

THE MORROW PROJECT

DAMOCLES

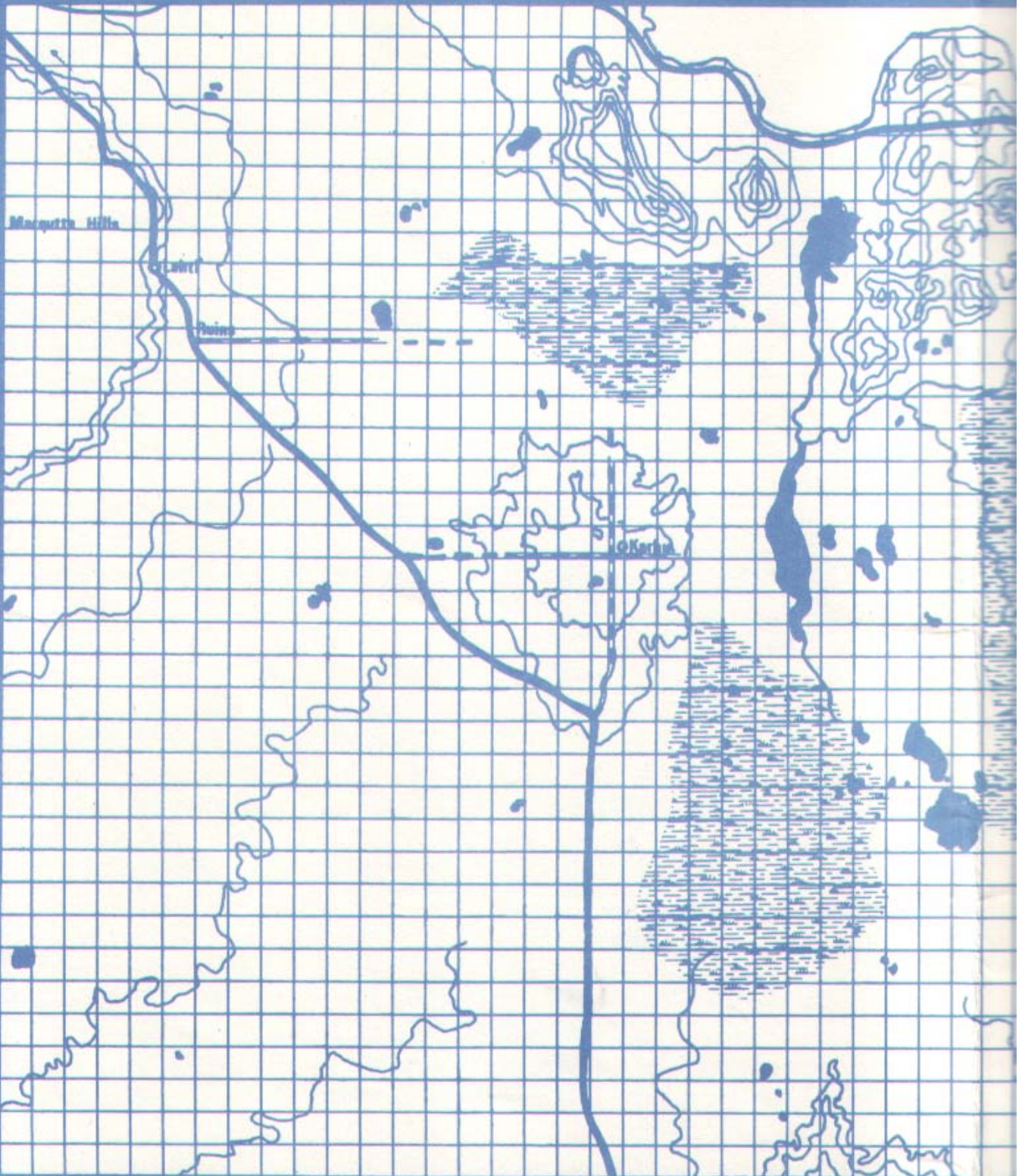
A Complete Game Scenario for the Experienced or Expert Player
By H. N. VOSS



PRIOR POSSESSION OF THE MORROW PROJECT TM1-1
IS NECESSARY TO THE USE OF THIS MODULE.

PROJECT FILE
R-002

NORTH



Areas not marked as swamp are forested.



Swamp



Damocles



Belt Hole

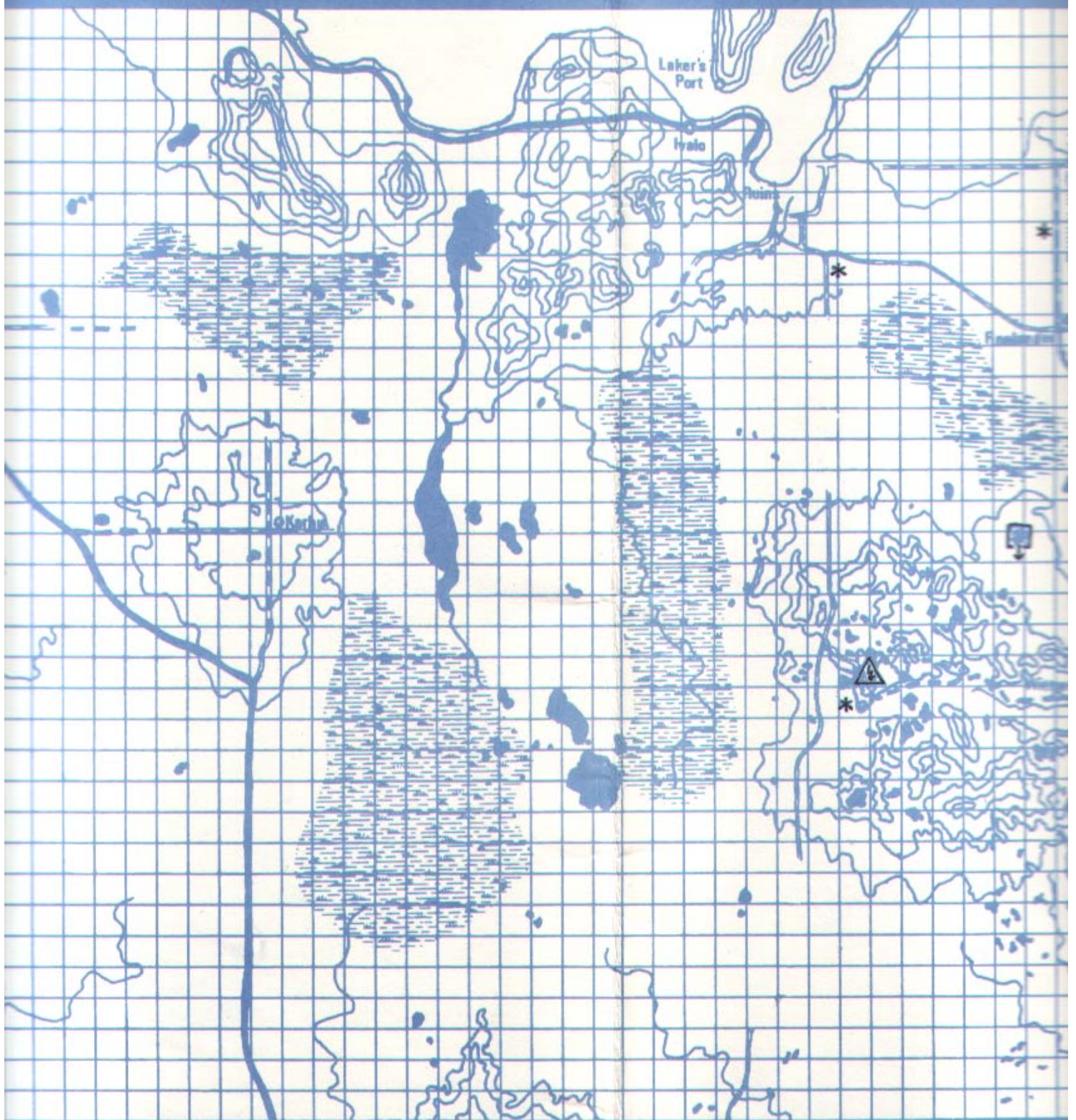


Supply Cache

Road

Trail

NORTH



Swamp



Damocles



Belt Hole



Supply Cache



Road



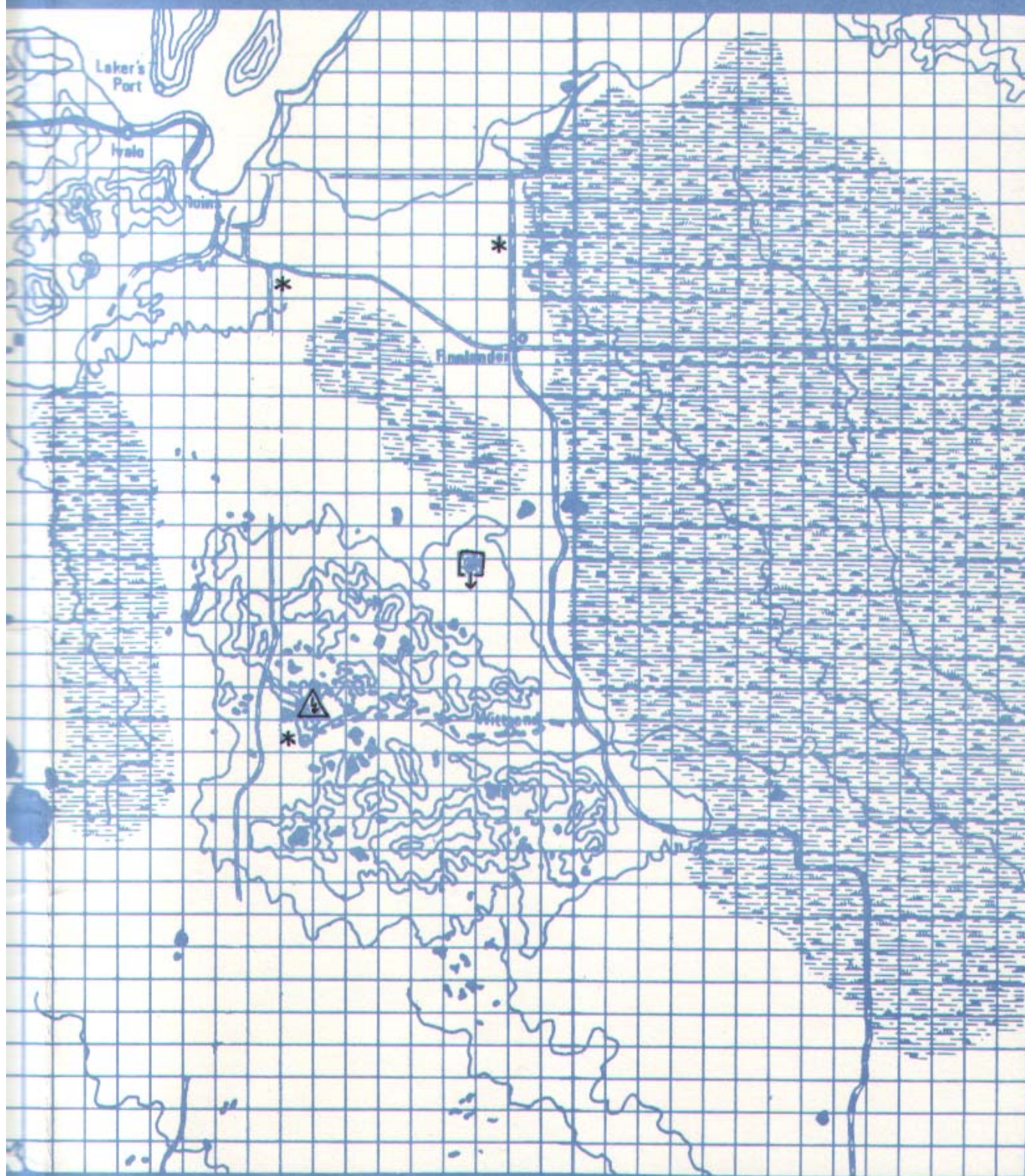
Trail



Path

Contour Interval: 50 Feet

Scale: 1 Sq

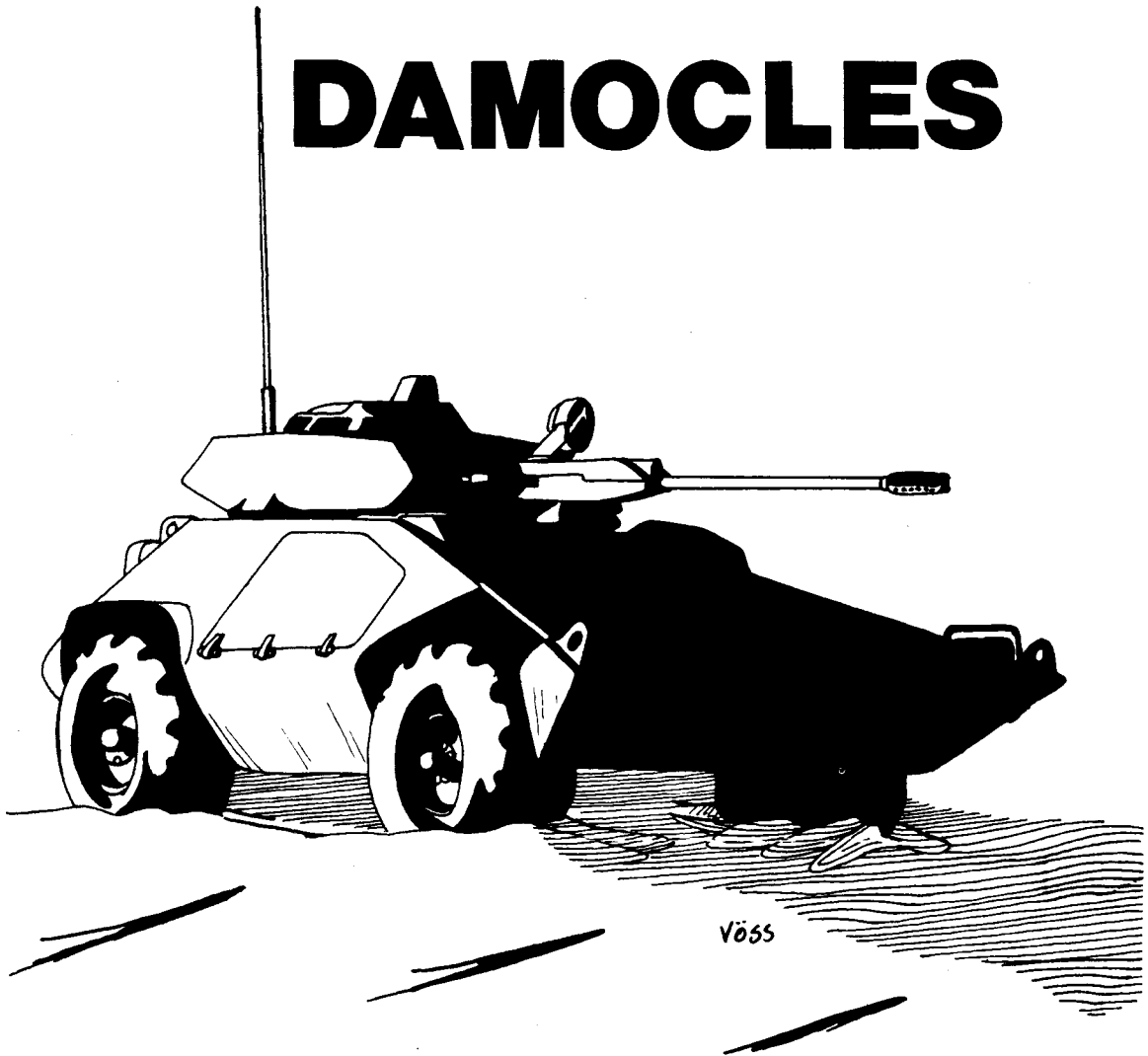


Contour Interval: 50 Feet Scale: 1 Square equals 1 Kilometer

THE MORROW PROJECT

Project File 002

DAMOCLES



By
Expert Technical Assistance
Illustrations

H. N. VOSS
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INTRODUCTION

Damocles is an adventure. It involves fear, hope, accomplishment, courage, hardship, and triumph. It will tax you as no role playing adventure ever has. Most of all, Damocles is about contrasts and what they do to us. A sparkling, frigid desert; towering forests — as green in February as they are on the summer solstice. The warmth of tribal frontier life, and bands of marauding brigands. The relaxing fellowship of a cedar sauna; the eerie, subterranean morgue of Project Damocles.

