keep it going and won't be back for a while, so they'll shut it down cleanly and make what preparations they can for the long term. This is the best position to be in – fuel can be moved off-site to long-term storage, which is the only way to avoid the catastrophes that happen next.

PROGRESS OF THE DISASTER

Most reactors are set up to shut down automatically if they lose power from outside. Even without that, within a week

after abandonment, something will go slightly out of bounds; an operator could spot and deal with it, but without that option, the plant shuts down immediately.

For older power plants, this is a problem. Even after an emergency shutdown, they need to keep cooling water circulating to avoid a core meltdown. (Designs from the last couple of decades have put more emphasis on "passive safety," avoiding this problem.) Once the emergency generators run out of fuel after a week or so, the water evaporates, and the core gets hotter. Within a few hours or days, it melts. The molten core then burns through steel and concrete, eventually reaching groundwater; this causes a massive explosion of (radioactive) steam, as well as irradiating the aquifers. This is enough to crack any current containment building, and the resulting influx of air fuels a core fire.

Another potential source of danger is the spent fuel stored at reactor sites until it can be shipped out for reprocessing or long-term disposal. (In the United States, it's not reprocessed for political reasons; elsewhere in the world, it's sent to other facilities for renewal.)

The material is extremely hot, both thermally and radioactively, so it is kept underwater in cooling ponds. Once power is lost, the ponds' water-circulation pumps stop, and the water gradually boils away, over a period of weeks or months. Once the fuel is exposed to air, it heats up faster and soon catches fire.

Whether it's a core, spent fuel, or both, this fire dumps massive quantities of radioactive particulates into the atmosphere. This scales from a Chernobyl-style event upward: If the whole core gets loose, within a few months, it creates a radioactive wasteland around the plant (especially downwind) a few miles across that lasts for thousands of years. Contamination is obvious in the environment for 20 miles or so, with (mundanely) mutated plants and animals everywhere.

The only way to prevent this sort of disaster after abandonment in the long term is to have a passively safe reactor design and to ship out all the spent fuel as soon as it's safe to move it (which just relocates the problem somewhere else, of course, though possibly somewhere better able to deal with it). As an alternative, all hazardous sites could be entombed in concrete many yards thick, a substantial construction project.

DISPOSAL SITES

Low-level waste is mildly radioactive, but can be ignored in the bigger picture. More serious concerns are intermediate- and high-level waste, which consist of used nuclear fuel rods, contaminated structural materials from reactor decommissioning, and similar highly radioactive substances. Some of this can be reprocessed and used to fuel reactors again, but some is left over – and reprocessing itself produces large amounts of intermediate-level waste, some of it in liquid form. In the short term, high-level waste, which needs cooling as well as shielding, is kept in cooling ponds, with effects as noted above when the pumps shut down.

Longer-term plans for both waste types are for storage deep underground, in particularly stable areas of bedrock, though even now, six decades after the start of commercial nuclear energy, no facility for this has actually opened; the Onkalo repository in Finland is probably closest. After 30 years of surface storage, the waste will be encased in iron canisters, then in copper capsules, which will be embedded in a layer of bentonite clay in a tunnel over 500 yards underground. After 100,000 years, the radioactivity should be about the same as that of the uranium ore mined to make the fuel in the first place. Some doubt has been raised over the stability of the copper capsules, but any long-term storage will probably look broadly similar to this. (A significant minority of nuclear planners points out that in a few hundred years we may well have a *use* for this stuff, so it shouldn't be put *too* far out of reach.)

In the United States, the Yucca Mountain repository in Nevada was tested for nine years before its closure for admittedly political reasons in 2011, but may be reopened; its storage is a mere 55 yards below ground level, over what turns out to be the Bow Ridge fault line. For the moment, government waste (mostly from nuclear weapon maintenance) goes into the Waste Isolation Pilot Plant in New Mexico, over 700 yards below ground level, though it's had a remarkably poor safety record. Commercial waste that's moved from reactor sites ends up at the Morris Operation in Illinois, next to the Dresden Generating Station, where all 772 tons of it (as of 2009) are currently stored on the surface.

