

Space Gamer

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MASTERING THE GAME

Confessions of a MORROW PROJECT Gamemaster

(or, You want to do *what* with your M16?)

by Jonathan Walton

For you who have never tried (or seen) it, *The Morrow Project* (TimeLine Ltd.) is something a little different in the RPG market. It is a Post-Holocaust system which, if you follow the standard *TMP* guidelines, gives the players a true purpose; not just to survive, but to rebuild. *The Morrow Project's* premise is that certain men of vision foresaw a war coming and realized that, with proper preparation, rebuilding could be made much easier. To this end, they used a cryogenic freezing technique to preserve teams of well-educated and well-equipped people, to be awakened after the worst of the holocaust. Their mission: to help rebuild civilization.

Players take the characters of Morrow Project personnel. The game (in its second edition) uses the Chaosium system of skill rolls on percentile dice for most of the game mechanics. These skills increase with experience and use. In addition, the primary "campaign map" is a standard North American Road Atlas. As Project Director, you have several set-up options. The Morrow Project was set up for different types of teams: MARS (Mobile Assault, Rescue and Strike) teams, which are generally heavily armed and armored, intended for selective use of force when needed; Science teams, lightly armed but (generally) heavily armored, usually able to deal with any sort of research problem; and Recon teams, moderately armed and armored (depending on their specific mission), designed to scout conditions in large areas and report them to the Primary Base. In addition, there are "Special" teams, which are hospitals, power stations, agricultural teams, "infiltration" teams, or anything else that the PD dreams up. Recon teams seem to be the most popular for players, with MARS teams in second place. [No, Charles, you can't have the manpack laser on a Recon team!] Set-up consists of rolling up characters and setting base skills. There are certain minima for skills, depending on team type, plus bonuses on some skills for high dexterity, strength, or intelligence. [Linda, I know that your bayonet just won't fit the end of an Ingram M-10: the

silencer gets in the way. Would you prefer the Uzi with long barrel instead? No, you can't just weld a bigger mount on the bayonet.]

I also give a certain number of "skill points" so that the players can individualize their characters. I use a 40/60 combat/other split. They can add a total of 40 points to their combat-related skills in whatever way they want, and a total of 60 points in the other skills. This seems to work reasonably well. I would not suggest going higher on points, as experience comes reasonably quickly.

The PD then places the team in a "bolt hole" on his campaign map. The hole contains the team's freeze tubes, vehicle(s), and minimal supplies; it is designed to be abandoned. As a suggestion, try to get a Rand McNally Road Atlas for your campaign map: TimeLine uses that atlas in its modules, and it helps a great deal to use the same map. Another major advantage of this is that neither the players nor the PD really have to map — they can save their pennies, and buy their own blank copy to draw all over. Of course, they will not have all of the points of interest that the PD has drawn in on his, like bolt holes, supply caches, bases, and bomb sites; they'll find them eventually. They are now ready to "wake up" and play.

Player Notes

As every game has two facets — playing the game and running the game — I have two sets of advice: one for players, one for Project Directors. For players, first, play your character. In my campaign, "psych tests are required of Morrow personnel," so there should be no maniacal killers running around, posing as players. I have played in campaigns in which the standard opening line was a shot from an M202A1 Flame Weapon. Needless to say, these games tend to get boring rather soon. [Did you hear that we wiped out an entire slaver's caravan last night? It was great! How many slaves did we free? Ah, well, after the White Phosphorus grenades and the machine

guns finished, we did free one guy, but he died later. But we sure got rid of that bunch of slavers!]

This game offers an opportunity to be a "good guy" rather than a person who takes anything he wants at the point of a sword/gun/blaster/etc. Try it, you may find that it is a lot of fun. [Yeah, we got a bunch of slavers, too. Saw them that afternoon, circled back that night, shot their guard with a silenced pistol, knocked everyone out with a BZ gas grenade, and sorted the slavers out. Now they're wearing the chains until we turn them over to the local authorities, and one of the girls we saved has decided she likes me. It was great!]

Also consider what form of civilization your character would help rebuild. I have seen teams rebuild along totally feudal lines, totally American lines, and some totally off-the-wall lines. It all depends on your character.

Second, play *carefully*. [Yes, Linda, I realize that it was a mistake that you killed the team leader when you were actually shooting at the big wolf, but you're going to have to convince the rest of the team of that, not me.] There is no Raise Dead spell in this game. If you tangle with a .50-caliber bullet, you will probably lose, and your only alternative is to start a new character.

Also, realize that you have limited supplies. The firepower that you have is great, but when the ammunition is gone, it is *gone*. (Did you know that flamethrowers are very impressive weapons, but they only have five shots? This can be a serious problem when you have more than five things to shoot.) There are no stores to run down to and pick up another case of ammunition. Reloading may be possible, but it is generally not easy. [Wasn't that great, the way I mowed down that big black fly? Fine, but that was the last of the machine-gun ammo from the turret. *You* stick *your* head out and try to convince that giant wolverine that he shouldn't chew off our tires.]

Also, as part of playing carefully, a reasonable hesitation is generally no big deal. With the Resistweave coveralls, and the vehicles, you can generally last through the first attack

MASTERING THE GAME

of whatever may be after you. So give things the benefit of the doubt — they may turn out to be friendly.

Referee Notes

Now for advice to the PD. First, decide carefully what type of game you wish to run. In *TMP* I generally break it down into six choices:

1. A true campaign vs. isolated incidents.
2. Shortly after the Holocaust vs. long after.
3. Primary Base active vs. Primary Base inactive.
4. Other bases active vs. other bases inactive.
5. Other teams active vs. other teams inactive.
6. Random events (encounters), planned encounters, or a combination.

Using a combination of these, a PD can develop his or her own unique campaign. [Say that again? We can't get Primary on the radio, no other team responds, the only people who will talk to us use the code name "Snake Eaters," and there is a two-foot-thick oak tree blocking the entrance to the bolt hole?! Ah, do these freeze tubes recycle? No? Let's break out the trade pack whiskey, it's going to be a long day.]

Notice, though, that most campaigns will be a combination of planned and totally random encounters. I once had a player who had run into my Generic Soviet Encounter #1 ("We are collecting for the Collective, now give till it hurts, or this AK47 certainly will") spend an entire gaming session trying to find that collective, and making me improvise like mad. This is a very good game for "improvising" gamemasters.

Second, I suggest equipping the players rather well. This kind of puts me out on a limb, since most PDs prefer to have their players scrambling for supplies all the time. [What do you mean there is no 9x19 mm. ammo in the cache? Everybody on the team uses either an Uzi or an Ingram. Well, maybe we can try reloading some rounds from the shotgun shells.] But when you realize the cost of selecting, training, and then freezing one person, the thought of not spending the extra "money" on extra equipment just does not make sense. Your basic installation, the "bolt hole," which is a large concrete and steel bunker with the freeze tubes and certain minimal supplies, is designed to be abandoned. The cost of an extra M16 or grenade launcher or case of ammunition is insignificant compared to that. If you have gone through all that expense and trouble to preserve this person through the war, you are not going to want to lose this person because he ran out of bullets for his pistol!

Also, it makes much more sense to "issue resupply" primarily at the caches rather than

at bases after the war. We currently have a system of interstate highways that makes that sort of overland hauling routine. Does anyone out there seriously think that it would be anywhere near as easy after a war?

I have included my standard Recon Team manifest, which shows all the extra equipment available to a Recon Team in its supply caches, and which cache they are in (my standard is six caches per team, widely scattered, figuring that at least four should survive intact). Give your players what they need to do the job that you have given them.

However, we don't have to be Father Christmas about this, either. I usually spread a team's caches out in the entire state that they are assigned to. In *TMP* terms, it can take a long time to visit each cache. Also, remember that the vehicles are not *that* big, that the players spend a lot of time in their vehicles, and that their storage space is limited. [What do you mean, there's no room to sleep in the vehicle? I'll use the hose of the flamethrower for a pillow, stretch out on the Dragon missile case, and rest my feet on the fusion pack for the laser. What do you mean, claustrophobia? I had my psych tests.]

As to campaign set-up, each PD will eventually work out his own system. I first set up the bases, bolt holes, supply caches, etc., and *then* "bomb." This will generally result in some attrition, either of equipment or of people. I keep track of all the little marks on the map with 3x5 cards, keyed to the map reference numbers, showing what is there, assigned to which team, etc. This works for me; your system should work for you. That is one of the big keys in *TMP*: there is no "official" way. There are several very good modules out, and the game system is excellent, but if you want to totally shift it around, that's fine with TimeLine.

I have included my Standard Recon Team Manifest. A copy of this has been sent to TimeLine, but please understand that it is *my* manifest, not theirs. If you don't like it, junk it, or change it, but don't let your players try to trap you into the line that "it must be official." I have "stolen" ideas from campaigns I have been in, and used them in mine. If an idea is good, it's good. In the after-gaming bull session, I do tell who the idea came from (common courtesy).

If my manifest, or any hints that I give in this article appeal to you, use them! If they don't fit the system you have developed, forget mine, write your own article, and tell me yours. This form of sharing is a very good source for ideas that all of us need.

Off Soapbox. Next suggestion: Let your team have some say in their set-up. They supposedly trained together; let them coordinate skills and weapon types. They should be able to decide who does what, within reason. However, as PD, don't be afraid to tell them if you see potential trouble coming. Most teams need a balance of weapons and skills to be able to survive. [No, Charles, you can't put every-

thing on Special Weapons and carry a flamethrower and a Dragon everywhere. Why don't you try the Hall Cleaner (Atchisson Assault Shotgun) load? That should give you plenty to play with.]

Also, I do not allow all of the standard loads to Recon teams. A Stoner M23 assault carbine, Browning Hi-Power, and assortment of grenades are fine; but a sniper rifle or an Ingram M-10 and demo pack are a little off, at least for a Recon team. The M47 Dragon guided missile load is right out!

Running the Project

When the time comes for your team to face the cold, cruel world ["As the bolt hole door opens, you see a move—" "We're firing with everything we've got!" "—ment. Well, okay you now see what used to be a rabbit, you think. There isn't too much left so you can't tell for sure"], *don't* tell them what's going on, no matter what type of game you're running! They don't *know* what type of game you're running. They have just come out of a hole in the ground where they have been asleep for X many years. They don't know how long they have been there, or what outside conditions are. All they know is where the bolt hole was, if they had a special mission, and whatever else they can figure out. If they don't use the radio, don't "contact" them. If they don't use the periscope in the bolt hole, let them go out blind. It's their job to find out what is going on.

However, don't be too subtle at first. It will take players a while to get used to things. Also, the time after a nuclear war would probably be a brutal, unsubtle time. Work slowly into the hidden hints, the legends, and so on. Give them things to do immediately. "The mission" is to rebuild civilization, but that is a large chunk to swallow at one time. Give them a town to work with. Let them reestablish communications in the local area. "Bad guys" (mutants, bandits, whatever) are good for getting their blood flowing. [The guy facing you has his bow drawn, and you hear crossbows cocking behind you. What do you want to do?] Help them to keep busy, and with a sense of purpose. If you are running a late campaign, suggest that they find out what happened to the rest of the Morrow Project. As they do this, they will find that they are fulfilling their mission: rebuilding civilization.