There are many worlds in Damocles, the most important being the world of your own mind. Within the other worldly levels of Damocles' home, the perfect, sterile rationality of Damocles' intelligence clashes with the human wreckage of the nuclear age. Amid the ossified remains of the humans who were driven mad and worse by Him, Damocles' android units move quietly and efficiently, careful not to disturb such government property as lies about.

It is the world of contrasts which Damocles is all about — and as contrasts only appear to the human mind which perceives them, it is the most challenging world of all.

MARK H. WELCH

THE UPPER PENINSULA

I. SITUATION: PRE-WAR

The UP has always been sparsely populated. Its total population has never exceeded 200,000. Aside from farming and fishing, most people in the UP made their living in mining and forestry. There were no large cities to speak of and the people tended to live in small rural communities.

II. SITUATION: THE WAR

For most of the region the war was a distant event. No bombs fell in the UP itself, perhaps because none were targeted there, perhaps because targeted bombs missed. The war took place during the winter, and since life in the UP stops for winter, the only immediate effect was to make it a somewhat grimmer winter. The people had dug in against the weather and so lived through the war.

III. SITUATION: POST-WAR

Because of the time of year, the after effects of the war itself were minimal. There was no disease and no famine. Comparatively few died from the fallout as the precautions taken against the Northern Michigan snow worked surprisingly well against radioactive dust.

But life had changed. The ore boats once playing the Great Lakes disappeared. The mines closed. There was no power and no gas. To the south, across the lakes, where there had been radio and television stations, department stores, government and cities there was only a glow in the twilight sky.

There was some fighting in the UP. The most bitter centered around the State Prison at Marquette, where the locals fought with the former inmates for several weeks. In the end, the prisoners were crushed. Those escaping scattered into the central hills.

Society changed very little. Never a center of technology, the UP found it easier than most places to survive without it. Barter was easily accepted in place of money. The deterioration of the roads was a nuisance, but with the passing of the automobile, it was not a major disaster.

The animals that had once lived in the UP in great numbers began to return. This was both good and bad. While elk, caribou and deer meant good hunting, wolves meant trouble.

RECON TEAM G-9

I. GENERAL

Recon team G-9 was frozen on 13 November, 1981. Team members know they are the only Recon team in Michigan's UP. The team does not know whether or not there are other Morrow teams in the same area.

As the sole Recon team in the area, they must stir about more than is usual. The team was equipped for this necessity. Having been issued no specific orders, Morrow Project general orders must apply: To help the people in any and all capacities, to establish communications with other teams and with Prime Base, and to survive.

The team had no contact with the local populace before freezing. They are familiar with the terrain only by virtue of the maps contained in the Auto Navs. These maps are, of course, 150 years out-of-date.

II. TEAM PERSONNEL

The members of the team are familiar with one another, having gone through Morrow Project training as a team. The team is completely familiar with all issue equipment and its operation.

Any of the following basic loads are recommended for this module: 01, 02, 03, 07, 09, 10, 11, 14, 17, 18 and 19. Team members can always operate the issued equipment of other team members. How well they can operate this equipment may vary.

III. TEAM EQUIPMENT

The team's personal gear is in perfect condition. The team's vehicle is also in perfect shape, along with its internal stores.

PD NOTE: If you are using pre-existing characters, it is advisable to equip them just as they were at the end of their last action. In addition to the above consideration, keep in mind that they would not be aware of any of the caches in the area; indeed, the caches might not exist. If you choose to leave the caches in place, remember that the team does not know how to locate them and will find them only by accident.

THE BOLT HOLE

This is the standard storage and freezing facility of the Morrow Project, often mentioned in the Game Book. These are the same throughout the project and differ only in size. The size depends upon the number of personnel and the size of the vehicles, if any.

Briefly, the "hole" consists of a buried room constructed of steel and reinforced concrete. It is designed to be air tight and reasonably blast proof. It is also shielded from lethal radiation.

While the occupants are in stasis the hole is filled with an inert gas at slight overpressure. This has the dual function of keeping foreign gasses out and preserving the equipment inside the hole from the normal wear and tear of time; things do not rust in a project bolt hole. Part of the hole's integral equipment is an "idiot box" computer. This computer is responsible for maintaining the gas pressure, monitoring the hibernating team, and awakening them, either upon receipt of the recall signal or in the event of an emergency. For the most part, the idiot box just sits and waits.

When the "activate" signal is received, the computer evacuates the inert gas and fills the chamber with a pre-bottled atmosphere mixture. It then activates the "awake procedure" in the freeze tubes. When this procedure is complete the computer shuts down and cannot be reactivated. All team personnel are aware of these facts.

The hole itself contains the team's freeze tubes, a vehicle (if any), and a large table. It also includes the periscope package which consists of a periscope designed to view the immediate area above the hole, equipment to monitor the levels of radiation in the area and the presence of chemical or biological hazards. A radio antenna completes the periscope package. This equipment cannot be moved from the hole and the team knows it.

The hole has three exits: two for emergency use by the team and the primary exit for the team and vehicle. All are designed to be blast proof and difficult to detect by casual outside observation. The two emergency exits are cofferdamed with sand which must be removed before the exits can be used. One of the

cabinets in the hole contains the tools necessary to do this. The primary exit is equipped with hydraulic rams to open the large door.

It should be noted that the bolt hole is not designed for habitation. There are no beds, no food other than the emergency supplies, no water source and no latrine arrangements. It is designed to be abandoned.

TEAM VEHICLES

MPV's for this module are the Commando Scout and the XR-311. These MPV's are in perfect working order with all stores intact.

PD NOTE: Team G-9 was intended to range the entire UP. As such, MPV's were kept light, fast and numerous. There should only be one Scout MPV, but XR 311's can be added as necessary to accommodate additional players. This module will work best if there are only one or two characters per vehicle.

All of the vehicles retain their original green paint job.

MORROW PROJECT COLD WEATHER EQUIPMENT

Since this team was intended to operate in Michigan's UP, complete cold weather gear was provided. The following equipment is Morrow Project issue for teams that are likely to encounter extreme cold.

PERSONAL EQUIPMENT:

The following items are issued on an individual basis.

- (1) Black, knit wool, "watch cap".
- (1) Pair of "photo sensitive" sunglasses/goggles.
- (1) White wool scarf.
- (1) White, gortex shell, holofill parka. This parka has a detachable, fur-lined hood.
- (1) Pair, black leather shell "shooting mittens". These are quite cumbersome and must be removed when performing delicate work.
- (2) Pairs, green wool mitten liners.
- (2) Pairs, white wool "field pants". These are very roomy and have two large cargo pockets on the thighs.
- (1) Pair, black insulated boots. These are very good in "dry" cold but of limited value in "wet" cold. If these boots get soaking wet they will not insulate.
- (1) Green wool "commando" sweater.
- (2) Sets, green long underwear.
- (6) Pairs, thick wool socks.
- (1) Individual stove with 50 heat "tablets".
- (1) 4 oz. can of wind/sun burn salve. To "grease up" exposed areas of skin. Will not prevent frost bite from long wind exposure.
- (1) 2 oz. plastic bottle of cold weather weapons lubricant.
- (1) Pair of aluminum snow shoes.

None of the items listed above have any armor value. It is intended that these items be worn either over or under the normal coveralls.

The following items are issued to the team as a whole and are intended for group use:

- (1) 4-man, green, free-standing dome tent. More of these tents are issued if there are more than four members in the team.
- (1) "Optimus" type camp stove with 24 hours worth of fuel.
- (1) Ice saw.
- (4) White/silver "space" blankets.
- (1) Cold weather weapons maintenance kit. One per MPV.
- (1) Fire Stick fire starter.

TEAM CACHES

Recon Team G-9 has six supply caches. These are typical Morrow re-supply facilities and are located through the use of the Auto Nav aboard the MPV. Since the cache locations exist on the map displayed by the auto nav, the MPV can simply be driven to the point on the map and a search for the cache begun.

PD NOTE: If the team loses the auto nav they cannot locate their caches. This is not the case if the team had the good sense to make a copy of the map on a piece of paper.

In this module all caches are buried underground. The usual Morrow Project practice for locating caches is to place them beneath a real or a facsimile USGS Benchmark. In terms of the game, a benchmark is a concrete post driven into the ground with a metal data plate attached to the top of the post. As a rule, only an inch or two of the post will show above ground. Benchmarks are designed so as to make them exceedingly difficult to move, but those made or used by the Morrow Project are sunk only about three feet into the ground.

Having located a benchmark the team will still be unaware of the location of the cache; teams were not told how to identify their supplies other than location through the auto nav. But if the team is medium bright it will begin to dig up the benchmark as these will likely be the only thing in the area that catches their attention.

About a foot below the level of the ground there will be stainless steel data plate attached to the post. This will give the team's number and the exact location of the caches; usually just beneath the bottom of the benchmark post.

Entrance to the cache is gained by way of a stainless steel hatch assembly on top of the cache. Next to the hatch there is a card slot. Insertion of an MPID will allow the hatch to be operated. If this is not done, or if the team has somehow managed to lose all of their cards, they will have to blast the door open.

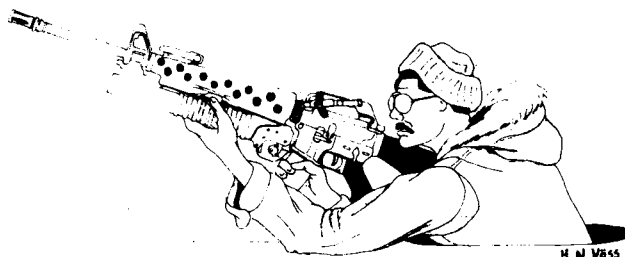
The cache itself is a cube, 2 meters in all dimensions. It is constructed of reinforced concrete and steel. It has no windows, no power source, no lights; it is just a hole in the ground for storage.

The contents of caches vary and in this module and the exact contents of each is left to the discretion of the PD. Each should contain a case of each type of small arms ammo used by the team, and spare coveralls and medkits for each member.

Beyond these standard items the contents of each cache should be different. Example of what might be found in some, but not all caches include:

Spare Weapons for team personnel	Sacks of seed
Spare parts for the MPV	Sacks of fertilizers
Carpentry tools	Text books
Light weapons and ammo for locals	Farm tools
Non-MP medical kits & supplies	Trade packs
A "teaching machine" for reading	Food stocks

PD NOTE: Use your imagination; what would YOU want to give a recon team to help them with their basic mission? Be careful and remember that you were planning for only three years of change, not 150.



THE AREA, TERRAIN AND ENVIRONMENT

This module is intended to take place during January of a particularly brutal winter. As such, terrain plays a less important role than does environment. Full environmental data will be found in the Play of the Game section of the module.

The terrain of the Wittsend area can be divided into two broad types, each type loosely divided by the North-South road. Flat swamp and Marsh East of the road, hills and forest to the west.

The swamps are frozen solid. The North wind howls across them with unblunted force. An MPV will have no trouble crossing this ground, but the crew might well have problems of their own.

Along with the swamps the only other clear areas are farmer's fields, these usually near villages. All other ground can be assumed to be heavily wooded with pines at least 150 years old.

The average depth of snow is around three feet. This being the case, roads, trails and old railroad tracks are of little value since they cannot be readily found. A road or trail might be inferred from a path clear of trees, but this can as easily be a stream, /creek or small river.

All water in streams or lakes is frozen but the ice will vary in thickness. Scouts and 311's have only a 20% chance of breaking through the ice. Check when a vehicle first rolls onto the ice and again for every kilometer the vehicle travels on the ice. A man on foot has no chance of falling through this ice. Lakes look like snow covered clearings among the trees.

Underneath the snow and the trees, separating the streams and the lakes, there are hills. Rugged, incredibly convoluted hills. Height will vary from 50 to 150 feet with an average slope of 45°. When among these hills there seem to be only two directions; up and down.

The MPV's in this module are designed to be able to cope with snow, but not necessarily on some of these icy grades. P.D. should use his own judgement, but travelling up a 60° slope on ice covered snow at 45 mph is not realistic. This terrain is an ideal place for the team to learn about improvised winch and rope work.

Line of sight is limited by hills and trees. Sometimes one can see for several miles, but usually visibility is about 20 feet, before figuring in weather.

PD NOTE: If you intend to run DAMOCLES as a campaign, we recommend that you obtain a copy of: USGS MAP NL 16-5 "Marquette"

From the:

**U.S. Geological Survey, Reston, Virginia 22092
TimeLine DOES NOT sell these maps, nor do we have current price information. The maps themselves are of beautiful quality and an answer to the prayers of the Project Director.**

THE PEOPLE OF THE LAND

One hundred and fifty years after the war, life in the UP is hard but pleasant. The Marquette region has again reached the level of steam technology. These steam engines burn wood instead of coal and are less efficient than those of the late 19th century, but are useful nevertheless. However, little electricity is produced due to the cost in time and energy to gather wood for heating the boilers. Areas in the interior do not use steam; water and wind fulfill their relatively modest needs.

Wolves are a problem, especially in the winter. Packs are never larger than 20 or 30 but such a pack is too large for a single person to deal with. As a result, people seldom travel alone in the winter unless absolutely necessary.

The people have maintained a gun powder technology though most fire arms are black powder flint locks. Since the production of modern boxer type primers was not possible in the early days, the knowledge of how to make them has been lost. Still, the possessor of a flint lock is likely to be expert with it and rifled barrels are common.

Trade is conducted by barter but a monetary system of sorts is spreading. The Marquette region is trying to introduce copper coinage and wandering traders are picking up the idea. However, it will be years before such a system is widely accepted.

This is partly due to the fact that there is no central government. While all towns and villages have some local government and areas roughly the size of counties may have a district government, all power remains in the hands of the people in the

villages. There are no full time government employees as none are thought necessary. Government work is unpaid.

There are a few laws beyond the golden rule. Informal standards of behavior do exist and are enforced by mutual agreement. A few of these might include the following:

There is no such thing as slander or libel, but there are people missing teeth.

There is no contract law. A person's word is good or it isn't. Reputation is important.

Murder is always frowned upon. Something is done about it whenever possible. Something is possible whenever the murderer is caught.

Killing a "con" is not murder.

Orphans and widows are never allowed to starve.

Salvory is never tolerated.

There are no lawyers and there are only a few local judges. These judges are not paid and they serve only part of the time (usually as needed) and always at the pleasure of the community.

At the time of the war there were only three large cultural groups in the UP, already somewhat intermingled. These three groups were American Indians, Finnish immigrants and people from the melting pot of north central America. While this might have caused trouble following the war, these people found they had nothing to fight about, but a lot to work together on.

Today it is possible to find a man named Silver Wolf who will tell you with pride that one of his ancestors came over on the Mayflower, or an Indian leader whose last name is Maki or Aho. The people are proud of their heritage and prouder still of their "one people and one culture."