On the decade and century scales, warning signs are probably enough to keep most people out of these sites even if civilization has collapsed enough that the places are no longer guarded. But decade and century scales aren't enough for a site still dangerous after 10,000 or 100,000 years; language changes over time, and the perils of radiation may be completely forgotten. Extensive studies have been done on how to create a language-neutral warning: part of the problem is that anything that makes the location look special may *attract* treasure-hunters, so one proposal suggests a series of jagged walls surrounding an open empty square, with a variety of written and pictorial warnings buried underground but well above the actual storage site.

Breaking open a deep site obviously takes a great deal of effort, or an earthquake, but if enough storage capsules are shattered, this could eventually produce a death zone even bigger than the ones around power plants.

ALL AT SEA

What about nuclear-propelled submarines? They're designed to run for long periods without external power,

though once the reactor shuts down, coolant circulation pumps soon follow. Some designs use exotic technologies, like the Soviet "Alfa" (Project 705) class with its molten lead-bismuth alloy coolant. This type of coolant can't boil away and can last years or even decades before a pipe inevitably breaks. The coolant thus collects at the bottom of the hull and solidifies, and the fuel catches fire. The fire may be completely contained within the hull, depleting the oxygen and then going out, which would make for a rapidly lethal atmosphere of radioactive dust for anyone exploring it in later years. If hatches were left open, there'll be a lethal zone as for a land-bound power reactor (see *Progress of the Disaster*, p. 28).

ANCIENT BOMBS

Nuclear weapons, perversely, are less of a hazard than abandoned power plants, because their major active components haven't undergone significant nuclear reactions. However, they won't be usable for long after maintenance stops.

Tritium, used as a neutron source in all vaguely modern weapons designs, has a half-life of around 12 years, after which it decays into helium-3, a neutron absorber. Tritium bottles are currently changed every two to three years to maintain full effectiveness. Without that boost, a bomb might still go off if triggered, but at vastly reduced yield.

Next to go are the electronics and conventional explosives. Their life depends on storage conditions. In a hot and humid atmosphere, this could be mere months, while in a less hostile environment, they could last up to 10 years or so.

The highly enriched nuclear fuel that remains can be an effective poison if dispersed by human design or a major physical catastrophe.

*"Pop, there's been radiation all over
the place for a whole week now."*

"Great. Clears the sinuses."

"Pop... the cat's gone bald."

"Good. So has your mother."

*– Berkeley Breathed,
Bloom County*

ONE HUNDRED YEARS AFTER

Apart from the radiation zone, the buildings of an abandoned plant gradually decay and collapse (sooner rather than later if they were weakened by explosion and fire). Storage tanks might stand up for years or decades, only to fail, releasing dangerous chemicals, when the ground shakes more than usual because visitors have finally arrived. Chlorine, propane, sulfuric acid, and ammonia (see p. B428 for strong acids) are all plausible materials to keep in bulk at a reactor site.

The remains of the core are still dangerously hot and very highly radioactive, perhaps tens of thousands of rads per hour. Even a couple of minutes inside the main reactor building can be invisibly fatal.

If anything is living in the old plant, it is something that can adapt to the radiation. Birds have particularly high radiation tolerance and may well colonize the area before other creatures can survive it. Some fungi in Chernobyl feed off the radiation in the old core (and their descendants might be useful for decontaminating other places). Decay organisms do particularly badly in a high-rad environment, and corpses lie unrotted. Scavengers and carnivores often have more problems with accumulated environmental poisons than herbivores, because they eat animals that have already concentrated large doses, so they're less likely to be present here. Or maybe they'll have learned to avoid the local radioactive herbivores and prefer tasty healthy humans instead.

Around the old plant, it's very quiet (except for the birds), and there's little vegetation. Any trees may have been killed in place, to crumble at a touch.

BUT YOU KNOW I HAD TO GO

With all these problems, why would anyone enter the area around a nuclear site?

Scavengers can find rich pickings if they can cope with the radiation. Especially if the plant was abandoned quickly, there will be structural materials, protective gear, computers, industrial chemicals, and machine tools for the taking; the radiation prevents most of the plant and animal damage usually found in long-abandoned buildings. Some of this material is too radioactive to use elsewhere, though if it was stored in a sealed building within the radiation zone, it might have survived in good shape.

Radioactive materials might find buyers, too, if a group can handle them. Even if nobody is building more reactors, a basic heating system could run off the decay heat of nuclear byproducts, and wrapping a conventional bomb in radioactive powder makes for an effective area-denial weapon.