I am through. *The Morrow Project*, as I said, is something a little different on the RPG market. Enjoy yourselves, and may you have a full belt in the 20 mm when you meet your first Blue Undead. [Hey, what's that blue light over there? Why are the CBR's kicking off? I'm going to throw a frag grenade at it. What do you mean it's still coming? My rifle shots don't seem to be doing much? It's between me and the vehicle? It's coming closer? . . .] □

Recon Team Manifest

As *Morrow Project* director, you may be so busy running your players through adventures that, when they finally reach a supply cache known to contain weapons and other goodies, you suddenly realize you haven't had time to think about the cache's contents. To prevent frantic die-rolling and desperate improvisation of supply lists, here is the author's Recon Team Manifest. Standard supply caches are assumed to be prepackaged at the factory, sealed, and placed intact. Some caches may also contain special equipment, but these supplies will always be available. This list is not "official," but offered as a suggested starting point for other GMs. Note that the author tends to equip his teams a little more heavily than is typical.

Item	Total Amount	Cache #	Item	Total Amount	Cache #
Ammo 5.52x45mm.	6 cases	all	M2A1 Detonator	1 case	1
Ammo 5.52x45mm. Linked	6 cases	all	M1 Timer Detonator	2 cases	2, 5
Ammo 7.62x51mm.	6 cases	all	M700 Time Fuse	1 case	4
Ammo 7.62x51mm. Linked	6 cases	all	M7 Blasting Cap	2 cases	3, 6
Ammo 9x19mm.	6 cases	all	M60 Fuse Igniter	1 case	4
Ammo 12.7x99mm. Linked	6 cases	all	Basic Pack	12	all
Ammo 20mm L (combat load)	6 cases	all	Resistweave Coveralls	30	all
Ammo 12-gauge 00 buckshot	12 cases	all	Boots	12 pairs	all
Ammo .30-06 caliber	4 cases	3, 6	KCB-70 Knife/Bayonet	12	all
Ammo .357 magnum	4 cases	2, 5	M17A1 Gas Mask	12	all
Ammo .44 magnum	4 cases	1, 4	M1 CBR kit	18	all
M72A2 LAW	12	all	Cold Kit	12	all
Armbrust 3000	12	all	Mountain Kit	3	1, 3, 5
HP-35 kit (silencer, 3 mags, holster)	6	all	Ration Packs	24	all
Ingram M10 submachine gun, silenced	2	1, 3	Trade Packs	12	all
Uzi No. 2 Mk A submachine gun	2	2, 4	AN/PRC-68 Personal Communicator	12	all
S&W M29-6½ revolver (.44 mag)	2	1, 2	AN/PRC-70 Backpack Communicator	4	2, 3, 4, 5
S&W M27-3½ revolver (.357 mag)	2	5, 6	AN/TVS-5 Electronic Binoculars	2	1, 4
M16A1 with M203 grenade launcher	1	6	AN/PAS-7 Thermal Viewer	2	2, 5
M174E3 grenade launcher	1	5	Magnetic Sensor	2	3, 6
HK69A1 grenade launcher	2	3, 4	CP-7 Binoculars	4	1, 2, 5, 6
M79 grenade launcher	2	1, 2	AN/PPS-05 Portable Radar	2	1, 6
Stoner Weapon Kits (complete)	2	5, 6	Power Supply	2	3, 5
M60 or Mag-58 machine-gun	1	1	Medkit	12	all
M2HB machine-gun (with tripod)	1	4	Large Medkit	6	all
High-Standard M10A shotgun	2	2, 5	Universal Antidote	6	all
Atchisson Assault Shotgun	2	4, 6	Fusion Pack	2	2, 4
Hafra-35 kit	4	1, 2, 5, 6	Generator, Basic (wind, water, fuel)	3	1, 3, 5
M202A1 Flame Weapon kit	1	5	Generator, Multifuel	3	2, 4, 6
M47 Dragon guided missile kit	2	1, 6	Drug Kit	1	4
FIN-92A Stinger guided missile kit	2	3, 4	Surgical Kit	1	4
M122 weapon tripods	2	1, 4	Woodworking Tool Kit	1	5
M9823 Starlight Scope	2	2, 5	Metalworking Tool Kit	1	6
Telescopic Sights	2	3, 6	Salvage Tool Kit	1	1
M26A1 Frag grenades	6 cases	all	(crowbar, shovel, block and tackle, bolt cutters, 50 m. chain, steel cable, pry bar, pick, general tool kit, laser torch, welder's gloves and mask)		
M34 WP grenades	4 cases	2, 3, 4, 5	Chainsaw, multifuel	2	3, 5
AN-M8 HC Smoke grenades	3 cases	1, 3, 5	Nuts and Bolts, 50 kg. assorted	1	6
M6 CN-DM Gas grenades	4 cases	1, 3, 4, 6	Nails, 50 kg. 8-penny	1	5
M7A3 CS Gas grenades	3 cases	2, 4, 6	Heavy-duty sewing machine, electric	2	1, 6
M9A1 BZ Gas grenades	2 cases	2, 5	Pedal sewing machine	4	2, 3, 4, 5
AN-M14 TH3 Thermite grenades	3 cases	1, 2, 3	Multipower loom (steam or electric)	2	3, 6
MK3A2 TNT Explosive grenades	3 cases	4, 5, 6	Bolts of cloth	varies	all
MK1 Flare grenades	3 cases	2, 4, 6	Seed corn	600 kg	all
M381 HE 40mm grenades	6 cases	all	Electronic tool kit	1	2
M433 HEDP 40mm grenades	4 cases	1, 2, 5, 6	Vehicular Parts	varies	1, 3, 6
M651 CS Gas 40mm grenades	6 cases	all	Scratch Plow	2	3, 6
M576E2 MP 40mm grenades	3 cases	2, 3, 4	Gunsmithing Kit	1	3
M583 Flare 40mm grenades	2 cases	1, 6	Metal Stock	varies	6
M585 White 40mm grenades	1 case	2	Alcohol Still (fuel)	1	4
M663 Green 40mm grenades	1 case	3	Civilian Issue Weapon Kits (each weapon comes with 50 rounds)		
M664 Red 40mm grenades	1 case	4	Remington M870 shotgun	12	1, 6
Stunbag 40mm grenades	1 case	5	Remington M1984 lever, .44 mag.	6	4
M25 Antipersonnel mines	2 cases	1, 4	S&W M1500, bolt, 30.06 (3 scopes)	6	3
M16A1 Antipersonnel mines	2 cases	2, 5	S&W M19 6" revolver, .357 mag	24	2, 5
M19 Antitank mines	2 cases	3, 6			
M18A1 Claymore mines	6 cases	all			
M183 Demo Packs	6 cases	all			
Primercord	3 cases	4, 5, 6			

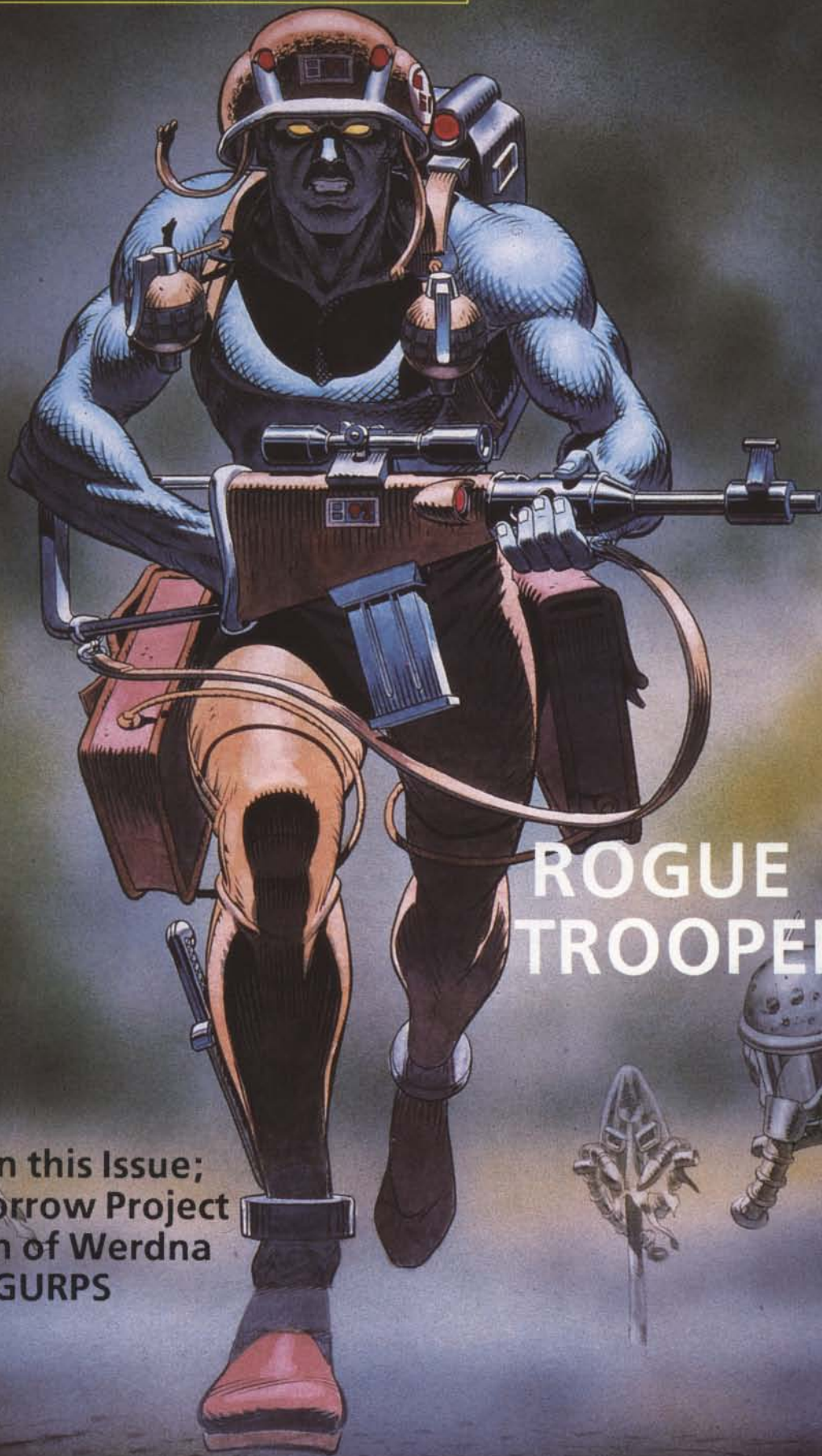
Manifest assumptions:

- Under *Cache #*, "all" means standard equipment in each cache.
- Total Amount* is total amount available to the team. If greater than the number of caches stored in, spread the amount evenly among those caches (for example, both cache 1 and cache 4 would have two cases of .44 mag. ammo).
- When a "kit" is referred to, it is assumed to be a standard *Morrow Project* weapon kit (for instance, an M47 Dragon kit consists of the launcher and three missiles). All kits are taken from the standard *Morrow Project* rules with the exception of the Civilian Issue kits.
- Civilian issue weapons are to be issued for defense to civilians in the team's "base area," if there is one. The E-factors: Remington M870, standard shotgun; M1984 lever action in .44 mag, E-factor=15; M1500 bolt action rifle, E-factor=17; M19 6" barrel revolver; E-factor=10.

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ROGUE TROOPER

Also in this Issue;
The Morrow Project
Return of Werdna
GURPS

After the War, the country had vanished. In all places life continued. On the Range, there were those who wished it hadn't.

Pre-War

The region of Minnesota called the Iron Range, from Duluth to the Canadian border, was rich in iron ore and arable land. The rail and road system centered around Duluth and served to transport grain and ore to the port city on Lake Superior. The area was under-industrialized and under-populated. The Range was heavily hit by the recession of the 1970's and 80's.

Several universities and colleges served the Range. Principal among these was the University of Minnesota - Duluth. This school provided courses in medicine, nursing, agriculture, veterinary medicine, and military science (as part of the Air Force ROTC program).