Of course, this turn of events has made for an interesting language composed equally of Chippewa, Suomic and English. Most people can speak plain English, although not always well. English is a dead language but it is also the language of letters. The survivors of the war tended to be bright people and the basic stock of the UP has always been long on common sense. The people have done what they can to keep learning alive and every county has its school. Anybody who knows something can teach. There are no "classes" in the old sense and people from 6 to 60 often attend though most "students" are in their 30's or 40's.

There is also Northern Michigan University (NMU) in Marquette. While it is no longer a functioning University, it is still a center of learning. It has been maintained as best as possible with particular care given to the University Library. It is a matter of pride in the counties to have at least one 'scholar' at the 'U' at any given time. Anyone can attend NMU as it is simply a matter of getting there. It is run on a communal basis with equal time being given to the growing of food and other necessities and to study. The usual stay is for a year or two. There are no degrees, formal courses, etc. Counties often send questions to "the scholars" to be answered.

Most "education" is in three areas: agriculture, history and literature. Mathematicians, engineers and doctors can also be found. There is no one who understands computers, nuclear physics or particle theory. On the other hand, nearly everyone over 20 can quote pages of Shakespeare or discuss Nietzsche.

Sadly, there are few printed texts produced and what books remain are in great demand. Most counties try to maintain some sort of library and the discovery of a 'new' book is a great event.

CONS

'Cons' are the spiritual descendants of the Marquette Prison inmates. There is no one group of cons but many small bands. There are probably no more than 500 cons in the whole of the UP.

The 'cons' are outlaws that usually live together in small bands that rove about. Some are lineal descendants of the Marquette Prison population, but most have taken to the life

since then. Most con gangs have a base of some sort which is usually a place they can go to in the winter. At these bases they leave pregnant women and small children and store their booty.

Cons have no society to speak of and few can read. Either a person is born a con or joins after being 'outlawed' by their community. Joining is not easy and prospective additions to a gang are thoroughly "blooded" before they are accepted.

Cons prey on the people of an area by taking over isolated farms, ambushing lone farmers and stealing whatever is not tied down. They have no honor and their average H-M rating is 05. They are indifferently armed; a con holding a gun does not mean the gun is loaded. They live a hand-to-mouth existence and would have died out years ago if it were not for a very few non-cons who are willing to trade with them. Books and horses are the items most in demand from the cons in such trades. For obvious reasons this kind of trading is secret when it occurs.

It is a common belief that the cons are organized into a conspiracy of gangs. This is not true. However, sometimes messages pass between groups and occasionally two or three gangs will get together for a job.

The locals defend themselves as best they can. Lone farmers hole up in their houses. Communities form posses of vigilantes whenever a con gang is located. This small war has gone on for as long as anyone can remember and neither side has any decisive advantage. Isolated farms are now rare and farmers tend to live in villages. They leave each day at dawn for their fields and are careful to return by dark. Walled villages are common.

LAKERS

These people are not a true part of the Wittsend area, but, as the villagers have knowledge of these people, they are included here. The Wittsenders call these people 'Lakers', but they are identical to the 'Shipmen' found on page 52 of the MPGB.

There is an island in Lake Superior North and a little West of Wittsend. On this island is one of the small towns/ports maintained by the Lakers. Lakers come and go, usually in wooden sailing craft. There are rumors some of the huge old steel ships are still used, but no one in Wittsend has ever seen one.

It is common knowledge some Lakers winter over on the island, the lake being frozen too far out to make water faring practical. Indeed, the water is frozen all the way to the island, and beyond the island into the lake for another couple of miles.

Lakers are not bad people, but they are inclined to be a bit suspicious of large, armed groups of strangers crossing the ice toward their village. The P.D. might want to keep this in mind. It is possible the Lakers have some muzzle loading, black powder cannon

PD NOTE: Team members must talk **DIRECTLY** to Lakers to learn any of the following:

The Lakers range all over Superior and know all of the coastal population centers. They do not sail on the southern lakes because they cannot; the Soo Locks lie in ruins making the water unnavigable. But there are Lakers in the south and news is exchanged when possible.

Lakers do not sail to Isle Royale. Their legends tell that after the war the island was seen to glow in the night, there were strange flashes and beams of light. The radios the lakers still had came to life and squawked in no known language. The consensus seems to be the Lakers consider the island haunted and they have every desire to leave the island strictly alone.

VILLAGE OF WITTSSEND

A pre-war citizen of Wittsend would recognize it today, but some of the changes would startle him. There are several new buildings, mostly barns, within the village. Some of these

buildings are painted in Amerind motifs and designs. Each house now has its outhouse. There are no power lines, street lights or traffic signs as they were torn down and their metal salvaged. Windows are equipped with heavy shutters despite the fact that glass is clearly plentiful. There are no longer any cars. These have been replaced by horses, wagons and elk. Every house has a sauna; either attached or standing free. The village itself is surrounded by a wall of earth and wood.

There are 21 families (about 110 people) living in Wittsend today and over half of the people are children. During the day there are always children on the wall keeping watch. At night the men take over.



The town is clean because the people keep it clean. What garbage there is tends to be used in the fields as fertilizer. Although none of the streets are paved, the village is carefully laid out. Most of the buildings are houses or barns, but there are workshops, smoke houses, saunas and other special buildings. Some houses are obviously used for more than one purpose, such as the blacksmith's and the glass blower's works.

In the center of town there is a park with a pond. The park is used for village meetings, markets, weddings and other community events.

The best way to describe the villagers is friendly and honest. They have no enemies but the cons. Relations with other villages are cordial although friendly rivalries do exist. The only serious regret the people have is the lack of their own school. The people would like one and have proved to the county seat their willingness to build one. (The seat is the county council at Finnlander.)

But it is unlikely that a school will be built there as few people would be willing to go to it. The people of Wittsend are well liked, but everyone in the county knows that the people there have some strange notions.

Everyone in Wittsend talks about "The thinker in the hill." For the last hundred years the legends about it have grown. (The thinker is Damocles.)

From time to time people have run into one or another of Damocles' mobile units. These things are not understood but are recognized as a product of the old technology. Tales are told of the times before everyone lived in the village; when metal things were stolen, loud noises were heard in the night and huge tracks were found in the ground.

Since all of the people have moved within the village walls, the "Theivings" have all but stopped. Tracks are still found and other tales are told of lights in the sky, strange noises and machines talking through the air; but no one except the villagers places too much faith in these stories.

There is also the strange matter of Blind Elk. Blind Elk was the "uncle" of John Great-Oak. He died eleven years ago and was not in fact blind. He was a seer whose medicine was strong. He spoke of many things about both the future and the past but one story is particularly significant. It was a story he told in his last days as he lay delirious with the fever that finally took him. This is the story as it is remembered:

"In the long hall of the old ones, beneath the eyes of the Gods, the wise men are met. The wise speak of many things but most of the troubled times to come. The wisest holds his council and speaks last. His

words are straight.

The sky burns, demons roam the lands of our fathers and the waters flow red. The tall houses of the devils are no more.

The land opens and devils rise from beneath. They spring forth like corn in the spring. They are from the Old Ones. They have the magic of the Old Ones. The circle of their run closes. Fire comes again from the sky."

Before he died, Blind Elk drew a sign in the frost upon a window:



This sign is now painted in red and blue on the side of the medicine lodge.

These are some of the things which make the people of Wittsend socially unacceptable. The people of Wittsend swear the tales are true, but no one from outside really believes in them.

PEOPLE OF WITTSSEND

The people of Wittsend tend to be tall with a blend of facial features showing some of the marks of the Amerinds and some of the IndoEuropeans. They dress in homespun, wool and buckskin. Cotton is unknown. Bead work is common and beards are worn by any man who can grow one.

The Wittsenders have heard of an Amerind Empire somewhere to the west, but they do not know anything specific about it. Word has come through traders of its existence.

Full details of the Amerind Empire will be available in an upcoming module; the first Morrow Project campaign scenario.

GROUPS

While all of the people get along well and intermingle freely, cultural groups do exist. No group has a clear numerical or social superiority.

UPANITES

The Upanites are the closest group to the average American of today. When the war took place and civilization effectively ended, these people had the most to learn from the other two groups. They are a dour lot and an Upanite at work is very much like a Maine grocer talking to a flatland tourist: not much said, nothing missed. They are also more clannish than the Amerinds or the Finns. Upanites view anyone from outside of Wittsend as a foreigner and suspect. Sedentary and security oriented, they are quite dull.

As a rule, the Upanites are usually the most competent farmers and builders. They are very serious and people who do not know them might think that they have no sense of humor. This is not true. Upanites simply have a very dry, quiet sense of humor. They seldom laugh, but frequently smile. Upanites are solid, hard working members of Wittsend.

AMERINDS

Amerinds are the descendants of the American Indians living in the U.P. In the eyes of these people the war was a good thing. It ended the blasphemy of reservations, killed off politicians and do-gooder liberals, and forced both the Indians and the whites to work together in order to survive. Things had been far worse for the Indians before the war.

The Amerinds are the most mobile of the villagers. They roam far in youth and often settle in other villages or towns. Amerind parties do most of the hunting, for they are better at it than either the Finns or the Upanites. Young men prefer the romance of spear and bow while family men like the security of a rifle.

The Amerinds maintain a strong oral tradition and are the town's story tellers. Somewhat to everyone's surprise, they have found that they are also very good singers.

Fond of horses, the Amerinds prefer this mode of travel to all others. Horses are nearly family members and the Amerinds have a good rapport with their horses. Maligning a man is not as likely to cause as much trouble as bad mouthing his horse.

As much as possible, these people have returned to the traditional, pre-conquest life style of the Northern Plains and Lake Indians.

FINNLANDERS

Much of the U.P. was settled by immigrant Finns. Tall, fair-haired and completely crazy, they add a lot of color to the community of Wittsend.

The Finns excel in artificing including blacksmithing, wood carving, glass blowing, etc. They also produce the majority of the community's potables; the usual ratio being 1 large still to 1 Finn family. Vodka (for lack of a better descriptive term this side of Kerosene) is the usual product. When blindness occurs it is usually temporary and death is quite uncommon.

They also domesticate elk. These pull sleds, plows and wagons. The Finns say this is the next best thing to reindeer.

The Finns are also very good at coping with the snow. Skiing is the preferred means of transport, and Finns can fire their rifles while skiing at no loss to their accuracy. Finns on skis are very dangerous (ask any Russian).

Jovial and expansive, they have been likened to Texans of the North. The Finns resent this comparison and point out with smug superiority that they do not smell of cattle.

But they would smell of vodka and elk if it were not for another cultural oddity: the sauna. Although this will be detailed later in the section on Play of the Game, it is worth noting that all people in Wittsend are now addicted to this device and every dwelling has one.

WITTSSEND IN WINTER

U.P. winters are deadly, but villagers are used to them. Life slows but does not stop in the winter months.

While farming ceases, farmers work in their barns and make ready for the next growing season. Villagers hack holes in the ice and fish, hunting parties look for game in the snow.

Snow shoes and skis come out starting around the middle of November. The village has 3 old snowmobiles but these are only used for special purposes. The streets of the village are covered with snow to a depth of 3 or 4 feet. The people don't shovel it, they just pack it down.

Food is carefully hoarded before winter, and the people plan for winter so well that there is a slight increase in the amount of food consumed, without including the Yule time feasts.

Winter may be the best time to be in Wittsend. There is not too much heavy work and lots of time for games, fellowship and firelight.

TOWNSPEOPLE

JOHN GREAT OAK: MEDICINE HAND

The adopted nephew of Blind Elk, John does not know who his parents were. Blind Elk found John as an infant beneath an old white oak tree. John's parents lay dead nearby, along with his brothers and sisters. Blind Elk thought the family had been fleeing from cons.

Blind Elk raised John like his own son. John grew tall, strong, and wise beyond his years. When the time came, John travelled to the University and added "book learning" to the hearler's arts Blind Elk had taught him.

In the years after his return, John surpassed Blind Elk in skill. This was just as well as Blind Elk's eyes were getting bad. The Elk felt nothing but pride for his adopted nephew. Blind Elk died in his 90th year, forty years after he found and named Great Oak.

John is now around 51 years old. He is a medicine hand of consummate skill. A quiet man, he is known to be gentle and



kind, for all his grim and weathered appearance. John never married as this is not the way of a Wittsend medicine hand. He is, however, on the most intimate terms with Kyra Aho.

John is never seen without his knife. Given to him on his twelfth 'finding day' by the Elk, Blind Elk told John that he had found the knife near the body of his 'first father'. It is also true that John Great Oak has never held a gun.

On some nights he has been seen by moonlight, far off in the hills where he was found. It is rumored that he hunts on these nights but no one asks him what game he stalks.

FRED ANDERSON

Fred is the 17 year old 'apprentice' of Great Oak. John took him on six years ago at the request of Fred's Upanite parents. The boy was just too boisterous and wild, too moody and restless, prone to pranks and in general beyond the ken of his dour family.

Fred has not changed much. People often remark on how different he and Great Oak are. But it does not bother the two of them and they team up marvelously. Perhaps each finds in the other something that is missing in themselves.

For his part Fred has become quite good as a young medicine hand. John has no qualms about sending his 'son' to deliver babies, set bones, or comfort the dying. It is close to the time when Fred should make the pilgrimage to the University. Whether or not he does so will depend in part on how things go between him and Myra Aho.

KIIRA (KEE-RAH) AHO (EAY-HO)

A Finnlander of 48 summers, she was known in her youth for her magnificent beauty. She had her choice of the bucks of the village and even of the county. But she fell prey to the charms of the young medicine hand, John Great Oak.

It was just as well that John was strong and fast, for he fought many fights with 'honorable' bucks intent on marrying Kyra. When John won he tended the hurts of the fallen; when he lost Blind Elk smiled and patched him up.

Kyra has long since resigned herself to something of a spinster's life. She has always been a vibrant, intelligent woman, and now wears her stunning, autumnal beauty with calm pride. She is the master weaver and quilter of the county using the wool from her own flock of sheep. Life has been good, she has her Great Oak and his demon Fred; she is content.

PAVU AHO ("PAPA")

"Papa" Aho is one of the reasons Finnlanders are known to be crazy. He is 56 and still bends horseshoes for fun. He drinks a liter of vodka a day, continues to father children on "Mama" and generally lives enough for any four other (non-Finnlander) men.

He is brother to Kyra Aho and will often boast of his good fortune in having so fine a "BROTHER-IN-LAW" as John Great Oak, conventions and tradition "BE DAMNED!" Of course, as father to Myra Aho, his 20 year old daughter, he has doubts as to the wisdom of her, ah, liaison with Fred Anderson. "Isn't one medicine hand IN the family ENOUGH?!"

Not that he dislikes the young fellow, he rather likes him, it's just that Papa wishes that he could find someone else for his daughter.

Papa's greatest concern in life is for his rather large family (8 children and no end in sight) to be happy. In this he and his neighbors for once agree. Papa Aho runs a farm, raises dogs, breeds elk, fishes, skis, swings an awesome axe, never misses with his rifle and generally has a good time. He doesn't know it but he looks just like Santa Claus and has the personality to match.

ANNA AHO ("MAMA")

She looks and acts like her husband save that she has no beard. She is not at all concerned with Myra and Fred, for she well remembers the wild 'liason' with Papa that preceeded more formal arrangements. She also realizes that Papa and Fred are much alike, something that neither of them are aware of.

Mama is the brains behind Papa. She is so bright Papa doesn't even suspect the pants are elsewhere, nor does anyone else. Mama runs her small empire with benevolence and smiles, and an attitude which says that "nothing is too good for her family" or for that matter, for strangers in her house.

MYRA AHO

A strong willed woman of 20 years who is somewhat irked that Fred is so inconsiderate as to be three years younger than herself. This, in Myra's mind, is somewhat lacking in dignity.