Another reason to visit would be to prevent further environmental hazard. Contaminated buildings will gradually

decay and collapse, releasing new loads of radioactive dust. A crumbling building could be spotted from a safe distance with binoculars, and a construction team could then go in to try to shore it up or perhaps seal it inside something more durable.

DECONTAMINATION

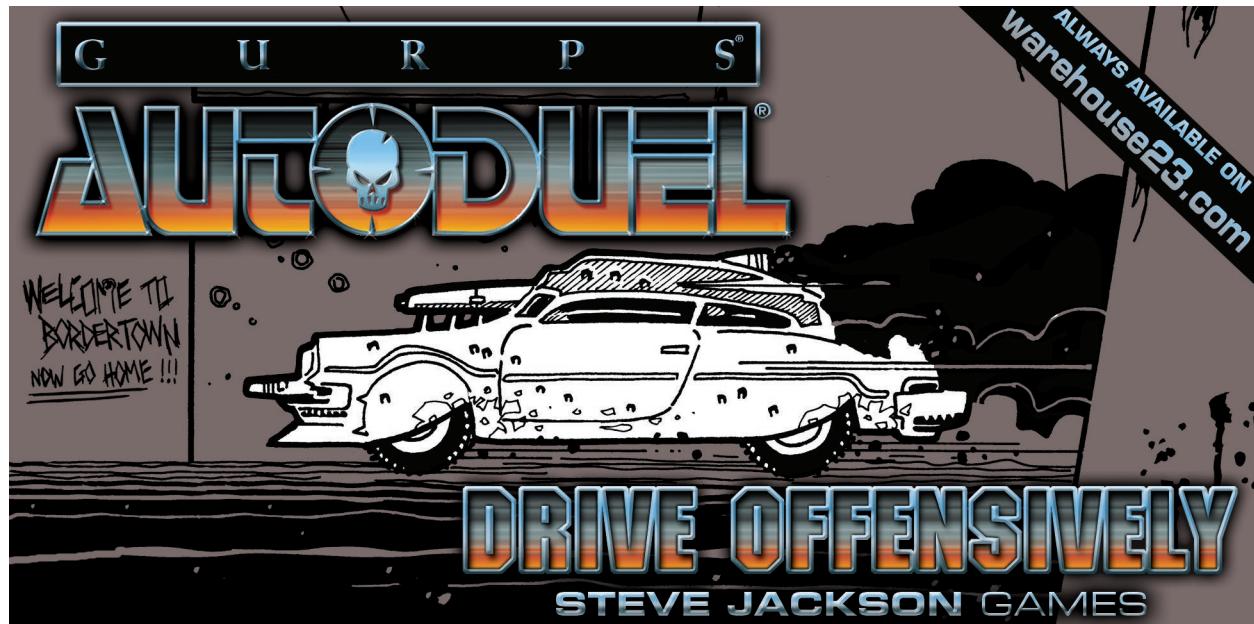
Decontamination is hard work; contaminated equipment usually is abandoned in the radiation zone. However, some resources might be scarce and thus worth the risk. A particle decontamination is similar to an extreme deep clean, using high-pressure water and gas jets to blast radioactive particles out of nooks and crannies. Anything soft or absorbent like fabric is almost always left behind, because it won't stand up to the force of cleaning.

A worse problem is neutron activation. Most radiation includes some level of neutrons, which have the property of making many substances neutron emitters themselves. Metal is particularly prone to this, and even a sealed armored vehicle which is scrubbed down repeatedly may still have a radioactive outer shell that will dose its occupants and any bystanders. In this case, the surface layers may be cut loose with water jets, sandblasting, or chemical etching, or simply unbolted and thrown away. The end product of all this is usually a slightly less radioactive item and a large storage tank of slightly radioactive slurry.

The process has diminishing returns: A few hours' work might remove half of the contamination on a vehicle, another few hours half of what's left, and so on. The only way to tell how well the job has been done is with a radiation detector.

ABOUT THE AUTHOR

Roger Burton West is a British computer wrangler and writer. He does not work with radioactive substances, and would like to reassure the NSA/GCHQ that his recent web search history has an entirely legitimate explanation.