The War

When the bombs fell, Duluth was preparing for the November storms. Many large vessels were preparing to end the shipping season with one last shipment to the seaway. The berths of the commercial docks were filled and pleasure craft were lining up to be pulled from the water. When the warhead struck Duluth Harbor, the Great Lakes merchant fleet was destroyed.

In addition to the destruction of the ships, a cubic mile of mud was thrown into the air. This rained down on northern Wisconsin and the upper peninsula of Michigan. A tidal wave one hundred meters tall swept through the basin, scouring the flood plain and leaving an eerie, desolate marsh.

Post-War

In the aftermath of the War, one out of every ten people survived.



Slavers' Hold

A Morrow Project Adventure

by D. Patrick Beckfield

Distribution of scarce resources was managed by the officer-candidates from UMD. The best organized areas were under control of the ROTC, who felt it necessary to declare martial law.

At first, the ROTC remained responsible to the chancellor of UMD and to local military authority. In time, however, they realized that they held real power and refused to be controlled. They took control of the resources and materials of survival, and set the stage for the return of a feudal society.

The Team Recon G-23B

Recon Team G-23B was frozen on 8 September 1984. They are one of several teams distributed through the Lake Superior region. The team is aware, however, that assistance from other teams would be as much as a week in coming. The team is not aware of the location of any other Morrow Project unit or the number of units assigned to this area. The team members all trained together, and are familiar with each other and all of their equipment.

The assigned mission of team G-23B is to reconnoiter the Iron Range

and, specifically, the mines around Hibbing and Virginia. The standing orders are to assist the local population in any manner, establish communications with other units of the Morrow Project, and to survive.

The team is not familiar with the area, except from orientation lectures and their maps.

Members of the team were selected for their knowledge of mining operations, agriculture, and soft sciences, such as psychology and history. They were selected for their likely survival in woodlands and in dealings with refugee population.

The team's equipment, weapons, and vehicle are all in perfect condition. When they awaken in the bolt hole, they will find everything they will need for short-term survival. The bolt hole itself is poorly designed as a base. Once opened, the vehicle doors cannot be closed. There is no water or sanitary facilities. It is simply a garage built to withstand a nuclear war.

The team can find additional ammunition and equipment in the supply caches hidden in their area by the project. These caches can be located using the AutoNav, as

described in the Morrow Project manual, TM1-1. If the AutoNav is damaged, these locations will be lost. The AutoNav will not direct them to the cache, but to an item, such as a signpost or historical marker, that conceals a message giving the location.

Terrain and Environment

This region is known for its rugged beauty. The Mesabi Range where the iron is mined continues to Lake Superior. It is not easily crossed without a road. Generally, valleys run east to west, though there are some river valleys that take a course across this terrain. Since the War, the forest has reclaimed the land.

The climate has gotten colder since the War. There are some valleys that have snow on the southern slopes until July. The average high in summer is 70 F. There have been sightings of kodiak and polar bears. In the winter temperatures can drop to -65 F and not rise above zero for weeks. Shelter will be imperative if the team stays for the winter.

People of the Land

In general, the society of the area (Duluth, Virginia, and Hibbing) is identical to the feudal baronies of the Middle Ages. At the bottom of the social structure is the slave. The slave provides energy to do work considered too dangerous for horses or cattle. The slave can expect to be worked until he or she drops, and lacks all rights -- even to food.

Just above the slave is the serf. The only real difference between the two is that a serf is allowed to protest harsh treatment, if he can find someone to listen. Where a slave belongs to an owner, a serf belongs to the land he farms or the craft-shop he operates.

Above the serf is the soldier.

These are the muscle behind the rulers. Soldiers take what they want, as long as their lord does not want it also. Soldiers are usually the task masters for slaves and press-gangs of serfs.

At the top of the social order are the ROTC are Rot-Keys. These are feudal barons who maintain some of the trappings of their more-honorable predecessors. They rise in the ranks through the extinction of their superiors, and assassination is not uncommon among the more power-mad. Not all of the Rot-Keys are corrupt, but the corrupt are in power and more visible.

Virginia

The supplies of raw iron for the Rot-Keys come from the taconite mines near Virginia. Virginia is an almost deserted town. It serves as a garrison for the mines and a supply depot for the soldiers. About 100 soldiers operate out of the town, half to guard the mines, the other half to protect the town and the route to Duluth. The civilian population numbers 700 serfs, craftspeople, and peasants, and 100 slaves in the mines and serving the garrison.

Within the confines of the village can be found the Rot-Key operated store. (Map 1, A) Hard goods, seed, cloth, and similar goods can be bought at artificially inflated prices (Refer to PF-005 for base prices in a barter economy). The store is operated by Hiram Lag. He and his family live across the street in an abandoned dry cleaners. Hiram supports the Rot-Key enthusiastically. He sees them as protectors and as a civilizing influence.

Next to the store is the home/office of "Doc" Ding Westover(C). Westover is little better than a quack. The potions he doles out are little better than swamp water--which is the principal ingredient of most of them. Since he has not harmed the

Rot-Keys, they keep him on to treat minor injuries and run the still.

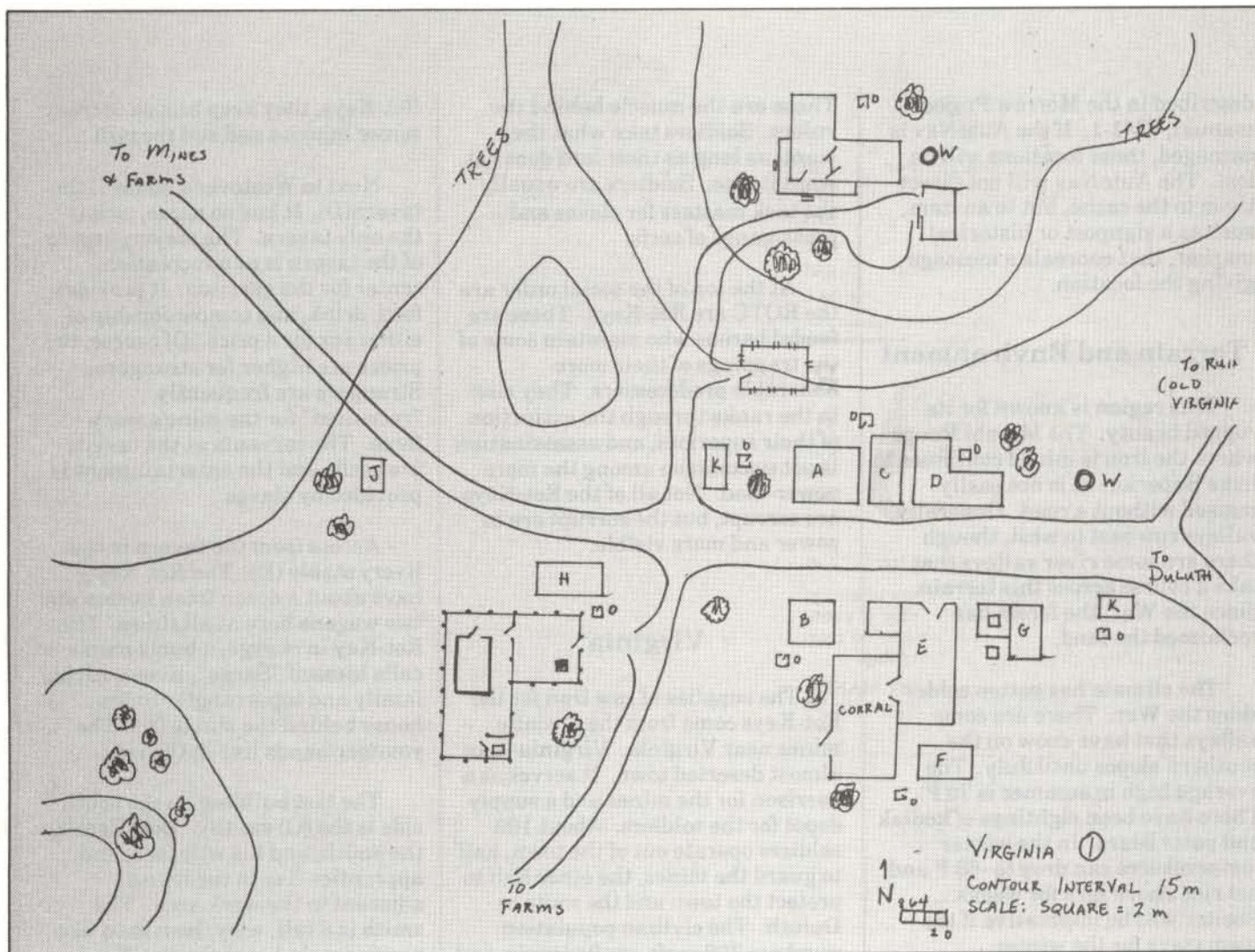
Next to Westover's house is the tavern(D). It has no name, as it is the only tavern. The major purpose of the tavern is as a recreation center for the garrison. It provides food, drink, and companionship of either sex for a price. Of course, the prices are higher for strangers. Strangers are frequently "recruited" for the mine's work force. The servants at the tavern are serfs, and the entertainment is provided by slaves.

Across from the tavern is the livery stable (E). The Rot-Keys have about a dozen fresh horses and two wagons here at all times. The Rot-Key in charge, a burly man who calls himself "Sarge", lives with his family and top wrangler in the house behind the stable (F). The younger hands live in the loft.

The last building on the south side is the (G) smithy. Dorf Escola, the smith, and his wife, son, and apprentice live in the house adjacent to the work area. The smith is a tall, wiry, lean man who passionately hates the Rot-Keys, but is not allowed to leave. When he last tried to escape, the Rot-Keys fractured his skull and broke his leg. His son was taken to Lt. Carter's house and later returned on the edge of a coma. The boy still refuses to describe what happened.

On the west side of the village is the home and stock yard of Davy Lassis, slave trader (H). Auctions are held twice each month in the summer, if hunting is good. Most of his stock goes to the mines, but some are sold to slave trains heading west, or to galleons plying the Lakes. Three former slaves help in the human traffic. Behind the house are the slave pens.

On the road at either end of the village are the guard posts (K). Each is occupied by five soldiers. These are their living quarters, armory, and post. An assortment of firearms and homemade bombs can



be found in the shacks.

North of the town is the house occupied by Lt. Carter (I). It is the largest house in town. Fifteen soldiers and fifty slaves and servants are present to care for the lieutenant and protect her. Any extra personnel are kept in barracks downhill from the house. Animals are kept in the stable and barn, and slaves are locked in the basement when not working.

Two wells provide the drinking water for the town. One is at the east end of the town, the other is at the lieutenant's house (W). Behind or near most dwellings are outhouses (O).

The Mines

To the west of Virginia, approximately 15 km, are the mines

operated by the Rot-Keys. The mines are built in a pre-war open pit mine, and use the high wall created for part of the prison. Surrounding the camp is a wooden palisade four meters high (A) with one opening to allow traffic in and out. A guard in the shack at the gate (B) screens traffic coming in during the day. The gates are closed and barred a few hours after sunset.

Inside the wall there are watch towers (C). The towers are six to eight meters high, except the two on top of the ridge, which are at ground level.

Across the south side of the compound are the living quarters for the soldiers. The buildings in the area are; the barracks (D), housing up to 20 people each; the mess hall (E); the store room (F); and a slave pen (G). The slave pen

holds the servants and "special selections".

North of the mess hall is "the box" (H). This is an iron box half-buried in the ground for disciplining slaves and extremely unruly soldiers. In the sun, the temperature can reach 140 degrees inside, and at night the interior can be covered with frost. Few people have survived more than three days in the box.

The largest building in the compound is the iron works (I). It stands ten meters high, plus the chimney. The southern end of the building is stone and houses the furnace. The remainder of the building is dedicated to separating the iron from the slag and forming it into ingots, bars, and rods. The west face of the building is open on the upper half to allow ore to be dumped

from the mine cars into the hopper that feeds the furnace.