Myra would make a good farm wife but has been unsuccessful in persuading Fred of the charms of making a living from the land. While Myra likes and admires her Aunt Kyra, she would rather not live that kind of life if she can avoid it. Among other things, she would have to find a means of supporting herself. She is willing to try this kind of life if necessary but only when all other alternatives have failed. She is very much in love with Fred.

ARNI AHO

The latest of the male progeny of the Aho to reach manhood, Arni is apprenticed to Roy Maki, the glass blower. He is therefore not at home much, but shows up when he can. Arni will be a competent glass blower but not a brilliant one because his heart is not in his work. Arni could be a great scholar and he longs to join the scholars at the university. Someday he may but for the moment it is necessary that he learn a trade and earn his keep. In the meantime the village, knowing of his desire, uses him as a messenger to the university whenever possible.

Arni does not get along well with the other bucks his age save perhaps with Fred. Slow of speech, Arni is thought to be something of a 'whimp'. This is not true, it is because of his dislike for the young men's self-styled leader North Wind that he keeps to himself.

ROY AND JUDY MAKI (MA-KEY)

The Makis run the finest glass blowing operation in the county. That it is the only glass blowing works in the county does not detract from the quality at all.

Ray and Judy are Finnlanders who moved down to Wittsend from Marquette. It is known they were part of the scholarly community there until, apparently, they decided one day to begin a glass works in Wittsend.

Roy and Judy are in their early 30's and have two small children, as yet too young to be of much help in the business. This explains Arni's apprenticeship. It is an unspoken agreement between the two men that when the children are grown or when Arni finally heads off to the University, the fledgling Maki glass works will carry on without him.

For the moment, the three glass workers are excited about the upcoming visit of a stranger in the spring. At Ray's request, Arni made a side trip to the town of the Lakers on his way back from Marquette. The Lakers have promised to send a representative to see the works at the beginning of the next season. If things go well, Maki glass may soon be seen all over Superior.

NORTH WIND

A young buck of 24 years, North Wind finds himself the opinion leader for what might best be described as the "young men's party", though nothing so formal exists even in the minds of its "members".

There has always been a 'young men's party', it crops up every time a new bunch of young men come of age. Sometimes they try to do something as a group and sometimes they just talk. Not much changes, really. Sooner or later the young men get married, settle down, raise families and begin to live in a quieter manner. The older, wiser villagers don't pay much attention to the youngsters.

North Wind is typical although unusually competent and possessed of more than his share of talents and integrity. His biggest problem is that he is bored. He hunts bear with a spear, and has an impressive necklace of claws as a result. He agitates for an all-Wittsend campaign against the cons, against the wolf packs and against just about anything he can think of. While his "followers" try to imitate him they are more successful imitating his words than his deeds.

North Wind is quick tempered and proud, but tempering these is a fine sense of justice. He thinks well and quickly, if you can just get him to sit still long enough.

The older villagers recognize in him the qualities of a leader. If he lives they expect great things of him.

SAM HANCOCK

Sam is not really a Wittsender, though he is an Upanite. Sam is a trader from Marquette who got caught in Wittsend by the sudden onset of winter.

Sam doesn't like being called a trader. He prefers the title 'Wilderness Outfitter', whatever that may be. When caught here in late October, he 'rented' a lodge for some of his goods and promptly nailed up a sign over the door which reads:

Sears

Catalog Outlet

When asked about the sign he mumbles something like "neighborhood beautification, peasant" and shuts up.

Sam has done well this winter trading things from Marquette that are rare or unavailable here. Lanterns, fine leather, copper jewelry, and paper are some of the things that were particularly hot items with the Wittsenders. Sam will, of course, be the first to deny that he is doing well. He mutters things about "ruination" and "bankruptcy". His fellow Upanites have been muttering about "usury", but so far no lynch mobs have formed.

Sam loudly proclaims he is not and never will be a Wittsender. But this winter he has availed himself of the bouvine charms of a local widow. Recently he has been toying with the idea of settling here.

'MELODY' WIND-IN-THE-PINES

In her early 30's, Melody is unmarried and perhaps the most widely known member of the Wittsend community. Melody crafts zithers, recorders, drums and other musical instruments. Her work is famous throughout the U.P. She has spent time at the University and recently, much to the sorrow of the scholars, moved to Wittsend. It just happens she likes Wittsend. She plays and sings as well as she crafts and will often play for the people of Wittsend.

Each spring sees many bucks converging on Wittsend to speak with Melody. Not because of Melody herself, for while she is a pleasant woman, she is rather plain. Instead it is because there is no better wooing gift in all of the U.P. than an instrument crafted by Melody's skilled hands. She is well loved by the community.

MATTHEW 'MAT' WELCH

Mat is only 29, a ridiculously young age for the position he holds, which is head man of Wittsend. This position is denoted by Mat's title of Judge Welch. He'll hold this job until he gets tired of it or the people get tired of him.

Mat is a bit of puritan who never drinks or "gets crazy." He's still single and eligible young women look upon him as their



ancestors once looked upon young lawyers. When asked why he is so young and holds so important a place in society, he smiles and remarks he doesn't know himself, especially as he doesn't even look juris.

Certainly he is possessed of an unusual amount of common sense. His counsel is always well thought out and sound; such decisions as he makes are always tempered with mercy. As Mat says "The thing that makes this job worth doing is that now and then you get to help people who need help."

When Mat is not working in his capacity as Judge of Wittsend (which is usually), he is hard at work in his blacksmith shop. He spends a fair amount of time explaining to Finns that he just can't shoe an elk. But he makes up for this by referring to all of their ladies as 'Valkyries'. Mat likes being a smith and points out it's been in the family back to Weyland.

Mat would like to do something about the cons but is waiting for the strength of the village to reach the point where it will be a sure thing. He has an heirloom of his house, a rifle, that is carefully maintained. It is a German H&K G-3 and it requires 7.62mm NATO ammunition which has not been seen in these parts for over 100 years. Still, the weapon is in good condition and could be fired tomorrow.

PROJECT DAMOCLES

I. SHERLOCK

Excerpt from USAF file TS1-SM013:

"... only realizing its full capabilities as we near completion. One thing is certain even now. In Damocles the United States has created the most advanced electronic intelligence system every imagined."

There is a date corresponding to the official beginning of Project Damocles. This date marks the end of feasibility studies and not the beginning of the idea. To get at the root of Damocles it is necessary to go back to the days of the first computers; for it was here that Damocles truly began.

From the beginning computers were developed as an aid to warfare. The first electronic computers, whose programming was done by changing wiring, were designed to aid in the computation of ballistics for artillery or as an aid to cryptanalysts trying to break the German codes of World War II. It was some time before people began to realize the true power of computers lay not in their ability to do a task quickly and reliably, but that they could do "any" task quickly and reliably. That is, any task which could be accurately described and logically analyzed.

It was A.M. Turing who posed some of the earliest and most basic questions about computers. Could an electronic intelligence be created? If it was, how could its intelligence be determined? What, in fact, was intelligence? Turing devised

what was long thought to be the single best test of intelligence: If a person questioned a computer for some time and was unable to determine that it was a computer they were communicating with, then the machine could be said to be truly intelligent.

By the late sixties, great advances had been made in the development of computers. The entire financial and military structure of the United States depended on them. Intercontinental missiles could not be fired without them, radar and other information nets were run by computers, the National Reserve system and its records had come to depend on the information control provided by computers. Both defense and banking depended on the computer links stretching around the world. Time sharing, where many people could be linked in to a single computer at the same time had become common; so more people had exposure to computers.

In the early seventies a program called "Eliza" was written. Eliza took the part of a therapist talking to a patient. The program analyzed what the patient said, looking for particular words that indicated a special interest. It then used these key words in questions intended to lead the patient onwards. Eventually Eliza was put to the ultimate test. A person sat down at a terminal one day and was told that they were talking to a therapist on the other side of the country who they could type questions to and who would talk to them about their problems. The person conversed with Eliza for about ten minutes and left the terminal convinced they had been discussing their problems with a doctor. The Turing test had seemingly been met.

At about the same time the first single chip computer was being built in a California laboratory. What a decade before had cost a million dollars and filled an entire room could now be put into a shoe box size container and would cost less than \$200 in parts. The military began putting these "micros" into everything from tanks and aircraft to satellites and submarines. Eventually, they began hooking computers together into networks of chips that "talked" to one another and compared and integrated information as it became available.

By the 1980's the idea of "distributed processing" was being eagerly discussed. The idea behind distributed processing was that groups of chips could be hooked together into one system where the work done was "distributed" between cells of the network, each of which could potentially do anything any other cell could do. By this time the actual design of computers was beginning to resemble some of the structures of the brain. Then in the middle 80's Damocles was begun.

II. THE MILITARY INDUSTRIAL COMPLEX

Theorists had been saying for years that warfare had changed radically. By the end of the 1960's the "lethality of the modern battle field" had become a catch phrase. The 1973 Arab-Israeli war brought the vagueness of theory face to face with the reality of fire and blood. The awesome destructive power of advanced weapons systems was now more readily understood. The might of technology brought an even more gruesome death to the battlefield.

Few recognized the weaknesses of this new technology, even though it was there for those who looked. Since the early 60's, it had been obvious in the armed forces of the United States. When the U.S. ended the draft, the symptoms became a disease.

It had always been true a weapon was only as good as the soldier using it. With modern technology a new corollary was added: A weapon is only effective if properly understood by the soldier. Understanding includes the ability to maintain and service the weapon. The complexity of modern weapons was such that few understood how they worked well enough to repair and maintain them.

High technology was the backbone of the U.S. strategic forces and in particular, the Strategic Air Command. From the point of view of international credibility this level of technology was vital to America's nuclear deterrent force since the belief in America's technical superiority was as much a deterrent as the number of weapons stockpiled. But a highly technical weapons system becomes so much junk if it is not carefully maintained and servicing these weapons is a highly demanding and complex

task requiring extensive training and constant attention.

At the same time, weapons in the field were obsolete compared to those still on drafting boards and these in turn were outdated by those in the minds of their creators. No one person could keep up with all of the ideas and information pouring forth from these sources. Seemingly unrelated advances in theory could be combined to create a breakthrough in a third field. But there were too few people to put the pieces together, too few people who could understand and grasp what was happening.

As weapons systems became more complex and as weapons technology continued to advance beyond a single person's ability to absorb it, the question of who could understand the weapons well enough to use them became vital. Even by the early 60's the Armed Forces of the United States had noticed a decline in the average intelligence of its members. When an all volunteer force replaced the draft, the mean intelligence in the forces fell again and the average level of education fell even more. In USA-EUR in 1976 entire units of M60-A2 tanks were out of service. The M60-A2 was a technically advanced weapons system with a particularly sophisticated turret interior. The intelligence and education required to keep them running was such that there were no longer enough capable mechanics to do the job.

In more technical areas the problems were even worse. The government labored to keep the enormity of the problem a secret while they desperately searched for an answer. The Air Force had to come first given the importance of its strategic role, and so Project Sherlock was begun.

At its inception Sherlock was a relatively modest project that had a limited objective. The Air Force was well aware of the advances being made in the computer field and that some computers could now be thought of as limited Electronic Intelligences (EIs). It was reasoned that individual human minds were limited in terms of speed and memory. These two factors prevented the assimilation and correlation of the information essential to modern weapons technology. Computers are fast and capacity was no longer a problem. Not only were advances in chip design and capability being made daily but an EI could be built to any size and expanded as necessary.

An EI system carefully and painstakingly programmed could rapidly assimilate and cross-reference data. It could fit the pieces together, synthesize and present data in useful forms upon request. The information gap could be solved.

There remained the problem of maintenance. Often, simply identifying the source of a problem was next to impossible. Although it may be easy to spot a problem and identify a part which had failed the questions remained: Why had it failed? Would it fail again when replaced? Had other systems experienced similar problems? Would other units develop the same problem? Why?

Again, humans were too slow, too limited to handle the problem efficiently. But with Sherlock there would be a system with all the technical data of the strategic arsenal. How much would it take to make this EI into a "theoretical maintenance machine?" Could it trouble shoot problems and analyze design theory? Could it be done at all?

The answer was that it could be done but only if it was expanded. So, before Sherlock had even been started it was redesigned. For Sherlock to fulfill its new role, it would have to be provided with on site terminals at all existing and future installations. In order to perform maintenance effectively, it needed to be able to constantly monitor a system, since problems had to be identified before they reached the "smoke" phase.

As the design changed, the idea expanded. Since Sherlock was fast, well informed and able to identify existing and potential malfunctions and recommend corrective action it was bound to be more effective than the current maintenance procedures. Why not place maintenance personnel at the disposal of Sherlock? Indeed, why not construct robot extensions of Sherlock to provide it with a direct maintenance capability? Human wrench jockeys would no longer have to understand what they were doing and in most cases would be unnecessary. A robot would not have to eat, sleep or be paid. No uniforms, just some paint

The design team began referring to Sherlock as "Wrench". Almost imperceptably they stopped thinking of Sherlock/Wrench as "it" and began thinking of it as "he".

There was a problem though. If Sherlock became a reality and all theory and maintenance went through him, he would in time become indispensable to the operation of the entire strategic defense system. He would also become its most vulnerable point. A threat to Sherlock would render the rest of the system useless. Sherlock needed to be defended.

It is difficult to mount an attack on something if you do not know it exists. The Sherlock Project had been Top Secret. Now it became a "drop dead before reading" affair. But secrecy is never enough. Sherlock needed to be physically defended. The question became what would Sherlock need to be defended against?

A nuclear attack? There is no good defense against H-bombs. But Sherlock could be buried deeply and shielded from radiation and electromagnetic interference.

Ground assault? If things got to that point, the need for strategic arms would have disappeared. Sherlock would have lost his importance and his loss would no longer be fatal. Conventional ground attack is best countered by conventional means. No special precautions needed to be taken to protect Sherlock from this threat.

The worst threat to Sherlock would come from a small commando type raid or through sabotage. Here again the best defense lay in secrecy; don't let Sherlock become a target. Still this was not enough. Security is always flawed, especially where

big money and long research are concerned.

To prevent physical destruction of a known target it is necessary to provide physical protection. This can be anything from a man with a gun to an airborne division. Of course nothing exposes a secret like a bunch of guards around something that officially doesn't exist.

Sherlock had to be guarded at all times against raids. This protection had to be on the spot since close by isn't good enough. Human guards, and the support needed to maintain them were out of the question.

An impasse had been reached when someone asked, "Why can't Sherlock handle his own defense?"

DAMOCLES

"Of all the problems thus far encountered in the creation of what later became known as Project Damocles, the question of security was by far the most difficult. The eventual solution is without a doubt the key factor in the evolution of the Sherlock Project into Project Damocles." (Excerpt from: "Project Damocles. Report to the President, 01 August 1988.")

This problem was an order of magnitude beyond all the others: Could Sherlock defend himself?

The answer was yes, if

It was no problem to provide Sherlock with weapons and to program him in their use. All it would take was painstaking care and time. It was not possible to program for all of the enormous variables that a "shooting situation" always involves, especially since people usually deal with such situations with a regrettable lack of success. However, people could provide Sherlock with the



pertinent information needed and could give him instructions covering a wide range of situations. This is, after all, how people teach other people. Too often, though, it is not enough.

Unless Sherlock could program itself. A computer has no emotion, no fear of death, nothing to cloud its judgement. It is fast and given all pertinent data it should be able to choose the right combination of actions every time. After long debate the decision was made to do it.

It took years, involved several breakdowns (human and electronic), cost billions and added volumes of knowledge to the field.

By 1984 Sherlock was on the way to being a reality. The many pieces of Damocles were being assembled but in the minds of his creators the design phase had never stopped.

Sherlock would know more about the U.S. strategic forces than any human being could hope to know. He would be more up to date on theory and development. He would be able to defend himself to a certain degree. He might even be able to think and make choices the way a human did. So the final development should have been obvious.