RANDOM THOUGHT TABLE

KEEPING THE FALLEN WORLD UNDER CONTROL

BY STEVEN MARSH, PYRAMID EDITOR

One of the great “tricks” for many kinds of roleplaying games – especially in the fantasy realm – is to treat the campaign world like an inverse onion, where the heroes start at an established core, and then the world opens up before them, layer by layer, as the adventurers gain experience and wanderlust. It’s a huge time-saver for the GM, because then you don’t need to build every aspect of the world; you just need the town the heroes start in, and whatever’s within a day’s travel, and can start making things up depending on which way the heroes go.

However, this is harder for other kinds of games – including post-apocalyptic settings – where it’s reasonable that the heroes would know a lot more about the world. After all, if *Mad Max*-style motorists are still traversing the wasteland, then “within a day’s travel” is a much wider swath than when you’re going about by horseback. Plus, if there are radio communications or similar reliable(-ish) long-range communication methods, then the accessibility of being aware of one’s neighbors is greater. Likewise, literacy and paper archives means that the heroes might well have access to a plethora of knowledge that the GM doesn’t necessarily want to create. (“Yes, the city once known as New York is only a day’s ride away . . . but I haven’t decided what’s left there yet!”) So what’s a post-apocalyptic GM to do?

A classic method for establishing a strange setting is to have the protagonists be from outside of it. Then the explorers learn about the setting at the same time as their controlling players. If the situation is tense enough to begin with, then

Oh yes, and on every world where they exist, in between 5% and 20% of Auer Retail branches, the aisles are actually miniature dimensional highways.

– *Pyramid #3/63: Infinite Worlds II*

the heroes are too focused on their short-term survival goals to worry about the geopolitical state of the world, or what nearby cities have oats. Here, then, are a few ideas for having the adventurers initially unaware of the larger world situation.

YOU MISSED IT?!

One of the simplest ways to launch an easy-to-manage post-apocalyptic setting is to say that the world ended and the PCs somehow didn’t get the memo. Having the heroes arrive on the scene, ignorant, from some past (nonapocalyptic) era gives them a ready excuse to try to understand this strange new world *and* a special hook that sets them apart from others in the campaign world. This is especially true if their origin is one of exceptional (or forgotten) tech. Some examples include:

- The heroes are from the past and got here via cryogenics or some other terrestrial method of explaining how they hoppedscotched over a handful of generations.
- They were in outer space, and have arrived in the post-apocalyptic era via relativistic time dilation (in a somewhat realistic setting) or via time hiccups/anti-time wormholes/space wizards (in somewhat less-realistic realms).
- They were from an alternate dimension and made the proverbial transdimensional wrong turn at Albuquerque.

Having missed what went wrong with the world – and trying to figure it out – is a key part of protagonist George Taylor’s narrative thrust in 1968’s *Planet of the Apes*, and his knowledge of a pre-fall society is what sets him apart. Tangentially related, Rick Grimes from *The Walking Dead* awakens from a coma with no knowledge of what’s caused the zombie apocalypse.

In this case, all the problems mentioned earlier – paper archives, radio communication, etc. – may still be an issue, but placing the heroes in a tense initial situation (especially one where they aren’t trusted by the natives) can give the GM enough time to reel out details as needed.

CRACK THE SEAL ON THE FUTURE

Another idea is to have the protagonists be part of a group that's off the grid for whatever reason, and have that reason dry up or be rendered moot. For example, if the PCs are part of a community that survived the apocalypse by being in a shelter with 100 years' worth of supplies . . . well, 100 years isn't forever. Once their supplies run out, the heroes are the best chance to crack the hermetic seal on the shelter, go out, and explore.

This was roughly the method used in the fantasy game *Earthdawn*, where the world was overrun by horrific monsters and humanity needed to hole up for centuries. Once those monsters ebbed enough that returning to the lands above wasn't an automatic death sentence, these shelters began to re-open and return to the world above.

This is an easily controllable setting that doesn't seem too artificially contrived. In an apocalyptic campaign, there likely *would* be groups with little-to-no interest in the outside world, who allow that information to fade and die in the intervening generations. Or even if the group *was* interested, it's entirely possible the community couldn't keep up with events; if they sealed themselves up at the very beginning

AND WE ARE . . . WHERE, EXACTLY?