The furnace is fed on wood or coal. (The coal is bought with iron and slaves from traders on the

Lake). Crews must work everyday to keep the furnace going, and the entire complement of the camp must spend two days each month gathering wood. When the furnace is operating the smoke is visible for

four kilometers.

Across the clearing from the ironworks is the armory (J). The main weapons and ammunition supplies are kept here. In this stone walled, earth-reinforced structure will be found: 12 percussion cap rifles, caps, powder, and balls; two S&W M29-61/4 revolvers and 200 rds of ammunition; two Remington Model 870 12 gauge shotguns and 150 shells; and one 3-inch cannon, powder, 15 cannon ball and 20 loads of grape shot. The armory is closed with an iron-banded door, locking from either side. In an emergency, the armory can be used as an "inner fort". Any weapon (except the cannon) can be fired through the ventilation slots at targets in the open in any direction.

To the north of the clearing is the stable. Fifteen horses and three wagons can be kept there comfortably. The trusted slave who cares for the animals sleeps in a room inside the stable.

Directly north of the ironworks is the large slave pen (K). In the summer it is occupied by the eight slaves who work in the foundry and gather wood. In the winter, the entire complement of slaves is housed here. This keeps them warm, and makes guarding them easier.

The western third of the camp is an area called "inside". It is cut off from the rest of the camp by a four-meter tall fence of barbed wire. The only way in or out is through the double gate or on the tracks that lead to the ironworks. The slaves who work the mines are kept inside at all times. The pens inside (L) are surrounded by barbed wire and house 20 people. Near the south fence is the cook shack (N) where two meals are prepared on good days.

The west wall of the camp is the cliff face. Three of the mines (M) open at ground level, and two more



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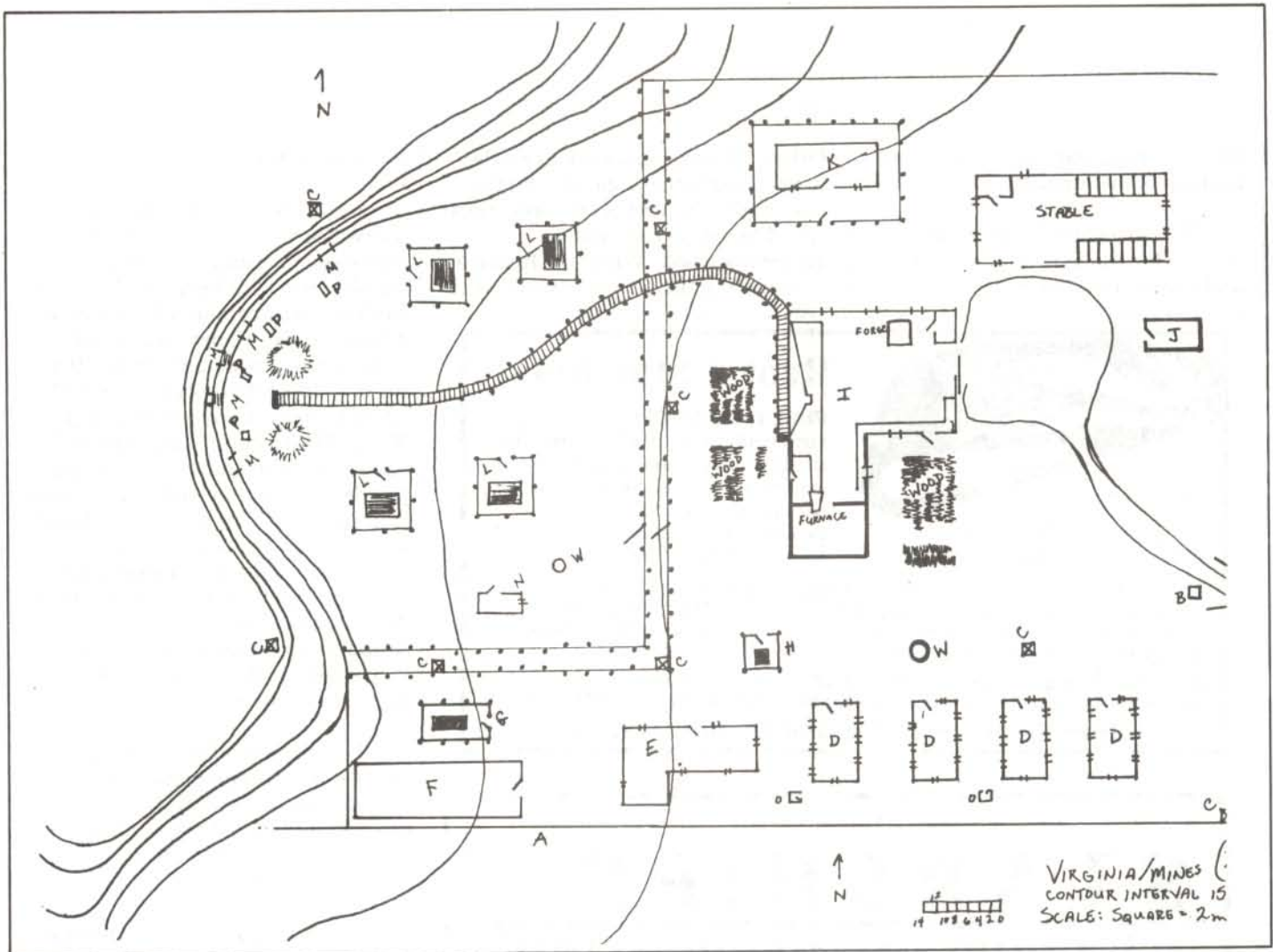
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are 15 meters above. Each mine winds into the mountain for several miles, making it necessary to pump air in from the surface. Eight slaves operate four pumps. Ore is loaded into cars that roll down the track to the ironworks. These cars must be pulled back up the grade with a block and tackle.

Two wells (W) provide water for the camp. One is north of the barracks, the other "inside" by the cook shack.

The Rot-Keys Lt. Alice Carter

Carter is a pale woman, blond with blue eyes, standing one and two-thirds meters tall. There is little charm, or even warmth, in Carter. When she is not nearby, she has been called "the Ice Maiden".

Carter is well trained in close combat. She is always armed with a Mamba automatic pistol and 45 rounds of ammunition, kept carefully dry. A stiletto is hidden in a forearm sheath under her tunic. At all times she carries one or more poisoned hat pins in her clothing.

Carter enjoys testing poisons and methods of spreading poisons. As yet, she has not found a usable nerve gas, but she sends scouts to any reported locations of pre-war equipment.

Sgt. Bo Douglass

Douglass is the son of the previous leader of the Rot-Keys. He suspects that he was killed by Carter's predecessor, but no proof is available. When his father was killed, Douglass was too young to

take his place.

Physically, Douglass is an impressive two and a quarter meters tall. He is muscled to an extent that makes people doubt his intelligence. Douglass has won so many contests that few people will compete against him.

Douglass is a quiet man who knows how to bide his time. He lets people think he is dumb and lets them make the first mistake. His long term goal is to end slaving by the Rot-Keys. His short term objective is to replace Lt. Carter as the administrator of the Virginia mines.

The weapons favored by Douglass are the Remington Model 870 shotgun and a Bowie knife that is as long as his thigh. He has a good feel for tactics and a devotion to the men under his command.

Thomas Arcodopolis Gunsmith

Arcodopolis is a skilled craftsman who is favored by the Rot-Keys. To him, this a great benefit for his goal of loosening the Rot-Keys' grip on the craftsmen. He wants to build a crafthall for wood and metalsmiths. Also, he hopes he can protect his daughter from the troops.

Arcodopolis sees slaves as competition for the workers. It is not good or bad, in fact, he feels it is the best way of using the criminal population. He tries very hard to not be a criminal himself, as the definition changes frequently.

People of the Area

The Rot-Keys and the inhabitants of Virginia are not the

only ones in the area. On the fringes of their control are a number of people that the team might encounter.

Ian Thundereyes

This is an imposing, tall man of Amerindian and European stock. His eyes are a piercing gray color, seemingly carved from the granite cliffs. Under his gaze, a person may feel the need to review his life for some recent transgression.

Thundereyes was on the last Coucil of Elders to meet at the Deer Creek Reservation. There it was decided that the tribe would take up the nomadic life, leaving Thundereyes and some followers and their families to stay and keep the tribal rituals at that place. He has seen the Rot-Keys at work and has no love for them. They, in turn, have tried to capture or kill him and

his followers, but failed. In one instance he seemingly led his people up a flat cliff face to avoid capture, and then returned in the night to spike the Rot-Keys' cannon.

Cora Turner

Turner is a woman running an inn at the edge of the Rot-Keys area of control. She was once considered very beautiful, the only flaw is a scar running from her left ear to her collarbone. Her usual customers look past this easily, as they know she is the best friend they could have.

Turner's inn is the meeting place for the area. She tends the communal still and trades corn liquor and a cooked meal for fresh food, pelts, and trinkets. She is the scribe and witness for the area, being the only literate person outside Virginia for a week long



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hike. Her prized possession is a carefully preserved collection of works by Mark Twain. She will not willingly part with these.

Turner will warn anyone travelling toward Virginia about the Rot-Keys, and will give anyone interested a recount of their activities. She can give an approximation of their equipment and where they were last seen in force.

Dewey Larsen

Larsen is a wandering trader. His pack mule carries an eclectic assortment of trade goods. He proudly claims that he carries the widest assortment of goods this side of the Missus Hip. Among his goods are items of antiquity, such as; batteries, door knobs, glass mugs with the family name on them ("Schmidt"), resistors, and machine screws.

Among his goods is a copy of the **Rand McNally Road Atlas**, 1988 edition. Larsen won't part with this for anything, even though none of the places on it exist as they appear, and he can't grasp the concept of scale or boundaries. If asked, he will claim to have wrested it from the grasp of an evil demon and a varying number of zombies near the blue lake towards the south. When pressed, he will admit winning it from a traveller in a game of chance. The traveller will be described as well kept and very knowledgeable, asking about recent events and people like the team. The stranger disappeared shortly after the game.

The Start of the Scenario

There are three suggested ways of bringing the situation at Virginia to the team's attention. These methods vary, depending on the amount of warning the team is allowed.

The Runaway

In this approach, a runaway slave or a person evading capture runs into the team. The team can then subdue the person, or wonder what's going on as the runaway bolts back out of camp. If the runaway is captured, the team can then hide the person, aiding the escape, attack the pursuing slavers, or turn the captive over to the slavers. The slavers, for their part, will assume that the team is a party of Rot-Keys, as they are known to dress in fatigues similar to the MP issue coveralls.

Refugees

The team can happen on a wagon-load of people trying to evade the Rot-Keys. They will also assume the team are Rot-Keys and, knowing they cannot outrun the vehicle, will prepare to fight for their freedom with desperation. Talking to these people will require great care, as they may not let someone into talking distance.

Chance

The PD may allow the team to enter Virginia without advanced warning of the conditions there. In this approach, the team will undoubtedly be attacked by a sizeable force of slavers. These slavers may not be aware of the firepower of the team and may be driven off. If only one person goes into town, he will probably be lured to the tavern and attacked there. The citizens are not going to help.

New Equipment

What follows is a list of the new equipment used in this scenario.