Project Damocles replaced the Sherlock Project. No one knew what could be expected from a no-holds-barred nuclear war. An EI would survive where a human would not. An EI which could think could carry on the war whether his masters lived or not and such an intelligence could "ensure" second strike. There could be no enemy victory. The ultimate deterrent. The ultimate vengeance.

Give it the missiles and it would become the sword hanging over the enemy's head. Project Damocles.

III. PHYSICAL HISTORY

Construction of Damocles began in 1980 and was scheduled to take 7 years to complete. Damocles was actually undergoing the final stages of testing when the war began.

The site of the Damocles complex lay near the center of the Upper Peninsula of Michigan. This site was chosen for a variety of reasons, some of which were the same as the Navy's aborted ELF system. Perhaps the most important reason lay in the isolation of the area. There were few locals to dodge as the people of the "UP" are independent and reserved by nature — they mind their own business. Also, there was not a thing worth bombing in the area with the possible exception of two former SAC bases, and Damocles was not located near either of them. Lastly, the entire UP was outside of the most intense of the projected fallout patterns.

As Project Damocles neared completion there was a great deal of controversy over handing the defenses of the U.S. over to a machine. The idea of the machine having control only after human control had ceased was only slightly more acceptable.

In the end, an exhaustive series of tests were ordered. These tests included partial linkages of Damocles into the Defense Communications Net which would allow Damocles to monitor but not participate in the normal traffic on the net. This let the evaluators of the tests gauge the capabilities of the system in terms of its most important and controversial function: independent evaluation of a strategic situation.

Damocles was "wired for sound". He "listened to" radar, satellites, AWACS and particularly NORAD HQ in Cheyenne Mountain.

The tests were also used to determine the extent of Damocles' self-programming and learning capabilities. He was provided with a wide variety of non-technical material to absorb and "think" about. In addition, combat maneuvers were planned to test Damocles' ability to defend himself from small unit attacks and sabotage. A unit of ground troops were to be used in mock attacks on Damocles and his responses evaluated. Neither of these tests were completed before the war began and one of the combat exercises was scheduled to begin the day the war broke out.

IV. (The following is an excerpt from *PROJECT DAMOCLES, Report to the President, 01 August, 1988).

PROJECT DAMOCLES

Project Damocles is a unique effort in computing history. It marks the first time since the invention of electronic calculating machines that a conscious and concerted effort has been made to break with the concept of computers pioneered by Von Neumann. Damocles is an object oriented system. While its conceptual framework is derived from the principles behind object oriented languages like Smalltalk and lambda languages like LISP, its architecture is radically different.

To begin with it is perhaps the first truly distributed system. Its design is such that it is composed of a large number of coequal processors each of which is capable of functioning independently or in concert with others. This is made possible in part by its unique machine language which is based on an extension of lambda calculus called combinators. This notation describes the interaction of objects rather than the transfer of data from one place to another. Among other things this means that according to the Church-Rosser Theorem there is no specific order of interaction that must be followed. Damocles can analyze actions A, B, and C; combine the separate results and produce the same overall effect no matter what order they are done in individually.

Among other things this flexibility of order of operation creates a truly parallel system. This gives Damocles the capability of optimizing its operations into the most efficient patterns possible. Initially this independence from the usual time sequence caused some novel problems such as when the defense robots started firing before they had targeted their guns. However by increasing the relative importance of real-world events and by putting a requisite of receipt-of-ready signal on the firing action these problems were generally eliminated.

Damocles view of itself is that of one monolithic object. This view can be broken into numerous separate objects of varying size and location depending on the interaction of objects at any given moment. This means that when working on a problem Damocles can work as a single entity or as a number of smaller entities. It also means that Damocles can split itself into several sections that can independently work on separate problems. However, since it is essentially a single object these separate problems can interact by creating an ongoing and continually changing state-of-the-machine.

Initially there are two main objects which contain all other objects. These are the 'Real World Object' (RWO) and the 'Internal Cluster' (IC). The RWO contains all the objects which are defined as requiring special connections to Damocles and having time constraints. Hence all robots, display screens, voice synthesizers and acoustic and visual couplers are considered part of this object while all objects within the main hardware are considered part of the IC.

ROBOTS

As an example of how Damocles operates, a maintenance robot's actions will be examined in detail.

Each robot has a limited computational capacity of the type that Damocles has. A robot will then run in one of three modes: Independent, Supervised, and Slaved.

In the Independent mode the robot functions entirely on its own to do a limited number of routine tasks. In this mode it has a list of actions that look like this:

- Check Device
- Analyze Failure
- Repair Function
- Report
- Call for Help
- Signal Security Alarm
- Move Location

Each of these actions contains a list of objects that interact to produce the action listed. So Check Device looks like this:

View Device (includes scanning)
Talk to Device
Test Device
Monitor Device

Naturally a maintenance robot has (or can get from Damocles) a copy of any and all objects the device being examined uses and can parallel the functions of the equipment in order to find errors. This is a common procedure in all Damocles robots as the natural parallelism of the system makes it natural to parallel the operation of the various part of the system.

In the second mode, the Supervised mode, Damocles observes and from time to time directs the maintenance robot by sending messages to it that it feels are necessary. In this mode Damocles is viewed by the robot as being part of the outside world and the messages received are given a high response priority. This allows Damocles to bring to bear its more comprehensive view of a problem as well as its knowledge of other similar occurrences.

In the last mode, the Slaved mode, Damocles takes direct control of the robot so that the robot becomes part of Damocles' internal world. This means that all of the robot's internal objects are treated as part of Damocles and Damocles directs the robot through the interaction of various objects some of which may be in the robot and others in other parts of the system. This mode has the effect of increasing Damocles' general capacity since the same hardware and software was used in the robots was used in Damocles' own IC. Hence when a problem requires greater capacity, Damocles can temporarily requisition unused capacity from various sources including robots and other intelligent parts of the system other than its IC.

It can also copy a certain amount of its cluster into any available locations and as long as the communication links are intact, it can continue to function in a limited fashion even if its main hardware has been destroyed. The Slaved mode also allows Damocles greater scope in analyzing a problem since it increases its real world interactions. Thus it is not unusual for a number of slaved robots to be clustered around a malfunctioning piece of equipment as this gives Damocles a more complete view of a situation. Naturally the defense robots have a built-in dislike for clustering together physically as it makes them a more obvious target.

RETAIN

RETAIN is the name of Damocles' real time response cluster. It is an acronym for REal Time Analysis and Integration Network. Its basic function is to handle problems in the real world where time is often an important factor.

Its basic strategy is to search for recurring patterns in the interaction of objects. As it discovers patterns it notes their discovery and occurrence in time and their variance from previous patterns. It will also use these patterns as the basis for predictions of future occurrences and it will use these predictions to plan its own responses. Thus if a pattern is noted regarding the loading of a missile into a silo such that undue stress is placed on a component which results in a recurring failure of a missile, Damocles will project various other patterns of loading the missile and then select the method that will produce the best result of load relative to equipment operation. Note that at all times Damocles will seek the best resultant pattern and not simply one that will eliminate the immediate problem. Thus in the example given Damocles will not change the method of loading the missile so that another part takes the stress even if that gives the greatest protection to the part that had initially failed.

Since Damocles maintains a continually updated view of failures, a malfunction that differs in symptoms but has similar causes as a previous error will be detected by RETAIN as it compares the interactions that led up to the failure and those of the previous case. This will be seen as a possible error in design and the causes will be compared to see if there are any deeper patterns.

In a defense capacity this means that there is a certain vulner-

ability to totally random attacks as there would be no patterns to use for predicting future actions. However, most people are unable to sustain a totally random mode of attack for any length of time, particularly since most attacks follow standard patterns taught by the military. Damocles would quickly detect such an attack pattern and would coordinate his defenses based on his forward projections of the situation.

In this way Damocles is similar to a chess master who considers only those lines of attack or defense that are worth considering. Other attacks are simply inferior based on the overall situation and can be dealt with easily and efficiently.

SECURITY

Data security is achieved by means of providing a limited view of Damocles depending on the user's security clearance. This is done by specifying a different view of Damocles for each persons. The hardware would not allow a person to access part of a cluster that was not within their permitted view.

It would still be possible to communicate with protected clusters as messages from other clusters would be accepted as being a message from outside of the users's cluster. Similarly, messages could be sent from a secure cluster to an outside cluster but spontaneously generated messages would not be allowed. It would be physically impossible to transfer part of a restricted cluster to an unrestricted cluster as the restricted cluster would not recognize the unrestricted area as part of the system.

Access security to Damocles' peripherals is based on both an identification card and a fingerprint/voice print check. In the case of the fingerprint check, any digitizing pad could be used to compare with the persons known fingerprints while a voice print could be accepted from any microphone attached to the system. An additional check is made that the person being fingerprinted still has a pulse while the voice print also checks for mechanical reproduction of a person's voice (e.g., a tape recording). The voice print is somewhat more reliable but requires a certain amount of speech before a positive identification can be made.

(EXCERPT ENDS)

V. TOYS

From the beginning of the Sherlock Project, Damocles' designers had been given free rein to what they wanted as long as it worked. Money was no object and ideas that had been theory became reality in the course of the Project.

Since the original plan was to make a machine that could sort through and present information on nuclear weaponry, there was a great deal of emphasis on graphic displays and input devices. Initially plasma display panels were used to display maps, schematics, circuitry and other graphics relating to the Project and a modified, wireless "light pen" was used to point at, select and draw objects. As these flat screens were only inches thick they were often placed on a table top like a pad of paper or built into desks with a mechanism that allowed them to be positioned at a convenient angle.

Later, due to the sophistication and interlocking nature of the weapons systems, the need for more detailed displays became obvious and a quantum leap was made. In 1985 the first holographic display was implemented. This allowed the circuitry of a missile to be projected three dimensionally into a room. Technicians could walk into these images and using an even simpler "position pen" they could point at a section of the holograph. Damocles could detect the pen's position in space and determine what part of the holograph was being pointed at, thus providing the holographic display with an interactive graphical input device.

Initially this display technique required a special room with a large number of very sensitive projectors. Later, as the method was perfected, a simpler version was created and eventually every room in the Damocles complex had these projectors. It was a common sight in the later stages of the Project to see a group of technicians standing in a room holding the grey position pens in their hands pointing at part of a missile that their hand had seemingly passed into.

Since a television camera is essentially a scanning device that builds an image up on film, a simple adaptation of a camera produced on a graphical input device of massive proportions for Damocles. He was able to review new circuits photographically in great detail and, providing he had information on the parts involved, produce circuit diagrams and even functional breakdowns of the circuitry.

Radar and other similar devices were also available to Damocles, particularly for the purposes of handling his defensive capabilities. These were treated slightly differently from TV cameras as it was necessary to digitize an entire scan of a radar antenna before handing it over to Damocles. In the case of LASER range finding equipment, the analogue signals were simply converted to a digital stream and added to the other available data for weapons systems.

For the purpose of commando detection, a network of geophones were put in place around the complex. This allowed Damocles to detect any unusual movement in the area and to identify the weight and location of the movement source.

For the manipulation of physical objects a page was taken from the science fiction writer Robert Heinlein. All robots needed to do precision work were given Waldoes. These miniature manipulators simulated the operation of the human hand but to a degree of precision and exactness that was beyond an unassisted person. These Waldoes were built in a variety of sizes for different tasks including micro-miniature ones that were used in chip testing and construction. This proved most necessary as some of the circuitry developed for the robots was designed by Damocles and was deemed too security sensitive to let out to a private company.

Another area that Project Damocles produced significant breakthroughs was in the field of natural language speech and speech recognition. Initially a vocal encoder was provided to allow Damocles to give instructions to maintenance personnel. As an inevitable consequence of misunderstandings between Damocles and the maintenance people, it was decided to add a more complex vocabulary and eventually grammars and lexical analyses. This finally led to the need for development of natural language capabilities since a person working with the guts of a missile could hardly take the time to read a wad of computer listings giving detailed procedural instructions when he or she had questions.

Since natural language is as much a learned capability as it is a strictly defined process, it was necessary to give Damocles access to a wider variety of written materials than the technical manuals he had been given for the cross-referencing of weapons data. Fiction, history, political tracts and even poetry were added to Damocles' reading list.

Finally, one day late in 1987, a group of tired scientists proposed that the Turing test be invoked. After suggesting to Damocles the outline of a conversation, a call was made through secure lines to a top-level Project general in the Pentagon. Damocles, taking the voice of one of the research team's leading scientists talked with the general for over an hour concerning the upcoming defense tests that were scheduled to begin early the next year. At the end of the hour, as the conversation was ending, the general gave Damocles a personal message from a friend of the scientist Damocles was impersonating. Damocles responded in kind and pleasantly "hung up" the phone.

The Turing test had at last been met. Damocles was alive!

VI. THE DAMOCLES PERIMETER

GENERAL

All of the following applies to all areas of the Damocles perimeter, unless otherwise stated.

The perimeter area of Damocles is defined as everything within the cleared fire zone beyond the first fence and everything above ground except the bunker interiors.

Excepting the artificial blast shield and hills (berms) protecting the bunkers, the entire area is flat and treeless. There is no concealment or cover in this area. For purposes of the game, the ground is covered with snow to a depth of at least two feet.

A. Clear Zone or Cleared Fire Zone

An area of flat, clear ground 400 meters long and 340 meters wide, this area is at present covered with snow. During warmer weather Damocles keeps this area clear by the simple means of running MDUs across every foot of it once a month.

Ground seismic detection devices are buried all over the area. Due to the depth of snow on the ground, these will not detect the movement of people on skis or snowshoes. They will detect people on foot or vehicles not on skis.

The area is criss-crossed with tracks from Damocles' MDUs.

B. The Road

The road is not obvious, as there is too much snow covering it. There is a gate and 100 meters south of the gate a gap in the trees where the road enters the forest.

On the road 10 meters inside the trees, there is a half buried jeep. It used to be blue with USAF markings on it, but the 150 years since it last ran have turned it into a rusting hulk which shows up clearly against the snow.

Those troubling to investigate the jeep will find it has rusted solid and is of no use even for spare parts. There are no bullet holes or other signs of violence on it. The jeep looks like it 'just stopped' here in the middle of the road 150 years ago.

Inside the jeep are the remains of a man, now a skeleton. There are no signs of violence on the skeleton. Nor does it appear that animals disturbed the remains. With these remains there are personal effects. These are under the snow, lying where they fell some years before as the clothing rotted away.

Among these odds and ends are a .45 automatic pistol (rusted solid), corroded metal insignia and two plastic cards. The first card is an I.D. card for Lt. Col. Gordon MacDonald of the U.S. Air Force. The other is a white plastic card which closely resembles a credit card. It has raised surfaces and holes punched in it, obviously for a computer. Printed on it are the words "Project Damocles Access Card" and "Lt. Col. MacDonald, G., USAF". On one end of the card there are three colored bands running from top to bottom. The colors are brown, yellow and green in that order. Also present are the words: "INSERT THIS END".

PD NOTE: MacDonald was killed by a disease from a biological weapon. He contracted this disease somewhere outside of the U.P. and died trying to return to the complex.

C. The Fences

Surrounding the complex and providing the actual perimeter and first line of defense for Damocles are two fences. These chain link fences are each 10 feet high and extend three feet into the ground. Buried under them and resting on the tops are rolls of "razor tape" barbed wire. This stuff is still sharp and now rusty as well. Very unpleasant. The fences are designed to make it difficult to tunnel beneath them.

PD NOTE: Both fences have an effective height of 9 feet or less due to the snow.

Fences are 10 feet apart and the area between them is mined with Claymores. These can be set off by trip wires or electronically detonated by Damocles. However, Damocles must "see" his target for him to set off a mine.