The heroes not only might have missed the apocalypse, they also could have ended up somewhere where there isn't any civilization. In this case, the first story arc – which can last a number of adventures – might be about the adventurers trying to make their way to larger and larger stripes of civilization – again, similar to how *The Walking Dead* opens. Thus, the protagonists might start out in a cryogenics chamber in the middle of nowhere and make their way to a cult compound where they rescue someone who's simple-minded but noble (who can provide some info about the world in broad strokes, but not much). From there the explorers might make their way to a confrontation against a gang fortress (pp. 4-12), whose members aren't very interested in trading stories. From there, they might acquire a vehicle and a map with only one location circled, about a day's ride away . . .

of the apocalypse and their means of contacting the outside world broke almost immediately, there could be scads about the world that changed, either during the apocalypse or in its aftermath. ("Elders, you remember how our songs and stories would frequently mention a 'moon'? We've been investigating for months under cloudless skies; shouldn't we have seen it by now?")

Having a base of operations that was otherwise cut off from the world gives the explorers a safe place to return, a home to defend, and the basis of a narrative arc as they grow in power and ability beyond their native land.

PAY NO ATTENTION TO THE MAN BEHIND THE CURTAIN

As a final option – which ties together both of these ideas – perhaps the heroes are part of a social construct that denies there *was* an apocalypse. Perhaps the protagonists are born into a completely constructed reality – either virtual (*The Matrix*) or physical/social (George Orwell's *1984*). Then their first adventure arc can be to tear down that society – or have it come crumbling apart around them – before moving on to the rest of the campaign.

In fact, if the players can accept surprises, the GM might not even *tell* the gaming group that they're making characters for a post-apocalyptic setting. If the campaign is pitched as something similar to *The Prisoner* or *1984*, then the reveal of the true nature of the world can come as a shock to the gamers at the same time it is to the players.

Like the first option of having the heroes "wake up" in this location, this would give them their own special origin story. If the fabricated society also had special tech or knowledge, then that can give them a special edge in the wasteland.

Going this route would make the entire post-apocalyptic setting one of mysteries and discoveries, with the explorers uncovering the truth about their homes, their neighbors, and the world at large. Of course, that relies on the GM making up the truth before the adventurers uncover it . . . but at least he can buy himself some time with these ideas.

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 10 years; during that time, he has won four Origins awards. He lives in Indiana with his wife, Nikola Vrtis, and their son.

I awoke to find the America I knew a total wreck – to find Americans a hunted race in their own land, hiding in the dense forests that covered the shattered and leveled ruins of their once magnificent cities, desperately preserving, and struggling to develop in their secret retreats, the remnants of their culture and science and their independence.

– Philip Francis Nowlan, *The Adventures of Buck Rogers*

SHORT BURSTS

RAPID RAJ

BY MATT RIGGSBY

*The next edition of **Car Wars** is coming! To help prepare, Pyramid proudly presents this vignette, spotlighting one aspect of its bold new world. Visit carwars.sjgames.com to keep abreast of the latest developments!*

* * *

"This is Ted Chin back in the box as always with Denise 'Big D' Peltz, and we're getting really close to the end of the Miami Crossover 200. During the break, some of the backfield shook itself out, with March Tuckman losing a wheel and falling out of the event, but the story of this whole thing remains the three-way contest between Melissa Carnaby, Raj Ramirez, and Ibrahim Toombs."

"And you'd expect Ramirez to have done better today, Ted. The Miami wide double-cross track rewards speed and maneuverability as much as anything. Those are usually Ramirez's strengths, but Carnaby has been staying one step ahead of him all day long, and Ramirez's light weapons aren't helping his cause. Toombs hasn't been dominant after he lost the lead he had in the first few laps, but Carnaby and Ramirez just can't take him out."

"Looks like it's still Carnaby's race to lose. Just five laps left to go and she's keeping a bare lead. She's been sparing with mines, but she's been just amazing when she does drop them."

"Maybe that's what's keeping Ramirez at a distance, Ted. Carnaby hasn't won as many events as either Toombs or Ramirez, but she's got the highest body count in the division and second highest in the league. They may not want to mess with that."

"Maybe not, but they're going to have to take their chances, and it looks like they might be doing just that. On the approach to the X, Ramirez is closing up tight behind Carnaby. Taking a big risk there. He's jinking hard, but he has to look out for both Toombs behind him and Carnaby in front. On the approach to the exclusion zone, now. If Carnaby's going to drop some mines it'll be soon. Oh, and it looks like Ramirez has some engine trouble and has lost **Wow!** Amazing! Can you believe that?"