NAME: 3-inch smooth-bore cannon
E-FACTOR: 45 (ball) or 8 (shot)

WEIGHT: 75 kg
MAX EFF RNG: 150m (ball) or 75m (shot)
MAX RNG: 3000m
TYPE OF FIRE: Single shot
RATE OF FIRE: 2 rpm
FEED DEVICE: Muzzle-loading

ADDITIONAL COMMENTS:

This weapon was the field support artillery of the world of the early 1800's. The gun is mounted on a carriage and towed behind a caisson or two pack animals. Ammunition is of several types: ball, shot, and bursting ball are the most common, though there are others. Ball is a lead ball of the same diameter as the bore. It does damage by pounding its target. Bursting balls are hollow balls containing a charge. This charge is meant to explode the ball and send fragments against the enemy. This is not often perfect; the shell may not shatter at all, but fizzle harmlessly. Shot is a paper-wrapped package of pellets, approximately 1/2 inch in diameter. This ammunition is meant for close-range decimation of enemy soldiers. It is not unlike having a 50-caliber shotgun.

NAME: MAMBA
CAL: 9 x 19mm
E-FACTOR: 9
WEIGHT: 1.05 kg (empty)
MAX EFF RNG: 50m
MAX RNG: 2012m
TYPE OF FIRE: Semi-automatic
RATE OF FIRE: 45 rpm
FEED DEVICE: 15 rnd box magazine

ADDITIONAL COMMENTS:

This is an all stainless steel pistol developed by South Africa and Rhodesia. Its large magazine and ambidextrous design make this an excellent combat weapon. Stainless steel was used to compensate for the jungle environment.

"Let'er Rip!"

Krell Heavy Weapons

in

The Morrow Project

by
Joseph Benedetto, Jr.



One of the problems the Warriors of Krell face is a shortage of heavy weapons. They do have some captured Morrow Project weapons, but the majority of these

are low on ammunition, and supplies are not as plentiful as Krell would like, one of the big reasons Krell's forces are striking out to locate and capture MP caches, bases, and boltholes in a search for more supplies.

Right after The War, Krell captured a number of National Guard Armories and US Army Reserve Centers and Supply Depots. This was often easier than it sounds, as many such installations were understrength during the chaos following The End of the World. Thus, Krell's forces obtained large stocks of rifles and small arms, along with a good supply of "obsolete" and "Removed from Service" weapons, such as recoilless rifles and bazookas. With these weapons, Krell led his campaign against the Morrow Project; they supplied his army until several MP caches and bases fell into Krell hands.

A number of these weapons are still around; the present push by Krell's forces has led to some heavy fighting, particularly between his advance patrols and a few, scattered Morrow Project teams (see Project File R-003, **Operation Lucifer**, for more details).

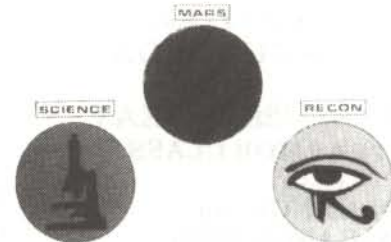
Although most of the Krell small arms are common and have been described in the MPGB or the modules, the non-MP heavy weapons have not been covered; the



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following charts show the stats of several typical Krell weapons, and their current disposition.

KRELL HEAVY WEAPONS

M20 3.5" Bazooka

CAL. 88.9mm

WT. 4 kg

MIN. RANGE 5m

EFF. RANGE 275m

MAX. RANGE 945m

BURST RADIUS 10m

Introduced in 1950, the M20 Bazooka was eventually replaced by the M72A2 LAW rocket. The M20 fires an 88.9mm rocket projectile with a shaped-charge warhead, and has a highly prominent and very visible backblast (over 30m), and cannot be fired from enclosed areas. About effective as the M72A2 LAW, the M20 has a somewhat shorter range, but can also engage targets at much shorter ranges than the LAW can; the LAW cannot engage targets closer than 50m, while the bazooka can fire at ranges as short as 5m. NOTE: due to the age of the equipment, there is a flat 10% chance that a round will not launch when fired.

In Krell service, one man carries the bazooka and one round of ammo, and a second man (the loader) carries another 6 rounds of ammo, and loads the weapon in combat.

M20 BAZOOKA AMMUNITION

88.9mm M28A2 HEAT ANTI-ARMOR CLASS D

WT. 4.08 kg
MIN. RANGE 5m
EFF. RANGE 275m
MAX. RANGE 945m
E-FACTOR 1010
DPW 520
BURST RADIUS 10m

Armor Piercing round; impact scatters fragments (E-factor 4) across the burst radius.

88.9mm M30 WP (White Phosphorus)

WT. 4.06 kg
MIN. RANGE 5m
EFF. RANGE 275m
MAX. RANGE 945m
BURST RADIUS 20m
BURN TIME 120 seconds at 2700
C

The bazooka is usually assigned to a 6 man team: Gunner, Loader, and 4 infantrymen to provide covering fire. Bazooka teams are found in, or just behind, the vanguard of the Krell Army.

M18 57mm RECOILESS RIFLE

CAL. 57mm
WT. 21 kg
MIN. RANGE 10m
EFF. RANGE 450m
MAX. RANGE 4438m
BURST RADIUS 10m

This Recoiless Rifle (RR) can be fired from the shoulder, bazooka-style, or its built-in tripod can be set up for firing on the ground. The weapon is recoilless, and has an excessive backblast--50m long and 25m wide--which prevents it from being fired in an enclosed area. The weapon can fire any one of 4 types of ammunition: HE, HEAT, WP, and

CANNISTER.

The 57mm RR is usually assigned to a 6 man team: Gunner, Loader, and four infantrymen for cover, the loader usually carries a box containing 2 cases (8 rounds) of mixed types; often the emphasis is on the T25E5 Cannister (shotgun) round.

The 57mm RR is the most common heavy weapon found in the Krell advance forces, followed by the bazooka. The larger 106mm RR is not usually seen except on special occasions.

M18 RECOILESS RIFLE AMMUNITION

57mm M306A1 HE (Fragmentation Warhead)

ANTI-ARMOR CLASS F
WT. 2.477 kg
MIN. RANGE 10m
EFF. RANGE 450m
MAX. RANGE 4429m
E-FACTOR 5
Dpw 409
BURST RADIUS 24m

57mm M307A1 HEAT ANTI-ARMOR CLASS E

WT. 2.463 kg
MIN. RANGE 10m
EFF. RANGE 450m
MAX. RANGE 4338m
E-FACTOR 240
Dpw 425
BURST RADIUS 10m

57mm M308A1 WP (White Phosphorus)

WT. 2.463 kg
MIN. RANGE 10m
EFF. RANGE 450m
MAX. RANGE 4129m
BURST RADIUS 17m
BURN TIME 30 seconds at 2700 C

57mm T25E5 CANNISTER ("shotgun" round)

WT. 2.463 kg
MIN. RANGE 0m

EFF. RANGE 175m
MAX. RANGE 175m
E-FACTOR 6 per slug
BURST RADIUS 5x25m cone

Because of the wide variety of ammo available, and the fact that one man can transport it, the 57mm RR is one of the favored Infantry Heavy Weapons of the Krell forces. However, due to the smaller, spin-stabilized HEAT round, the 57mm RR is not as effective an anti-tank weapon as the M20 bazooka, which often follows the M18 teams into combat as backup fire.

M40A2 106mm RECOILESS RIFLE

CAL. 106mm
WT. 115.6 kg
MIN. RANGE 50m
EFF. RANGE 1100m
MAX. RANGE 7700m
BURST RADIUS 20m

This was the heavy anti-tank weapon of the US forces until replaced by the TOW missile system. Due to the size and weight of the weapon, it is usually mounted on a jeep or other vehicle to provide mobility under fire. A number of these weapons in Krell service have been equipped with an AC-20 splinter shield to protect the crew when under fire. The weapon is quite effective, and is occasionally used as an artillery piece in the field; it fires three types of ammo: HEAT, HEP, or APERS.

Because of the size, and the effectiveness of the weapon, the majority of these have been installed in ground defenses around the captured Morrow Project base where Krell habitually goes into hibernation. The remainder of these weapons are mobile, but are held in reserve until definitely needed.

M40A2 RECOILESS RIFLE AMMUNITION 106mm M344A1 HEAT

ANTI-ARMOR CLASS C
 WT. 16.887 kg
 MIN. RANGE 50m
 EFF. RANGE 1100m
 MAX. RANGE 7700m
 E-FACTOR 1100
 Dpw 2925
 BURST RADIUS 20m

106mm M346A1 HEP
ANTI-ARMOR CLASS D
 WT. 17.237 kg
 MIN. RANGE 50m
 EFF. RANGE 1100m
 MAX. RANGE 7700m
 E-FACTOR 1000
 Dpw 8069
 BURST RADIUS 14m

Although an effective round, the HEP round must hit exposed armor plate to inflict damage. Hitting spaced armor, or hitting objects on the hull (racks, cargo, etc.) will detonate the round without causing any internal damage.

106mm XM581 APERS (Antipersonnel)

WT. 18.597 kg
 MIN. RANGE 3m
 EFF. RANGE 3300m
 MAX. RANGE 3300m
 E-FACTOR 6 per flechette (1d100 hits)
 BURST RADIUS 400x130m cone
 FUSE DELAY adjustable by distance

This is a "beehive" round, packed with flechettes (giant needles). Targets caught within the blast radius of the round must roll for 1d100 hits (use the whole body damage tables for the death%). This round is accurate out to over 3 kilometers, and can literally shred personnel in the open. Against targets wearing body armor (ie, MP teams), take 10% of the individual's hits as having hit exposed flesh--head, hands, etc. Note that the flechettes will not penetrate the MP issue Resistweave coveralls, but will end up stuck in the weave. (In

other words, MP players will end up looking like porcupines.) This round is a favorite of the Krell gunners.

The 106's are never encountered in the forward part of the army, but are held in reserve. Except when dealing with known MP units or other troubles, 106's in the field have relatively little ammunition handy. (This is not the case back at the Krell base, however).

KRELL 20mm ANTI-TANK RIFLE

CAL, 20mm
 WT. 26.5 kg
 MIN. RANGE 11m
 EFF. RANGE 1500m
 MAX. RANGE 7000m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 10 rpm
 FEED DEVICE 10 rd magazine

Although Krell has captured a large number of MP caches and boltholes, most MP vehicles were incapacitated or destroyed: the number of 20mm rounds taken far exceeds the number of 20mm autocannons available. For this reason, Krell has equipped his forces with a modern version of the old, WWII 20mm AT rifle. This Krell weapon is semiautomatic, and can be carried and used by one man. For this reason, 20mm AT rifles make up a large portion of the Krell Army, providing heavy individual firepower against a wide variety of targets. Indeed, the weapon is occasionally used like a regular rifle against exposed personnel. A number of these guns have been mounted on light vehicles and provided with 25 rd magazines.

**KRELL 20mm AT RIFLE
 AMMUNITION
 (CAPTURED MP ISSUE)**
20mm M56A1 HEI
ANTI-ARMOR CLASS F
 WT. .254 kg

MIN. RANGE 11m
 EFF. RANGE 1500m
 MAX. RANGE 7000m
 E-FACTOR 57
 Dpw 11
 BURST RADIUS 1m

20mm T221E3 API
ANTI-ARMOR CLASS E
 WT. .254 kg
 MIN. RANGE 11m
 EFF. RANGE 1500M
 MAX. RANGE 7000M
 E-FACTOR 63
 BURST RADIUS .5m

The API round does not contain any explosives; it is a solid slug of hardened steel. Note that both rounds have a Tracer base, and will set fire to any combustible objects they hit.