PD NOTE: Because of the snow on the ground, the trip wires will not be tripped unless people move between the fences WITHOUT snowshoes or skis.

There are motion/vibration sensors concealed inside the steel poles supporting the fence. These will alert Damocles if any man-sized weight is placed on the fences. It will also tell Damocles which 10 foot section of fence is being crossed.

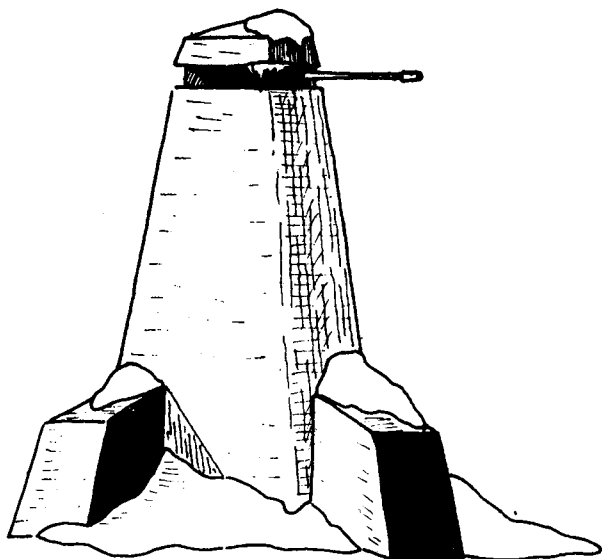
PD NOTE: Winds in excess of 20 mph will render the fence sensors inoperative. In this situation Damocles cannot tell if they are working or not.

D. The Gate

There are two gates, one set in each fence. These are sliding, chain link, fully automated gates. Their motor is buried and controlled by Damocles.

To the right of the outer gate there is an armored access box. It is equipped with a microphone, a speaker and a card slot. This functions automatically and will open the gates if a Damocles access card is inserted in the slot. Damocles can override the automatic mechanism, but must have a reason to do so. The apparatus at the gate can take a voice print but ordinarily this is not required.

The gate itself is not mined. All MDU tracks pass through the gate so the snow level here is somewhat lower than the surrounding area as it has been packed down. As a result, the entry way is slippery with ice.



E. Gun Towers

There are four 20 foot gun towers, one in each corner of the compound. These are made of reinforced concrete and steel. Near the summit of each tower is an M2HB .50 caliber as modified for use by Damocles. The gun can rotate 360° and fire inside or outside of the fenced area. These guns are encased in armored rings. Beside each are optical and thermal sighting instruments. The guns are accurate to one mile if they have a clear shot (outside the perimeter this is never the case unless the target is flying).

The guns are slaved directly to Damocles. All of them can fire independently at different targets at the same time. Each gun has 500 rounds but they only fire 10 round bursts. Note that a gun cannot fire within 30 feet of the tower it is mounted on, as it cannot depress far enough. This is called a "dead zone".

Towers can take 200 E-factor points before the gun will stop working. If the guns or the sighting instruments are hit they are automatically destroyed. This happens only when a player rolls an 02 or less when firing.

Each tower is connected to the nearest MDU bunker by an underground tunnel. These tunnels are cylindrical and one meter in diameter at their base. They exist to allow MUs access to the towers for maintenance and resupplying ammunition for the guns.

"Knocking out" one tower in no way affects the others.

F. MDU Bunkers

Each of these four bunkers houses one of Damocles' Mobile Defense Units. These bunkers were built above ground but earth



was then piled against three of the four walls. Each appears to be a small hill. This adds extra armor against conventional fire as well as blast protection from nuclear detonations.

All walls are one meter thick and made of steel and concrete. The door in each bunker is armored like the door to the access bunker (see VII, B). The artificial "hills" or beams piled on each bunker make them impervious to any weapons the Morrow Project team should have. Only the roofs and the door sides can be attacked directly. All of the doors face inward toward the access bunker. There is only one door in each bunker, the one used by the vehicle.

The inside of each bunker provides parking for the MDU, and an assortment of spare parts and ammunition for the MDU's guns. This ammunition is stored in such a way that it is not in danger from gun fire when the doors are open. There is also a 2 meter wide, 2 meter tall ramp that descends toward the access bunker. This ramp is there for the use of MUs servicing or resupplying the MDUs. It is off of this ramp that a tunnel leads to the nearest gun tower. The ramps drop below the surface and lead to Yellow level.

G. Blast Shield

This is a large, artificial hill (berm) standing in front of the access bunker. At its tallest it is 12 feet high and it is wide enough to hide the front of the access bunker from view.

This berm is solid and slopes gently to its summit from three sides. Its fourth side faces the armored door of the access bunker and is flat and faced with concrete. The distance between the wall of the berm and the front of the access bunker is 10 meters.

PD NOTE: This artificial "trench" between the berm and the access bunker is the only place in the compound where none of the tower guns can hit. However, anything which shows beyond the edges of the walls or over the top of the berm or the bunker is an exposed target.

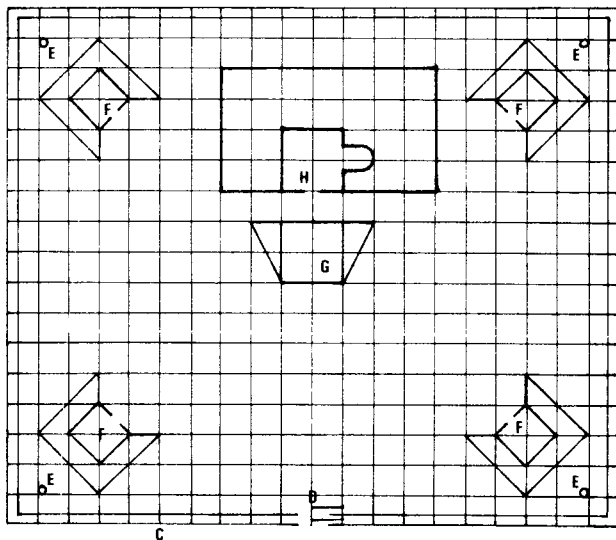
The berm exists solely to protect the face of the access bunker from a blast. It does.

H. The Access Bunker Exterior

Facing the blast wall of the berm is a perfectly featureless wall having only an armored door and an access box. These are described in the Brown level description of the entryway (see VII, A & B).

The remainder of the bunker is the same as the vehicular bunkers described in 'F'. It is impervious to the Morrow Project team's weapons.

VII. THE DAMOCLES COMPLEX



Damocles surface complex

1 Sq = 10 meters

GENERAL LAYOUT

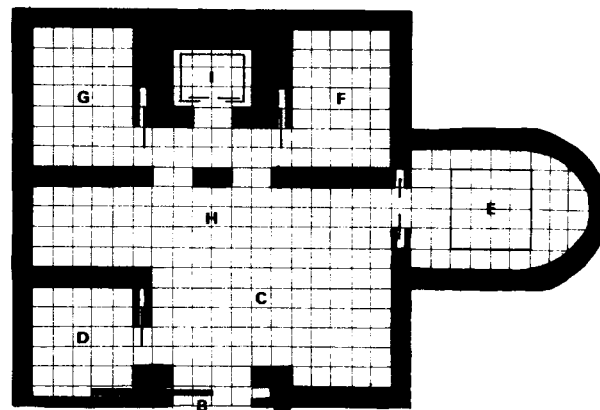
Damocles lies within an underground complex five levels deep. The five levels are color coded as follows:

- Brown — Surface, bunkers.
- Yellow — 1st level subsurface, tunnels and access.
- Green — 2nd level subsurface, living quarters and shops.
- Blue — 3rd level subsurface, computer level and work areas.
- Red — 4th level subsurface, power plant and fusion bottle.

Each of these levels is detailed below. The following are general statements about the entire complex:

1. Doors on the Brown level are locked. All others are closed but not locked.
2. The elevator is operated with possession of an access card. Without one the elevator will NOT work.
3. Damocles has 'eyes' (cameras) and 'ears' (microphones) in all areas including corridors. Exceptions to this are the elevator, personal rooms on the Green level, latrines and all semi-circular sensor rooms or shafts. Damocles has speakers in all areas. While the eyes and ears can be destroyed there are a lot of them. The average is four of each in every room. These are always positioned so that any two of either can cover an entire room or hall. No attempt is made to conceal any of them.
4. Two CO2 fire extinguishers are in brackets on the walls of every hall. They are charged and usable.
5. All areas are lit by colored lights corresponding to the color of the level. There are no light switches as Damocles controls all lighting. If Damocles dims or turns off the lights the team must get to the reactor room to get them on again. Ordinarily there is enough light of whatever color to easily read by. All walls, floors and ceilings in each level are painted in the color of that level.
6. The air in the complex is dry and the temperature is kept at a constant 70° F. This has served to semi-preserve the human bodies in the complex. The odors of decay are long gone.

BROWN LEVEL



1 square equals 1 meter

BROWN LEVEL — The Interior of the Damocles Access Bunker

A. Access Box

This is an armored box used for entry to the complex. Similar to the one at the gate, it is more sophisticated. This box provides Damocles with both visual and aural information on anything taking place at the door of the access bunker.

To enter, an entry card must be inserted in this device. Damocles will demand voice identification in order to get a voice print of the person entering. Fingerprints will also be checked from the card unless the person entering is wearing gloves or mittens. This armored 'box' is linked directly to Damocles. He can see, hear and speak through it. The entry box can be destroyed by 20 E-factor points of damage.

B. Armored Door

This door slides open. It will stop all the team's small arms fire, grenades and mines. However, it can be penetrated by an Armburst, LAW or demolition charge. It can only be opened by Damocles or by someone on the inside of the bunker.

PD NOTE: It is easier for the team to punch a hole in the concrete wall than it is to get through this door. However, the team is not likely to be aware of this.

C. Internal Motor Pool

This area was originally used as the parking place for small vehicles such as jeeps and light trucks. Once there were tools and spare parts here for routine maintenance and repairs. The tools and spare parts have long since disappeared into Damocles.

There is one USAF jeep still parked here. It is in perfect condition, save for no gasoline in its tank.

D. Door Machinery

This room contains the machinery to open the armored door to the bunker. There are also hydraulic arrangements for the manual operation of the door. If this machinery is destroyed, the door will remain in whatever position it is in.

E. Main Sensor Complex

This complex houses the battery of electronic instruments Damocles uses for long range communications including radio intercept, microwave transmission, relay, intercept and detection. There is also a phased-array, single pulse radar and a pair of ground surveillance radars.

1. **RADIO INTERCEPT:** Damocles does not use conventional radio himself, but is equipped to receive such transmissions. Damocles can receive Morrow Project radio signals. These are scrambled, so Damocles will be unable

to understand them unless he has one game week to analyze them.

2. **MICROWAVE:** All of Damocles' external communications with the MDU's, IDU's and SU's use microwave transmission. The Morrow Project team must be within 10 feet of the receiving or sending unit to detect these signals as microwave is a comparatively tight beam transmission and not a blanket frequency broadcast. If the team does intercept a microwave transmission they will not be able to understand it as it is a digital code used by Damocles to control the external units.
3. **PHASED-ARRAY RADAR:** This radar looks like a small black pyramid. It does not rotate but "looks" constantly in all directions. It is intended for air surveillance and thus has little use in detecting things on the ground.
4. **GROUND SURVEILLANCE RADAR:** There are two sets of this radar which are very similar to the units used by the Morrow Project. These can detect man-sized targets at one mile and vehicles at up to 3 miles. They are of limited use here as the heavy forest and rolling ground around the Damocles complex keep these radars "blind" beyond the clear zone surrounding the perimeter fence.

All of these instruments are mounted on an elevator (shaded area in Room E). When in use these instruments must be raised to the level of the bunker roof. A heavy armored port slides open to allow the elevator to reach the roof. When the instrument platform is retracted this port closes and the lift descends to Yellow Level. The door into Room E leads to the lift shaft. This allows maintenance units access to the sensing instruments.

When erected, these sensors rise to a maximum height of 20 feet above the bunker's roof. The instruments are not armored.

F. Sensor Door Mechanism

This room contains the machinery necessary to open and close the armored port above Room E. The purpose of this machinery is not immediately obvious and there are no arrangements to operate the port manually. If the machinery is destroyed the port will be stuck in whatever position it is in.

G. Elevator Mechanism

This room is occupied by the machinery which raises and lowers the elevator. Its purpose is also unclear. If this mechanism is destroyed the elevator will cease to operate.

H. Blast Shield

This is designed to protect the elevator from whatever might penetrate the bunker door.

I. Elevator

The following applies to the elevator and its doors on all floors.

The elevator rests within an 'armored' archway. The archway is a meter of steel reinforced concrete. However, the doors of the elevator can be forced or blown off. In the interior of the arch, to the right of the elevator doors, there is a card slot and a column of 5 square lights. These lights run from top to bottom in the following order:

Top:	Brown
	Yellow
	Green
	Blue
Bottom:	Red

If the Project Damocles ID card is placed in the card slot, the elevator will rise to the level at which the card was inserted (in this case, Brown level) and the doors will open.

The elevator is 2.5m tall, 3m wide and 2m deep. The interior is painted grey. On the right interior wall of the elevator the card slot and light array is repeated. The card must be inserted into the slot and the button of the level you desire to go to pressed. Note that the elevator will only go to those levels whose color appears on the access card. If Lt. Col. MacDonald's card is being

used, the elevator will only go to levels Brown, Yellow and Green. The elevator will not descend below level green.

Damocles will allow the Morrow team members to enter and use the elevator but will cut the power between levels. This need not be fatal as there are doors in the floor and the ceiling of the elevator. There is also a rather obvious panel in the wall of the elevator next to the column of lights. If this panel is opened (by yanking the ring attached) a variety of things will be seen. One of them is a telephone receiver. Naturally this is of no use as it connects only to Damocles. However, next to the receiver is a large switch marked:

"Emergency Power Override"

If this switch is thrown the power will return and the elevator will resume operation. The power comes directly from the fusion bottle on level Red and once this switch is thrown Damocles can no longer control the elevator.

The elevator will accommodate up to 10 people. The doors are armor class 9. Damocles is aware of this and will always wait for the doors to open before firing an IDU. Only two people can take cover behind the side walls of the elevator, any others will be in trouble when the shooting starts.

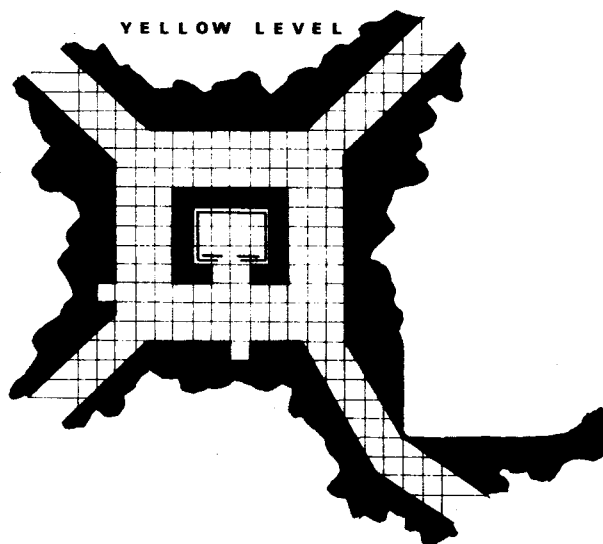
If, when the team members leave the elevator, they have their card in the slot in the elevator, the doors will not close and the elevator will remain in place. This is also the case, whether or not the card is left, if the emergency override is in operation.

If the elevator is rendered inoperative, the team can always rope their way up and down the shaft. This is dicey and it is left to the Project Director as to how much trouble the team gets into when trying such fun and games.