"Incredible! That's going on the highlight reels tonight."

"Going back to the replay, Ramirez plays this brilliantly. He's tight behind Carnaby and drifting to the left-hand edge of the track. You can see him go into a spin to the right here and drop some smoke, just after she drops the mines. That takes him out of the way for Toombs to get a shot at Carnaby. Her rear armor just can't take a hit with an autocannon, not after Ramirez has been chipping away at it all afternoon. That's enough to knock her sideways and into the wall."

"Yeah, and Toombs, he hasn't seen the mines! He's too close when he comes through the smoke! He just goes right over them! He loses a tire while Ramirez comes out of a controlled spin just before he runs out of lane, swerves around Carnaby, and now nobody can catch him."

"That's why they call him Rapid Raj. Just a stunning move. We'll see if Cameron down on the field can check on Carnaby's condition and maybe get a word with her . . ."

About the Author

Matt Riggsby has written over 120 articles and supplements for Steve Jackson Games.



ODDS AND ENDS

AMID THE RUINS, YOU FIND . . .

Explorers of a post-apocalyptic world love to find little troves in the wasteland, but it can be difficult to come up with ideas at the spur of the moment. Here are some tiny encounters to sprinkle throughout a campaign. They may be throw-away scenes or the basis for larger adventures.

Call of Battlefield Extreme!

The heroes find a functional computer-gaming center that's been off the grid and relatively undamaged. It was originally designed for multiplayer modern-day (as of early 21st century) combat. It's valuable for parts, and – of course – useful as a computing station on its own (although it lacks any other useful software, and it needs some form of compatible power). However, its greatest application may be as a training center for shootists and – using networked terminals – tacticians. Playing the game still counts as being self-taught (each two hours interacting with the software counts as one hour as far as training – p. B293), but this training can come *without* using ammo (which is almost certainly in low supply).

Seeds of Doom

This seems to be a seed vault, with rows and rows of hermetically sealed envelopes housing all manner of proto-plants. While nowhere as impressive as the Svalbard Global Seed Vault, it's a nice lower-value find. However, perhaps ominously, one dead body is here, dressed as if pre-fall. His body is eerily preserved, and his face is in a terrifying grimace, as if he passed away in great pain. He seems to have died pointing at one of the vaults.

Infinite Car?

This automobile – from before the fall, pristine and untouched – seems to be covered with odd reflective material

(which those with a scientific background might recognize as solar cells). Initial tests seem to indicate that it's a solar-powered vehicle. However, a charlatan created this, generations ago. Although it does generate some power from the sun, it primarily relies on a hidden gasoline engine to energize its internal battery. (Somehow, the battery has retained a charge from the last time its generator was used.) It's incredibly valuable for parts, but if the heroes think they've discovered limitless transport, they're likely to be disappointed once they get somewhere interesting and the engine dies . . .

The Future Is Smaller Than Expected . . .

The heroes find a miniature diorama of the nearby region. Although it's obviously generations outdated, enough landmarks still exist to use it as a map. And some intriguing elements are depicted that might be of incredible interest, including a tiny complex that seems to contain larger-than-human robotic forms.

Maybe We Can Use Them as Target Practice?

These reflective discs are all labeled "Complete Wikipedia Archive" and numbered, with a date that would place them as having been created *after* the fall. Can the heroes find someone who can do something with these odd circles?

Origami for Everyone!

This warehouse may have been used for nefarious purposes once upon a time, but its primary draw is several crates with green hand-sized pieces of paper, all with "\$100" written on them. They're not really very useful nowadays (maybe as kindling), but they may be of interest to a historian, or someone of (ironically) obscene wealth who wished to own a symbol of opulence from before the fall.

I hear people talking in the laundromat about the end of the world, and they're no more excited than if they were comparing detergents. People talk about the destruction of the ozone layer and the death of all life. They talk about the devastation of the rainforests, about deadly pollution that will be with us for thousands and millions of years, about the disappearance of dozens of species of life every day, about the end of speciation itself. And they seem perfectly calm.

– Daniel Quinn, *Ishmael: An Adventure of the Mind and Spirit*

ABOUT GURPS

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MAP OF THE BUNKER FOR "THE REDEEMERS," PYRAMID #3/88: THE END IS NIGH

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