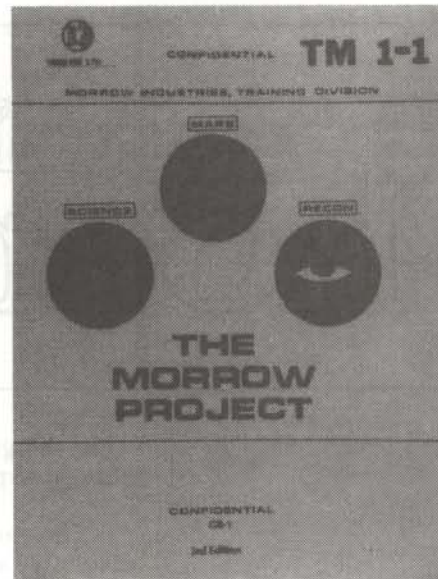
SPECIAL NOTES: These weapons represent the typical, non-MP firepower that Krell possesses. However, with the exception of the 20mm AT rifles, these weapons do not have a large amount of ammunition available; Krell forces will try not to waste any of it. Also, the weapons themselves are not too common: the larger the caliber, the less chance there is of encountering it in the field.

Interspersed with the older weapons are the more modern weapons of the US Army, and captured MP weapons and gear. Remember that there just is not enough of it to go around in strength yet, so Krell's army is underpowered. However, Quantity, not Quality, is still often the deciding factor in combat; the massed, human-waves attacks can overrun a well-armed MP team. After all, 100 men with rifles and clubs can overwhelm a 5 man team, despite high-tech gear, showy firepower and cocksuredness.

So, the Krell forces are still very deadly; underestimating them can be a fatal mistake, as many teams already knows.

COMPUTERS IN THE MORROW PROJECT

By Paul Worzel



COMPUTERS IN THE MORROW PROJECT

(We at TimeLine are often criticized for our slowness of production. Partially this slowness is due to our extensive playtesting — we don't playtest a module just once. Partially it is due to the size of our modules — they are longer and contain more information than most other modules on the market today. But mostly it is due to the extensive research we do whenever we write something.

*In the case of our latest module, **Prime Base**, there was extensive research into equipment, design, climate, ecology, geology, group planning and dynamics, psychology, closed environment systems, etc., etc. And we always make sure that the stuff we publish makes sense. We create a history, a detailed description of how things came about, how they work or were supposed to work and what actually happened. In this way we have managed to create a world for *The Morrow Project* which is consistent and believable. Likewise our time travel role-playing game, *Time & Time Again* exists in a world which could grow out of our own.*

While it is not necessary to do all of this work, we believe that it produces a higher quality product; one which we are proud to sign our names to and put our logo on.

*The following is a description of the Morrow Project Vehicular computer and the remote computer network MORONET along with rules for role-playing computer programming. This is material which was created early on in the writing of *Prime Base* but because it is of general interest, we decided to publish it here for gamemasters and teams who are not yet ready to take on the challenge of *Prime Base*.)*

The Standard Morrow Project Vehicular Computer

Most Morrow project vehicles have an onboard vehicular computer. The main function of this computer is to provide a sort of portable reference library.

The computer itself is *not* based on ultrahigh technology as equipment which is at the leading edge of technology generally will not survive in the field. As a result the Morrow Project planners used "old-fashioned" but well tested computer equipment. MP vehicles use technology which was current in the early-1980's (that being the date of the last, countrywide Morrow Project equipment update). The main microprocessor chip in all Morrow Project vehicular computers was the Zilog Z-8000.

These chips were used in the cruise missile program so they had been carefully tested in the most difficult of situations. The Morrow planners knew they would not give out in most situations. (A direct hit on the computer is *not* a reasonable situation. The normal wear and tear of being in a vehicle is reasonable and was planned for.)

The computer was given what was a large amount of memory for the time, 256 kilobytes. Theoretically all of this space was available for the Team to use. However, to make use of it the Team will have to do one of two things: they will need to write

their own programs or they will have to use available "canned" programs. In both cases some portion of the available memory will be used to run the program.

The computer had neither floppy disks nor Winchester disks as both were too sensitive to motion and dirt. Instead, Morrow Industries developed a special high speed, high density tape system which was better than anything available on the commercial market. While it was expensive to do this, it provided a durable auxiliary storage system for the MPV computer. Each tape is 5 inches wide, 4 inches tall and 1/2 an inch deep. They looked a lot like oversized, heavy-duty cassette tapes.

Each computer is supplied with a "library" of canned programs and information that the Team may find useful as well as a number of blank tapes which the Team can use to write programs and store information. However, the tape system is somewhat slow, and storage is limited to 256 kilobytes per tape.

In general, each vehicle had ten tapes for the computer. Every vehicle which had a computer had two tapes of canned programs available for use with the onboard computer and four tapes with data used by the canned programs. In addition, there were two tapes of utilities used for programming the computer. This left two blank tapes for the Team's use.

The following is a list of programs available for a standard MPV:

- UNIX-like Operating System
- Word Processor
- Spreadsheet
- Graphing Program
- Database Program (and Database Conversion Program)
- Programming Languages:
 - FORTRAN
 - 'C'
 - PASCAL

The following information is available for standard MPV (unless otherwise noted, the information is accessed by using the canned Word Processor program):

- Local Almanac
- Standard Issue MP Equipment Reference Manuals

Each of these information files has a complete Table of Contents and Index file associated with them. By accessing them through the Word Processor, the Team can update the information. By use of the Database Conversion Program the Team can convert these files to a form that the Database program can use in order to allow electronic information search and retrieval. However, if this is done the database cannot be edited using the Word Processor. The first time the database is set up, the Team must "program" it either by using their programming skill to design their own database structure, or by a standard conversion which essentially uses the Table of Contents and the Index as the basis for an electronic lookup system.

The information in these files is dated 1980 or earlier. The almanac is roughly the equivalent of what you might find in an ordinary printed almanac (in other words, raw statistics and facts with no "speculative" information, typical would be population, town and city information, climate data, etc.).

The Morrow Project Equipment Reference Manuals are what they say: reference manuals for MP equipment available to the Team. These are not how-to-use/do-it manuals. They assume you know the basics of the equipment. Instead, they have details which would only be useful to an experienced operator performing maintenance and repair on the equipment.

Operating The Vehicular Computer

To use the MPV computer, you must turn the computer on and insert an MPID into a slot below the computer screen. The system will check to see whether the correct program tape is inserted. If it is not, the message: **INSERT OPERATING SYSTEM MASTER TAPE** will appear on the computer screen. Inserting a tape is very much like putting a tape into a cassette player: you simply push the "Eject" button to open the tape drive, insert the cassette and manually close the drive.

Once the tape is inserted, or if it was in place before the computer was turned on, the system will bring up a list of canned programs with a number to the left of each entry. The user can choose from this list by entering the appropriate number on the keyboard. The computer will then load this program into memory and start it up.

Once the program in question is loaded, you can put in one of the information tapes in place of the program tape. Again, a list of files which are usable by the program will appear on the screen with a number beside each one. Punching the appropriate number will open this file for use by the program and the appropriate information will appear on the screen.

When you are finished with the computer, you simply type **QUIT**, eject the tape and shut the system off. If you have made any changes to the information, after you type **QUIT** the system will ask if you want to save the information. Typing **SAVE** will save all changes, typing **CLEAR** will close the file without saving the information. Typically saving the information will take several minutes, no matter how small the changes were.

Programming Morrow Project Computers

While all MP personnel are trained to use the canned programs and files, no one who has not had some experience programming the MPV computers can expect to program them successfully. All MP personnel who have Computer Science as a degree skill (see **The Morrow Project Role Playing Expansion** available in the 3rd Edition MPGB and the supplement GA-2 **Personal and Vehicular Basic Loads**) will have been given training in programming the MPV computer.

This does *not* mean they can automatically create working programs, even with a successful skill roll. As anyone who has tried to write a program knows, creating a working program is a long, difficult process.

Roughly speaking, most programs have the following stages of creation:

- Conception
- Specification
- Design
- Programming
- Debugging
- Documentation

To create a successful program, a character should roll for each of these steps. They *cannot* go on to the next until they have successfully completed the step they are working on.

In addition, debugging a program has two distinct phases: getting the program to compile (i.e., making sure the computer has been given a set of acceptable instructions) and making sure that what you have told the computer to do is what you *really* want it to do! Both of these must be rolled for separately. If the attempted roll for making sure it does what you want it to do fails and is over 95% (i.e., the roll was badly blown), then the approach taken is completely wrong and the programmer must go back to the design stage and try again.

P.D. NOTE: The amount of time which must be spent on each step depends on the difficulty of the program being attempted. The P.D. must attempt to estimate the difficulty and assign a time factor for each step. In general, it is more accurate for it to take more time than less. A simple program will take at least a day per step. A moderate one, a week per step. An exceedingly difficult one can easily take six months per step. As a good rule

of thumb, the more it takes for the player to explain the program so that everyone understands what it will do, the longer it will take to create.

The steps listed above are not all strictly necessary. In particular, the specification, design and documentation steps can be omitted. However, if this is done, the following restrictions apply:

1. Programmers who omit the specification or design stages must make an additional roll in each subsequent stage for each of the steps omitted. If they fail, then they have either failed to produce what was desired or they have worked with a faulty design and must either go back to the appropriate step and try again, or may try again with the same restriction.

2. Programmers who omit the documentation stage but successfully finish the debugging step have a complete program which only they can use. They can personally train others in its use, but to do this they must successfully roll their Computer Science skill on a D100. However, if the program created is not documented, then the programmer will be in danger of forgetting how it works. In this case the programmer must make a roll equal to his Computer Science skill less 5% for each month since he last used it. Likewise, if the program is not documented, then the programmer will be less likely to be able to remember how it works and if he wants to change it, he must roll his Computer Science skill less 10% for each month since he last worked on it to see if he remembers how it was designed.

Example: Peter Programmer decides he wants to write a program which will search through the MP Equipment Files and create a cross-reference list (i.e., what equipment is referenced in each section). Peter further decides that since he has a 70% skill level, he can skip the design and documentation stages.

The Project Director decides the task is medium difficult and thus determines that Peter needs a week per step. Making separate rolls of 27 and 65 for the conception and specification steps, Peter has taken two weeks to get to the programming stage. He writes his program successfully with a roll of 43 and compiles it with a roll of 56. At this point he has spent four weeks on the project. However, at the end of the 5th week, while in the second debugging phase, he rolls an 85 and realizes that his way just won't work.

He now has the option of trying to redesign on the spot, or returning to the design stage and going from there. Peter decides not to try any more shortcuts, returns to the design stage and through diligent work, has a working program in 5 more weeks. Being by this time very tired of this program, he does not document it and three months later, he must roll a 55 or less to remember how it works so that he can explain its use to Joe Recon.

To change the program he will need to roll a 40 or less before he remembers what he was trying to do and then he must go through the same six steps to revise the program.

P.D. Note: The above rules apply to programming all of the standard computers at Prime Base. However, there is an initial learning period of about a month before a character with a computer science degree skill would be familiar enough with a specific system to begin to program it. In the case of some of the unusual systems within the

Base, no one would be able use them unless they had a lot of time to work on the problem (about a year) and they had the documentation available.

The Morrow Online Network (MORONET)

Communications between Morrow teams was considered vital by the Morrow Project planners. The MORONET system was designed to be a flexible remote network of variable bandwidth. This would allow a variable number of Morrow vehicles to communicate differing amounts of information both with Prime Base and with other Morrow teams via the MPV onboard computer.

The key to this computer network is the communications links between Prime Base and the rest of the country (and the rest of the world). Prime Base has the computer capacity to receive and handle up to 10,000 real-time requests simultaneously. The limiting factors in the network are the number of communications links, the amount of information which can be transferred over these links and, most importantly, the technical know-how to build and maintain the communications equipment.

The initial communication with Morrow Project teams would be by radio. No computer linkups were anticipated at this stage of the Project.