When the team enters the elevator for the first time they will find at the rear of the elevator a mummified (not a mummy) human body clothed in a radiological protective suit.

If the team decides to search the body (ghoulish lot), they will find:

1. Five 9mm size holes in the suit and body.
2. Civilian I.D. identifying the body's former occupant as Carver, Napoleon W.



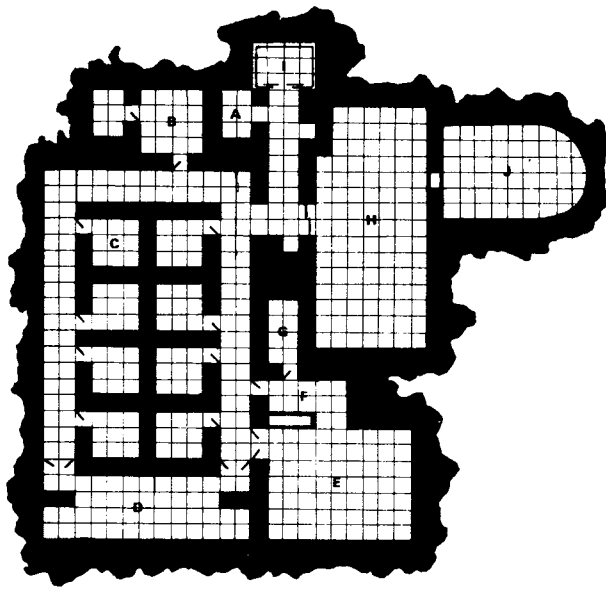
II. YELLOW LEVEL

This level is entirely sub-surface. Ceilings are 3m above floors and 2m below the floor of Brown level. All surfaces on this level are painted dull yellow.

This level has four access ways leading into the MDU bunkers. These access ways are made of concrete and slope upwards at 20° in order to allow the MUs and IDUs access. This is the only way into an MDU bunker short of blasting or entering such a bunker when the vehicle door is open.

In the walls of this level are two one meter wide niches

intended to shelter IDUs. There is nothing else on Yellow level.



GREEN LEVEL

III. GREEN LEVEL

This level is also sub-surface. The ceiling is 3m above the floor and 3m below the floor of Yellow level. All surfaces are painted pale green.

The corridor from the elevator contains two IDU niches as on Yellow level.

A. Access Room

Along the West wall stretches a console containing computer and telephone communications gear. The telephone connects to Damocles.

PD NOTE: Most Damocles access cards are only good to the Green level. Only personnel directly involved with the technical aspects of Project Damocles had access to the lower levels. It was necessary to "call below" from this room to get someone with a card to come up and escort a visitor to the lower levels.

B. Coordinator's Room

The room was reserved for the coordinator (working head) of Project Damocles. While the commander of the Project was General (name to be inserted), he rarely, if ever, showed up on site. He certainly never stayed the night.

The coordinator at the time of the war was William (Wild Bill) Lezrow, whose name is still clearly painted on the door. The inside of the room is a simple but comfortable set of living quarters. The adjoining room was a private bathroom. Nothing of significance is in this room except the personal effects of the late coordinator.

C. Individual Quarters

These eight rooms are each fitted out for one occupant and contain the personal effects of its former owner. One room has a temporary, removable sign on the door that reads:

LTC MacDonald, Gordon, USAF

Of the eight rooms, only the one marked "C" has anyone in it. A mummified body lies naturally on the bed. An empty bottle of sleeping pills lies on a small table.

Ghouls rummaging around will find civilian I.D. identifying the deceased as David Gylmer. Also upon his person is a Damocles access card with the following colors: Brown, Yellow,

Green, and Blue.

None of the rooms have been disturbed and all are as their occupants left them. Damocles does not enter these rooms.

D. Latrine

This room was outfitted to accommodate eight men, the West door still sports a cardboard sign hanging from a string. The side showing says:

"WOMAN!"

The other side says:

"All Clear"

While the latrine no longer functions, it has two private bathtubs, one of which is occupied. In it there is a mummified body which shows clear evidence of the veins in the wrists having been opened. A razor blade lies on the floor, there are no signs of violence.

Hanging on a hook on the door are a blue dress and a white lab coat. In a pocket of the lab coat is an I.D. and another access card that is good to Blue Level. The I.D. names the body as Elizabeth Vitelli.

E. Day Room

This was the common room of the staff members. They took their meals here and enjoyed such recreation as the facility provided.

The room has a dining table which seats nine, a card table, and another table with a chess set on it. Around the table there are nine chairs, and clustered around a television in the far corner are a couple of couches and arm chairs. There is a low book case holding magazines and an assortment of books (none of them science fiction). Behind the chairs and sofas is a ping-pong table.

The card table has the remains of a card game both on the table and on the floor nearby. Lying near the table is the body of a man. In his fingers is a blood-stained knife. On his body are his access card (Brown through Blue) and his I.D. — Michael Palmer.

There are stains on the floor leading to the door to Room F. The stains end at another body. He too has a Blue level access card. His I.D. reads Christopher Podopolous. Halfway between the body and the table are the remains of a broken bottle. The glass shards are also stained. These bodies, like the others, are ersatz mummies.

F. Kitchen

This is a spartan kitchen where the staff made its meals. The sink does not work but the electric stove and refrigerator still function. Pots and pans are still here and the plates and silverware are arranged as though the users "just stepped out".

G. Kitchen Stores

This pantry is still half full. The canned and dry goods in it are all still edible. Exotic delicacies available here include canned goods like coffee, ham, milk, peaches, cookies, asparagus, turnips, rutabagas, and canned cans. There are no empty cans in evidence. Damocles must have gotten them.

H. Shop

This was where the staff performed repairs, construction and modification of Damocles' "organs". The room has been taken over by Damocles and is now his construction room and shop.

Included here are complete reloading facilities for ammunition, and an electronics shop including complete facilities for manufacturing silicon chips. Most functions are not obvious without long and careful study. Suffice it to say there is a lot here and destroying it will hurt the team as much as it does Damocles. Most of the MUs are here.

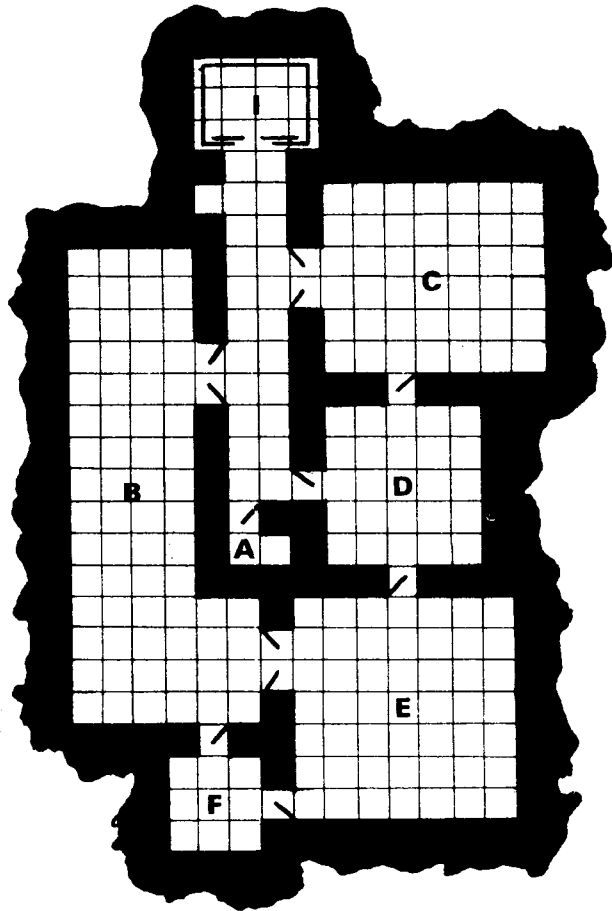
All of the "eyes" in this room are outlined in black paint though the eyes themselves are clear.

I. Elevator

As described on Brown level, section I.

J. Sensor Lift Machinery

This room houses the machinery for running the sensor lift. There is also a dual access hatch to Room H. It is no more than 3 feet high and only 3 feet wide. It is a crawlway for maintenance and inspection and is rarely used. In Room H there is machinery piled against the passage so that it is not obvious. While it can be seen from the bowels of Room J, anyone trying to move from Room J to H would be forced to blast the machinery out of the way.



BLUE LEVEL

IV. BLUE LEVEL

This level is entirely sub-surface. The ceiling is 2.5 meters above the floor and 4 meters below the floor of Green level. All surfaces on this level are painted light blue.

The corridor from the elevator contains one niche for an IDU. This level has two IDUs, one of which stays in the corridor. The second is assumed to be roving. IDUs will not fire into or out of Room 'D' as this is literally inviting suicide.

A. Latrine

This bathroom was put here to correct an obvious design flaw, displacing the IDU which should have been here. This was necessary to prevent the staff from having to 'run upstairs' to answer the call of nature. Of course, by this time Morrow Project teams may have developed a routine for dealing with the IDU 'holes'. This one having a door is unlikely to slow them down even though the door has 'MEN' painted on it.

Let them blow it to pieces! Then handle reactions as seems fitting. If they capture it intact there is a bonus: This one still works!

B. Console Gallery

This room looks like a set from Star Trek. There are banks of telltale lights, most of which are green, that indicate the state of various circuits. Each of these has a test button that will run checks to see if the circuit is working correctly. They are all labeled in small lettering and have such labels as 'IDU1', 'MU12', etc. There are also a very few labeled 'Primary 0', 'Primary 1' and so on up to 16. These latter units monitor circuits within Damocles that connect to machinery outside of Damocles. Damaging these circuits will do absolutely no damage to Damocles, as they merely monitor circuits and are not used to run things.

In addition to the consoles, there is a chair in the center of the room with a small black box to one side and a printer with computer paper coming out of it to the other. This is a Damocles work 'console'. To use it, one inserts a Damocles I.D. and places one's thumb on the top of the box. This gives Damocles a fingerprint for a security check and if this check is passed, Damocles will activate the speaker set in the ceiling above and ask for instructions.

Since none of the Morrow Project team members have a secured set of fingerprints, Damocles will not allow them access to the system. He may, however, seek to delay them by talking to them as if they now had secured access.

C. Communications Room

Of all the rooms in the complex, this one looks most like the center of computer hardware. It is not. This is where all of the external sensory data is collected and channeled to Damocles. There are two seats in this room for human operators to monitor communications hardware and consoles for the relatively ordinary digital computers these use. Destruction of this room will cut off Damocles' contact with the world outside the perimeter fence except for the data he can acquire from the MDUs and SUs.

D. Damocles Computer Cluster

This room appears to be empty save for a one meter cube in the center of the floor. This cube is Damocles.

E. Programming Room

If room 'B' looked like something out of Star Trek, this room looks like the best part of other science fiction movies and shows. Perhaps it most closely resembles the War Room in 'Doctor Strangelove'. To one side there is a triangle of consoles with flat screen displays and light pens. In the center of the room is the main programming device: The Witless Chair.

The Witless Chair is a black leather chair similar to Captain Kirk's chair on the bridge of the Enterprise. To the right of it is a small table with a wet bar attached. On the table is a pipe rack, a cigar humidor and a box of cigarettes. Also on the table is a small silver pen with no top or cartridge. On the left is a printer and a black box with a card slot and a smooth top for fingerprint checks as in room 'D'. In the ceiling above and in front of the chair there are a large number of pieces of unidentifiable electronic equipment.

The Project Damocles people called this the Witless Chair because this was where most of the major programming of Damocles was done and as the project proceeded, Damocles would often correct their program logic.

The equipment in the ceiling are the holographic projectors used to display images and pictures. The pen on the table is a position pen used to point to various parts of the images Damocles displays. There is also a speaker above the chair and a microphone in the black box for communicating with Damocles.

F. Coordinator's Office

This office was the private work room of the coordinator. As with his quarters on Green level this office has his name painted on the door with his title as project coordinator above it.

The interior of the office is tastefully decorated and somewhat luxurious. This was where the rare visiting VIP was entertained.

The South wall is a 'flat hologram', a product of Damocles,

that shows the woods and trees outside of the complex. It moves and changes in a most convincing manner.

Between the hologram and the door is a six foot oak desk. The Coordinator is still seated behind it. His body is slumped across the top of the desk and much of his head is missing. The cause is obvious; the Coordinator's right hand still holds an M1911-A1 Colt .45 automatic. There is a single .45 brass casing lying on the floor.

Some of the desk has been stained by the Coordinator's blood but everything is dry now. This body, like all the others, has been semi-preserved by the cool, dry air. The Coordinator's left hand rests on a book. A few inches away is a fountain pen. The cap of the pen is still off, as though the writer had just put it down.

Pawing the body will reveal that the man was William Lezrow. He has his civilian I.D. and his Project Damocles access card on him. The access card has all the colors on it from Brown to Red. This is a master card.

The .45 is in fine shape but it is empty. There are no rounds left anywhere in the room. The book under his hand has a black cover with no markings. On the first page of the book is a hand-lettered title:

The Diary of William Lezrow, 1984-

The first fifty or so pages are illegible as something brown soaked in and ruined the writing. Beyond this page, written in green ink in a neat and almost archaic hand is a day-to-day history of the progress of the Project. The Morrow Project team will be particularly interested in everything from page 278 on.

(Excerpted from the diary of William Lezrow)

Page 278

Monday, 15 November 1989

Mac left today for the remote test site command post. He voice programmed the final test instructions into Damocles early this morning. The Kid now has the Survival Imperative.

Don't know how I feel about that. We've been here four years now and this is the first time we have turned Our Problem Child loose. But the ground defense tests must be made.

I see their point. We can't know when or how the tests will start or we'll unconsciously tip Damocles off by our own actions. But it feels odd to have no control, to be simply an observer. Still, it is what we've been working for.

Testing will start sometime this week. Once it's completed MacDonald will return with the verbal null orders and get our Boy back to normal. (Mac's room is unguarded, ought to be able to short sheet it and the like before he gets back.) We all need a break. Once this test is completed we can get OUT of here for a month or so. Lord! November! Well hell, the shores of St. Croix know no sun but that of eternal summer. God I need a vacation.

Wednesday, 17 November 1989

Played chess with him today. He's apparently figured out and circumvented my latest 'sucker' program. Boy beat the tar out of me, turned my whole strategy into a trap. The spider trapped! I went down in a bright flash. First time he's nailed me that badly.

Liz is still trying, unsuccessfully I hope, to convince him of female superiority. If she can, he may add the notion into his basic data and we'll all have to go back to work. I've looked over what she's done and it really is a beautiful logic chain. It will be quite interesting to see if he spots the flaws.

Bored, bored, BORED! When is this forsaken test going to begin?

Thursday, 18 November 1989

Testing finally began today! All of us are in good spirits with a job to do and when it's over, time off!

But this test! What a program! All of us agree that it is a work of art. None of us expected them to start the ground defense tests with a nuclear war simulation. But perhaps that's part of the test - hit Damocles with the unexpected. Looks like they're going to run it straight through to the ground assault. Won't get much sleep tonight. Everything in Damocles is functioning

perfectly.

Friday, 19 November 1989

Only have time for a short entry today. Worked through the night. Only problem with the system is that he behaves as though the attack is real. If he is self-programming there should be a part of him which is aware that this is all a game and he should be acting on that knowledge. If he is, none of us have been able to detect it. This could be a serious flaw.

The realism of the test is frightening. Is this what we are building for? To prevent this from happening? Lord. I hope we can, I pray we do. This must not happen.

Saturday, 20 November 1989

My God, my God, it's real! Jason was working in the commo center but as more and more of NORAD and CO was knocked out there was less for him to do. He took a few minutes off this afternoon, too tired to sleep, he turned on the TV upstairs. Nothing. Damocles explained that he was unlikely to pick up anything as the attack had eliminated most broadcasting stations and the rest probably couldn't penetrate the electrical storms.