The communication satellite described in PF-06 **Operation Lonestar** would be the first high volume datalink to the Morrow team in the field. Once this was established, either from the Johnson Space Center or from one of the backup sites, the Project teams would be able to access the databases and computers of Prime Base but without the ability for high volume, high speed transfers typical of fullblown computer networks.

As pre-War equipment was salvaged and repaired, microwave relay stations were expected to be put back in working order by the Teams. These would provide the first high volume information links to Prime Base as they extended back to the Prime Base area and this would allow MORONET to begin operation in its true capacity. The areas serviced by MORONET would be strictly limited to those areas where microwave links were complete through to Prime Base. In addition, because of the high precision needed for such transmissions, only vehicles tied into a resupply base could make full use of the information available at Prime Base and only after the communications link was established.

The final level of communication envisioned by MORONET was planned after coast-to-coast phone communications were reestablished. It was estimated by the Morrow planners that this stage would be reached approximately 15-20 years after the War. However, because of the destruction of Prime Base, neither the communications lines nor (more importantly) the expertise to get them up and running still exist. As a result, it is not likely that this level of communications will be reached in less than 50 years after the reconstruction of Prime Base.

Once reached, this final level allows complete computer networking along with videotext and television transmission for those stations able to make use of them. The computer link provides direct access to Morrow datafiles, including pictures, audio recordings and an interactive communication network with other network members which allows the direct exchange of large volumes of information.

FRANK CHADWICK'S...



Also: Project File: Discovery (Morrow Project), Slow Train Coming (Invasion U.S.),
Gloranthan Metals, Eeffug The Giant, and The Giant Squid (Runequest),
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Project File: Discovery

A mini-adventure for
THE MORROW PROJECT

by Joseph Benedetto, Jr.

McWilliams was the first on his feet, stepping slowly from the hibernation tube that had been his home for untold years. The bright glare of the bolt hole lights made his eyes water; he glanced around the small concrete room. They were alone. He turned to the computer that monitored them all this time: Red lights.

"Hey John!" It was Lynn, their communications specialist. "Where is everybody?"

"Red Light on the radio link. Guess Prime Base felt we should be awake." He wiped his eyes and sighed. "Back-up plans must be in effect. I don't even want to think why." He then noticed the pile of crates stacked in the far corner of the room. "What the hell is all that stuff?"

"It's got our code stencilled on it: 'FW-11(S)'. Must be for us." Lynn tried to move one of the boxes and then saw the heavy electrical cable running out of it, right over to the bolt hole computer. "Sweet Momma, what is this stuff for?" She looked around and found a packet on the top of a large plastic drum. "Maybe this is the manifest." She tossed it to McWilliams. "You should get a kick out of this. I'm going to call Prime Base and find out what the emergency is."

It took McWilliams, with the help of Powers and Jones, 10 minutes to locate each crate on the list, they had been packed too tightly into the underground bunker. The rest of the team had fitted up their packs by the time Jones found the last item, an AN/PRC-70 backpack radio.

"Probably be useless," Lynn said as she stepped over from the computer. "Prime Base isn't responding, despite having sent the recall code." She shoved a piece of paper at them. "Code designation matches for Prime Base. But I can't raise them. *Or U.S. Gov., or any civilian operators, HAM sets, or anything.*" She bit her lower lip nervously. "I don't like this, John."

"Yeah...well, we can't stay buried forever." He opened the #1 locker and broke out the escape tools, tossing a shovel to Powers and another to Peterson, the RTO with the MARS patch. "Primary Exit Hatch. Let's do it."

PROJECT FILE: DISCOVERY is a mini-adventure for a six-man team; MP Unit FW-11(S); who are just awakening to a world not of their making.

During the early years of the Project, some of the designers on the Council of Tomorrow foresaw

one problem the Project would have to face: People have a tendency to die. MP teams in the field might not be able to cross hundreds of miles of harsh terrain to reach a permanent depot/base to get replacements for their decimated ranks.

The FW, or "Frozen Watch," Teams were designed to fulfill that need: Small, lightly equipped groups scattered around the country, who would wait out The War and the main awakenings; sleeping on until MP teams who needed replacements came along and revived them. Special volunteers were recruited from all ranks and branches of the Project and placed in FW Teams, their diversity ensuring a higher probability of fulfilling just about *any* teams needs. They came from RECON, MARS, Science, Service & Support: At least one member of each team was a Medic, but after that anything was good.

Due to their nature, the FW Teams were designed to operate *light*. It was assumed that another, already-awake team would call the FW Team up, and thus equip them with such items as weaponry, vehicles, etc. The FW Teams are all equipped with Basic Packs, but are not given any weapons; neither do they have their own resupply caches. All members of the team are aware of these facts.

As a last-ditch contingency plan, it is possible for the FW Teams to be awakened by a remote radio signal from Prime Base; normally, a team would just arrive on site and dig them up. To cover the contingency plan, emergency weapons are provided for the team (in locker #3) in the bolt hole.

THE BOLT HOLE

The players are in a much smaller version of the standard storage and freezing facility used by the MP. This one contains the team's freeze tubes and equipment lockers. Because it was expected that the team would remain in hibernation until another team dug them up, there is no periscope package in the FW hole.

There are only two exits: A personnel exit normally used for egress, and a back up emergency exit cofferdammed with sand to make it extremely hard to collapse or destroy. Both are designed to be blastproof and hard to detect by casual outside observation. The emergency exit must be cleared of sand before it can be used; the tools to do this are in Locker #1. Both exits rise vertically to within about 3 or more feet of the surface; this earth cover must be removed before breaking into the open air. Again, all members of the team are aware of these facts.

NORMAL PROCEDURES

Normally, the FW teams would lie dormant until an awake team needed personnel; this team would look through their AutoNav computer until they found a file noting the location of an "abandoned ash pit;" this was the cover story for the hidden replacement teams. Morrow Industries' engineers actually put a fake ash pit, filled the waste slurry, at the spot to mark it. The needy team would arrive, locate the entrance, and dig up the sleeping team. As can be seen in this scenario, this does not always happen as planned.

As far as orders go, the FW teams have none. In emergencies, they have to fall back on the MP Standard General Orders:

1. **Do everything possible to help the people.**
2. **Regroup with the rest of the Project & contact Prime Base.**
3. **Try to stay alive.**

It is important to note that the personal safety of the team comes THIRD on the list of concerns for the PC's! The PD may wish to note this to the players when they starting out.

WHAT THEY DON'T KNOW WON'T HURT THEM

Frozen Watch Team FW-11(S) was frozen on 26 August 1987. They have no knowledge of the local area, nor of the location of any other MP team or facility. Their assigned mission is to wait in hibernation until another team arrives and calls them up. They have no equipment or supplies other than their Basic Packs and what equipment they can scavenge from the lockers in their bolt hole. They have no supply caches. The team members all trained together and are familiar with each other and all standard MP equipment.

Their bolt hole (so the team surmises) is simply a buried concrete box designed to shelter them during hibernation; they are supposed to abandon it after coming out of cold sleep.

In truth, this is not the case with Team FW-11(S). One of the members of the Council of Tomorrow thought that the Project should provide for certain emergencies, and push for the construction of Emergency Shelters in remote areas of the country - each shelter being a simple concrete shed with a basement, and beneath that a small MP cache of emergency supplies (tools, food, water, and power). A small number of these shelters were actually built before the War broke out. In the case of Team FW-11(S), however, they went a step further: They decided at the last moment that it would be a better idea to place a FW Team in the space beneath the basement of a shelter, so that a team looking for them would find not only the FW Team but also a shelter as well. This combination of FW Team & Shelter was not standard; more like an experiment undertaken during construction (hence the "(S)" or Special designation in the team's code assignment).

Basically, there is the team's bolt hole; above that is the shed basement, then the shed itself. (See FLOORPLANS #1 and #2 for layout details.) Since this was a last minute idea, the gear for the shelter cache

was simply crammed into the bolt hole with the players! It was decided to fill in the basement to disguise the entrance to the bolt hole; in practice, it is assumed that the team will remove all of the dirt and use the area as a *basement*, with the bolt hole beneath it becoming a *sub-basement*.

THE PLOT

When the players finally go up the Personnel Exit and break through into the air, they will actually be in the 3' high "crawl-space" under the floor of the shed. It is pitch black, cold (45 degrees), and very windy. It *sounds* as if there is a thunderstorm nearby, but nothing can be seen. (The PD should play this strangeness up until the players either stand up or turn on a flashlight!) Also, they will hear some people moving about overhead - plus loud shouts, drunken cries, and the occasional scream of terror. If the team is even halfway bright, they will realize that something is going down upstairs, and it is not good.

Looking around the crawl-space with a flashlight will show few details: There are a few vent holes in the wall letting in the wind; there is only one exit from this place, and it seems to be a steel manhole cover opening right into the noise going on overhead. In the off chance that anyone wants to dig around the crawl-space, they will waste lots of time and effort to discover the following facts: The crawl-space is actually a basement under the shed, and it has (had) a 7' ceiling, meaning that there is a layer of dirt here 4' thick...around 3000 cubic feet of dirt, and there is no real place to put it.

A better choice might be to retreat and try the emergency exit, although removing all that sand will take some time. However, the emergency exit comes up *outside* the shelter and can be useful in planning an attack (see FLOORPLAN #2 for details on location). Of course, teams are likely to try almost anything before thinking of the logical approach; it seems to be a hallmark of many players.

Attempts to *quietly* lift the manhole cover and peek around are best determined by the PD and how the players act.

THE ACTION

The shed has been temporarily occupied by Badges (see the MPGB, p. 50). They jumped a passing wagon earlier today and are busy enjoying the spoils they have captured, which include and women. 2 hours of the Badges' "attention" have left the 4 women captives in very bad shape. The Badges, having tired of them, are busy torturing their 'guests'. These people *definitely* need the intervention of the players.

As can be seen from the floorplans, the shed has one large doorway (to admit MP vehicles like the V-150) and 2 small windows, as well as a loft. 2 of the women are on the main floor, 1 is under the loft (near the doorway) and the last is in the loft. All are bound and have at least 1 Badge with them. There are a total of 9 Badges here, scattered around the shed; 1 is actually on the roof during the rainstorm. She wasn't having any fun, so they sent her to the roof to keep watch. This not too bad, since there is another band of Badges in the area, and they are expected to be by sometime during the night.

The window shutters and steel doors to the shelter rusted away years ago; the wind is blowing on in, and the crash of thunder and the darkness makes it easy for the players to figure a way to make their rescue. In this kind of weather, a successful MOVE SILENTLY roll can do wonders!

All of the Badges have weapons, although only 1 or 2 have their rifles/shotguns close at hand; the others are likely (65%) to have a pistol or revolver on them at all times. The girl on the roof has a shotgun with slug rounds, as well as a S&W M29. None of the Badges has any form of Body Armor.

The obvious matter is for the players to figure a way out of their bolt hole, and then figure out a plan to rescue the hostages; this may be difficult for a team

bottlenecked beneath the manhole cover. And assuming they pull this off successfully, they will have to deal with the immediate situation of the hostages they have freed: They need medical attention and shelter; it's 45 degrees inside *and* out, in the middle of a storm, and there is no telling if there are more of these Badge scum out there in the forest somewhere. Trying to make a stand in a concrete box in the middle of a dark and stormy night with wounded civilians who are in no shape to move is not exactly a great tactical exercise, although the players are about to try it one for size.

FROZEN WATCH BASIC LOAD (INDIVIDUAL) STANDARD ISSUE Wt. 18.69kg

1 pr Coveralls (AC = 7)
 1 pr Boots (AC = 4)
 1 Green Beret
 1 Pocket Knife w/2 blades, can & bottle opener and screwdriver
 1 M1 CBR kit w/6 gas antidote loads
 1 AN/PRC-68 Personal Communicator w/scrambler
 1 Medkit
 1 KCB-70 Knife/Bayonet
 1 M17A1 Protective Mask
 1 Morrow Project ID Card

1 Basic Pack containing:
 1 1 Liter canteen w/cup
 1 5 Liter folding canteen
 3 Boxes matches (50 per box)
 1 Generator Flashlight
 1 Weapons cleaning kit
 1 pr Coveralls (AC = 7)
 1 Mess Kit
 1 Compass
 1 Toilet Kit
 1 Waterproof poncho
 1 Sleeping bag
 2 Sets underwear
 50m Nylon cord (50 kilogram breaking strength)
 1 Web belt w/ammunition pouches and holster
 14 Days rations

The Basic load is an issue of equipment that is common to all MP personnel. This equipment is stored in a locker that is part of the individual's freeze tube and is assigned to the particular person.

BOLT HOLE STANDARD EQUIPMENT

This bolt hole is not equipped with either a periscope or a CBR detector package. However, there are three equipment lockers mounted on the walls:

Locker #1 (Escape Tools)

4 Shovels, Folding
 1 Axe, Two-handed
 2 Picks
 2 Crowbars

Locker #2 (Emergency Supplies)

1 Ration Pack
 (feeds 6 people for 10 days)
 1 Large Medkit
 1 HP-35 Pistol w/3 loaded magazines

Locker #3 (Emergency Weapons)

2 M16A2 Rifles,
 each w/2 loaded magazines
 2 HP-35 Pistols,
 each w/3 loaded magazines
 1 CP-7 Binoculars/Laser Rangefinder

Mounted on wall
 (near antenna contact point)
 1 AN/PRC-70 Backpack Communicator with scrambler

The PC's can operate all of this equipment without too much difficulty.

THE CRATES

All of the following items are packed in crates crammed into one corner of the bolt hole; the manifest the players discover is shown to the right:

Although all of the gear is marked and is MP standard issue, none of the team members knows why it is here in the hole with them! All of the gear is in perfect working order, although (with the exception of the Fusion Pack, wired to the bolt hole computer) none if the gear is activated, and none of the electrical gear's batteries are charged.

MANIFEST

- 1 Fusion Pack (activated when team wakes up)
- 1 Drug Kit
- 1 Surgical Kit
- 4 Medkits
- 2 CP-7 Binocular/Range finders
- 1 AN/PRC-70 Backpack Communicator
- 3 AN/PRC-68 Personal Communicators
- 1 Pioneer Kit (Axe, Shovel, Prybar, Bow Saw, Sledgehammer)
- 1 Shelter Kit (Tarps, Cord, Ropes, Firestarter)
- 2 "Stokes" basket-style paramedic stretchers
- 6 Cold Weather kits, assigned by name to team members
- 4 ration Packs
- 1 Crate, Water Purification Equipment (Individual & Team)
- Several Drums, Drinking Water, various sizes

THE SHOTGUN SLUG ROUND

The slug round is an alternate load for a 12-gauge shotgun: Simply a gigantic butter, instead of the normal pellet loads usually fired from such weapons. The slug is pretty massive (nearly 20mm) but because of the loading and the fact it is fired from a shotgun, the round does less damaged than a normal 20mm round, or even the smaller (but more powerful) .50 HMG bullet.

NAME	12 gauge slug round
CAL.	.775 (19.6x70mm)
E-FACTOR	25
EFF. RANGE	150m
MAX. RANGE	1000m

This round is not normally among those used by the project, which stuck with the 00 magnum buck as a standard load for it's unit. However, any captured slug rounds will work in MP 12 gauge shotguns.

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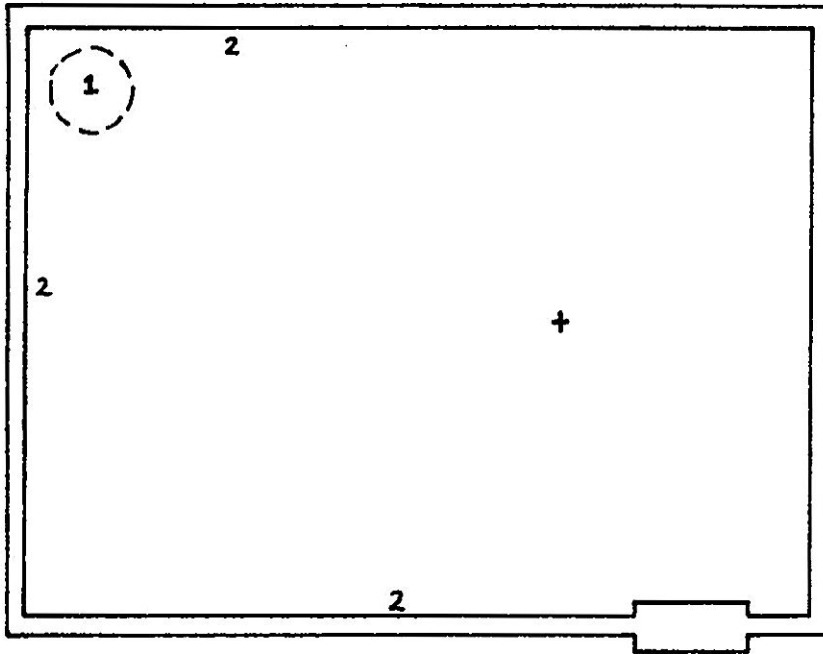
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GS 10508-C	Clear Tug	3.50
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GS 10508-G	Green-Glow Tug	3.50

...and if you're looking for "Down-to-Earth" adventure, try:

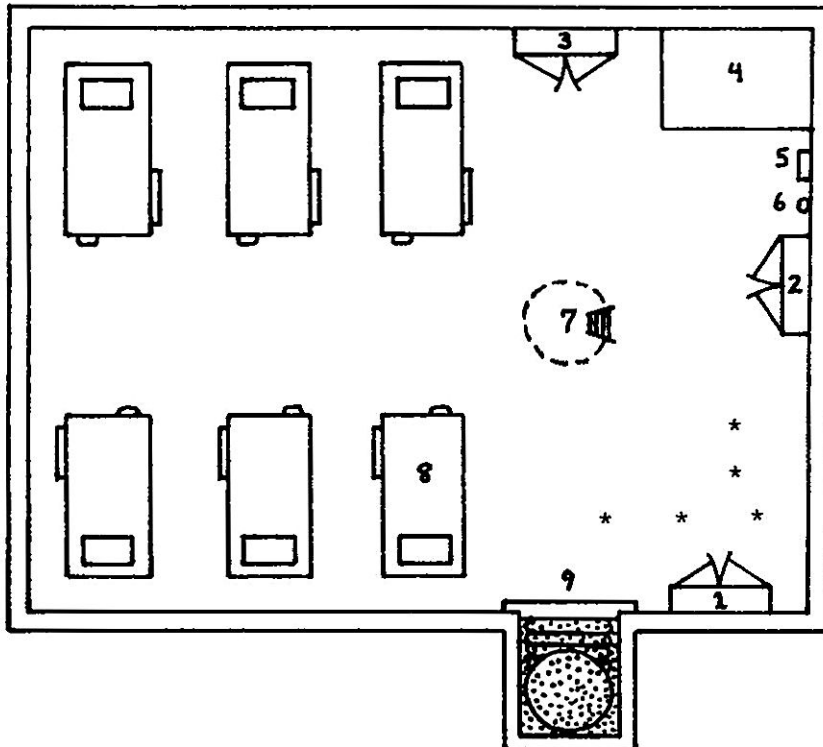
ACTION MAPS Set 1 (GS 10450) \$6.00

Accessory by Gamescience
Whether the Giggler has just robbed the bank, terrorists have siezed the precinct station, the Pod People have taken over, or a poltergeist is on the loose—you're on the scene with ACTION MAPS(tm)! This set contains 6 maps printed on three double-sided 22x35" sheets, each with detailed city locations (bank, city park, police station, office building, shopping center and gas station) printed with 1" grids for instant adventure in your favorite superhero, secret agent, crimebuster or other modern-setting role-play game. Also includes cut-out vehicles and gamemaster's reference book as playing aids.



'CRAWLSPACE'

- 1 Manhole above
- 2 Vent holes in walls (3)
- + Bolthole Exit point (buried)



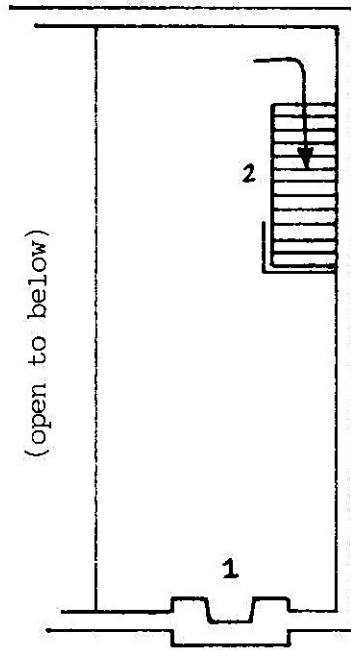
BOLTHOLE

- 1 Locker #1 (tools)
- 2 Locker #2 (supplies)
- 3 Locker #3 (weapons)
- 4 Computer
- 5 AN/PRC-70 Radio
- 6 Antenna Contact Point
- 7 Personnel Exit above
- 8 Freeze Tubes (6)
- 9 Emergency Exit, filled with sand
- * Crates

[Dimensions, Exterior]

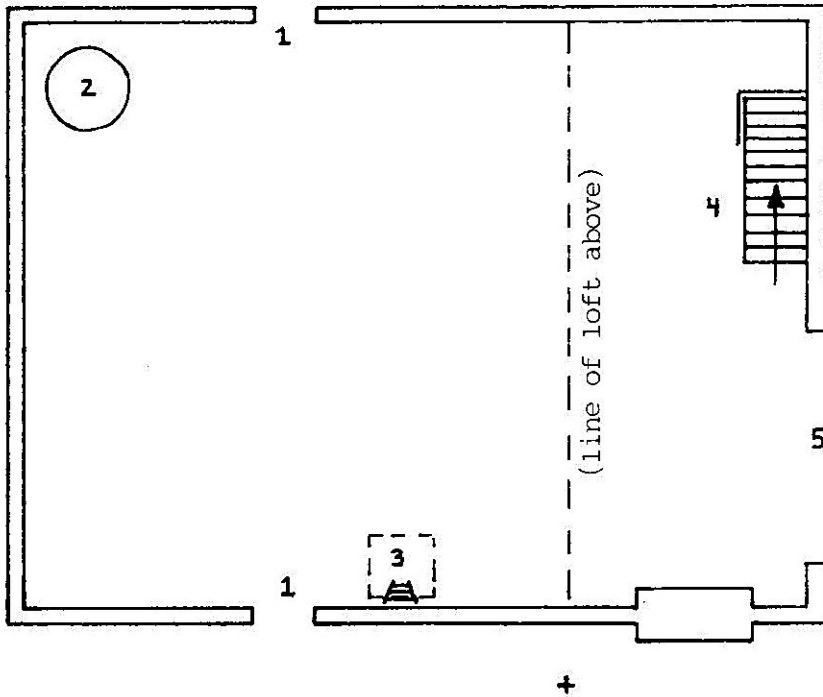
L = 35.2 ft (10.7 m)

W = 27.1 ft (8.2 m)



LOFT

- 1 Fireplace
- 2 Staircase DOWN



GROUND FLOOR

- 1 Windows (2)
- 2 Manhole cover
- 3 Roof Hatch above
- 4 Staircase UP
- 5 Open Doorway
- + Emergency Shaft Exit Point (buried)