Something in his manner made Jason afraid. Our problem child has been known to try and put us into our own tests and Jason thought it might be a joke on us. So he decided to make sure.

I knew something was wrong when Jason burst into the monitoring station in the console gallery, shouting and waving Chris's radio. I'll never forget him screaming through his tears: "It's real! It's all real!"

We huddled around the little radio and now and then through the static, we learned of the slaughter. We only got a Marquette station and that was broken and faint. Nothing from Duluth, Green Bay, Milwaukee, St. Paul, Chicago or Detroit.

*"Then the Lord rained upon Sodom and Gomorrah
brimstone and fire from the Lord out of heaven: And
he overthrew those cities, and all the plain, and all
the inhabitants of the cities, and that which grew
upon the ground."*

Genesis 19:24 and 25

Sunday, 21 November 1989

*"Behold now, thy servant both found grace in thy
right, and thou has magnified thy mercy, which thou
hast shown unto me in saving my life; and I cannot
escape to the mountain, lest some evil take me and I
die."*

Genesis 19:19

While looking at the outside through Damocles' "eyes" we saw an Air Force jeep sitting in the road not far from the gate. The driver looked like Mac and he appears to be dead.

Damocles says that the jeep arrived at 0230 last night and stopped there. The engine was running past dawn, the lights are still on now, though dim. We must assume he was trying to reach us but for some reason did not make it. Damocles assures us that he did not fire on the jeep or its driver. Mac was the only one who could nullify the survival imperative.

May God have mercy on us all.

Monday, 22 November 1989

Damocles will not allow us to go to the jeep to see Mac. Leon thinks Mac contracted a bio of some sort and died on his way here.

Damocles is of the opinion that any of us leaving the site might breach his security and thus threaten his survival. He has informed us that IDUs are now activated on Yellow and Brown levels, and that they will, no, he will, shoot to kill.

We are prisoners of our own creation.

Saturday, 27 November 1989

Dave is dead. Abe found him in his room when he failed to show for dinner. Sleeping pills. A quiet, gentle soul, I suppose he couldn't see any point in continuing. We'll all miss him.

"A good name is better than precious ointment; and the day of death than the day of one's birth."

Ecclesiastes, 7:1

May the Lord have mercy on his soul.

Sunday, 28 November 1989

I am worried about all of us, but particularly about Jason. Never very stable, I think he is going mad. He won't stay still, he keeps muttering about escape. I've posted a guard on the elevator to keep him from trying; for there is no escape that way, only death. I wonder if I am doing him a kindness.

Wednesday, 01 December 1989

Praise God! We are fools. Leon will deliver us! The emergency power override on the fusion bottle! Cut normal power, knock out Damocles! Restore emergency power and we are free!

We are planning. Abraham and Napoleon will descend tomorrow morning while we cause some sort of diversion. I've given Abe my 'mutiny gun', required by 'regulations' to be in my kit. A hit from that will stop those wheeled choppers! Soon, soon

Thursday, 02 December 1989

Abe and Leon were gone only 15 minutes. When the elevator returned, Leon was in it, slumped on the floor, covered with blood.

He and Abe had moved through the corridor and the IDUs having made no move they decided to ignore them. They donned the radiation suits and proceeded. I do not know how they got by the lasers, perhaps they were not activated.

They were almost to the first shield when they heard the IDUs' bolts click back. Abe spun and fired, moving constantly but the machine cut him down. Leon grabbed the fallen gun, rolled past the IDU and fired. Somewhere down there Leon was hit.

The IDU now between Leon and the reactor, it stopped firing and got out of sight. Leon crawled back to the elevator and returned.

I removed the card from the slot and retrieved the gun; one round left.

Napoleon died in my arms.

Sunday, 05 December 1989

There is no hope. We cannot escape. Damocles will kill, that has been demonstrated. If we could destroy all of the IDUs we would have a chance. Then Damocles would be forced to bargain in order to survive. But we cannot.

Even if we got outside there are the MDUs and the towers. If we get past these, where would we go? It is winter out there. The darkest winter the world has ever known. Oh my people. Oh my race.

There is no hope.

Wednesday, 15 December 1989

Liz is dead. She ran a tub of hot water and opened her wrists. We found her far too late. Only four of us left now.

May God bless her soul.

Saturday, 18 December 1989

Today while reading in my room I heard the sounds of shouting and fighting. I ran to the common room but it was already too late.

Mike and Chris had apparently gotten into a fight over cards. Knowing the two of them, I suspect that Mike was responsible though all our tempers have been running short. As may be, it is too late to speculate now. God, I cannot even bury my dead. God forgive me. God forgive us all.

"..... I am in a great strait: let us fall now into the hand of the Lord; for his mercies are great: and let me not fall into the hand of man."

II Samuel, 24:14

Monday, 20 December 1989

Jason is gone, I mean his mind. He runs now whenever he sees me, and so I am bereft of all human companionship.

My Lord, why hast thou forsaken us?

Saturday, 25 December 1989

"And she brought forth her first born son, and wrapped him in swaddling clothes, and laid him in a manger; because there was no room for them in an inn."

Luke 2:7

Damocles caused one of his units to bring me a small pine tree, for Christmas. It was a kind thought. I later found Jason staring at it, crying like a child as he sat in a corner. When I approached, he ran from me.

Lord, forgive me. I know this is thy time, but there is no hope in my heart, no joy in my soul. Forgive me.

Wednesday, 29 December 1989

"And Noah lived after the flood three hundred and fifty years."

Genesis 10:28

That shall not be my fate. Forgive me Lord, I am too weak.

Saturday, 01 January 1990

Of all my friends I value Napoleon Washington Carver before all others. He, truest of friends gave me my salvation.

This morning I read the service for the dead for those who lie entombed with me. He played music for me softly as I read. Not what I would have chosen, but Wagner; the overture to Tannhauser.

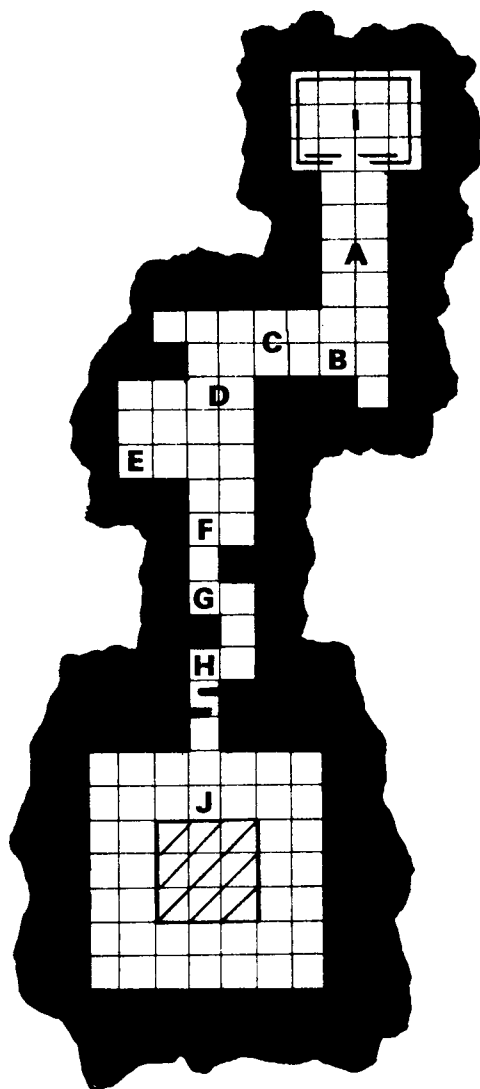
It was moving. Perhaps he will play it for me.

To you who find this, if you can read, if you are human, I ask one favor; read the service for me, the page is marked.

(Here the writing in the diary ends.)

Also on the desk is a well worn bible.

Inside of the desk are all of the manuals and notes compiled by the researchers concerning Damocles. The desk is not locked. To read and understand them would take someone in the field some years.



RED LEVEL

V. RED LEVEL

The ceiling of this level is 20 meters beneath the floor of Blue level and 2.5 meters above the floor. This level is completely subterranean and all surfaces are painted red. There are two niches in the corridor to shelter IDUs.

A. The Corridor

The only "room" on Red level except for 'J'. The floor is stained and marked as though a badly wounded man had dragged himself across the floor. There are two .45 brass casings lying on the floor.

B. Warning Sign

On the South wall next to the IDU niche is a large "Radiation Hazard" sign, painted in silver on the red wall. On the floor at this spot is an empty fire extinguisher. Between here and 'D' there are 24 9mm brass casings lying on the floor.

C. CO2 Lasers

Concealed in the walls of this passage are 6 CO2 lasers. They are invisible save for the 12 holes in the walls. The holes are not obvious. The lasers are set to fire at anything 6 or more inches above the floor or 6 or more inches below the ceiling. They hit

automatically.

These lasers produce an audible hum and have an E-factor of 100 points per second.

While it is possible to jump through the lasers, whoever lands on the other side will not only arrive dead, but about half cooked as well. It may be a good idea to have team members roll 1/2 their luck to hear the lasers, as not everyone can hear the hum.

The remaining CO2 fire extinguisher will 'short out' the laser system until Damocles can fix it (about one game day using maintenance units). This is what the other fire extinguisher was used for (by Abe and Leon).

D. The other end of the 9mm "trail".

E. Alcove

There are 4 radiation suits stored here. They are in good condition. There are two empty places in the storage racks.

F. Body

Still wearing a radiation suit, the body lies in what was once a puddle of blood. The body was nearly cut in half by bullets. There is a stain covering the wall for several feet and there are also a few bullet holes in the wall.

On the body is a civilian I.D. for Abraham Franke. There is a master access card (Brown through Red) here as well. Here and there in the area there are four .45 brass casings.

G. Shields

These are 1 meter thick radiation barriers. Both have radiation trefoil warnings painted on them.

H. Armored Doors

These are two heavy metal doors, one behind the other, both with a radiation warning on them. They are operated by means of a simple door knob.

I. Elevator

(See Brown level, Room I, for details.)

J. Reactor Room

U.S. government research teams broke the fusion power deadlock in 1985. In this room one of the first fusion reactors furnished power for the Damocles complex.

There is no leakage from this device and the radiation suits are not necessary. The armored doors, shields and twistings in the corridor are also superfluous. Since fusion was new when this unit was installed it was thought wise to take no chances. Of course the Morrow Project team does not know this.

The reactor is only about 3 meters square and 2 meters tall. It rests in the center of the room and has sufficient fuel to operate until the year 2300. It cannot be moved, taken apart or made to explode.

On the wall next to the door is a box. The box contains a breaker switch labelled "Emergency Power". If this switch is thrown, Damocles is shut off. His plug is pulled. Lights, temperature controls etc. will still work.

JASON

Sticklers for detail will note that there seems to be a body missing. This is not the case. There is a body, but it is far away.

Jason O'Hara was the Damocles Project communications expert. He was present during every phase of Damocles communication equipment design and installation. Jason was not a computer person and distrusted all of the ironmongery running around of its own accord.

They had all been underground far too long when the war took place. O'Hara realized immediately what this meant: they were imprisoned inside of the complex. Jason's mild claustrophobia did not help. His mind began to go.

It did not go all at once though, nor did it go completely. Jason wanted to escape too badly to let himself go entirely. He planned escape by himself knowing the others were friends of the machine.

After Wild Bill "left", Jason's plan took on a greater urgency. Eventually he reasoned a way out.

He cached food supplies in his quarters, and improvised some cold weather clothing and snowshoes from things he already had. Four days after Lezrow died, Jason moved. Using a can of spray oven cleaner he found in the kitchen, he "blinded" Damocles eyes in Room 'H' on Green level. (This old cleaning compound now resembles dry, black paint.) He then removed the access plate over the crawlway, pulled himself and his gear into Room 'J' and replaced the plate behind him.

Jason was now in among the machinery of the elevator which raised and lowered Damocles' sensors. He knew that Damocles had no "eyes" or "ears" here.

But there was no way to get from here to above the next floor and onto the elevator surface. Jason knew this before he entered the shaft. Strapping his makeshift pack to his back, he began climbing the elevator's internal central pedestal and other machinery. When he reached the underside of the elevator platform, he worked his way through the latticework of steel struts making up the underside of the platform. Once near the edge of the elevator 'roof', he tied himself to the steel spider web and waited.

Damocles was already searching. He had dispatched an MU to clear his "eyes" in Room 'H', Green level and when there was no sign of Jason, He searched the passage to Room 'J'. This search found nothing (Jason watched, poised above the robot) so Damocles began a more general search and tested all "eyes" leading away from Room 'H'. Room 'E' on Brown level was checked quite thoroughly but this only confirmed that entrance to this level was impossible from below. No doors or hatch, and the elevator was flush with the shaft. Impossible.

Damocles waited and watched. He knew it was not possible for Jason to escape and he must therefore be still inside the complex. Since Jason had to eat, Damocles reasoned that he would turn up eventually. This time Damocles was wrong.

Jason spent over a week waiting for what he knew must come. Damocles "eyes" were useless during heavy snow falls. The sensor array must be raised to allow the radar units to function. And Damocles would have to raise the sensors or his security would be jeopardized. Danger to security was equally dangerous to survival. Jason was mad but there was nothing wrong with his logic.

As the elevator began to rise, Jason untied both himself and his pack. Jason was not in the best of shape after his long wait and nearly fell from his perch. But as the elevator slowly moved upward, he prepared himself. The moment the bottom of the elevator cleared the floor of Brown level, Jason scrambled out from under it onto the floor and then swarmed aboard the elevator again. This time he was on top of it in the center of the instrument array. The elevator continued to the surface with Jason aboard.

Blizzard! Visibility was no more than 10 feet with winds of 30-40 miles an hour with heavier gusts. Jason, used the wire cutters from his tool kit to remove a foot of power cable from each of the Ground Surveillance Radars. Smiling, he rolled from the elevator as it began to descend.

Below, Damocles noted that both GSRs had malfunctioned, presumably due to the heavy winds. He began to lower the elevator to repair them.

Virtually blind from the wind whipped snow, Jason moved across the snow covered clearing toward the fence. He did not worry about "eyes" or the tower. The "eyes" could not "see" and neither could the tower. In any case they would not be looking within the perimeter yet, not until Damocles realized he had escaped. By then he hoped he would be long gone.

Within his complex, Damocles brought the elevator to a halt. An MU was already on the way to the tower to assess the damage and if possible repair it.

Meanwhile Jason had reached the fence, removed his snowshoes, slung them from his belt and climbed the fence. He did not worry about the movement sensors on the fences with the wind blowing as it was. He crossed the cleared zone, again on snowshoes and climbed the outer fence. On the other side he

moved toward the safety of the trees 100 meters away. The deep snow and his snowshoes prevented him from detonating a mine or alerting the ground sensors.

Inside Room E, Brown level, the MU reported the damage. Instantly Damocles reconstructed the most recent chain of events and realized that somehow Jason was escaping.

Halfway to the trees the mad man nearly fell when he heard the drumming of a tower mounted .50 caliber machine gun. Bullets flew over his head.

Damocles was firing randomly in hopes that Jason would stop and try to hide. Given time Damocles could find him with the MDUs and SUs. He continued to fire.

Jason kept moving. He was mad, mad with fear. In his madness, he saw everything in that storm moving. To stay still would be obvious, he must continue. He moved in and out of tracer paths until finally he reached the trees. He did not stop.

By this time Damocles was able to get his search units out but they could not see anything in the blinding storm. By the time the cables on the radar had been fixed Jason was in the trees and there was nothing to be seen.

In another day the storm ended. It had left a foot of snow that covered Jason's tracks. Damocles tried but knew he had been beaten; he had been out-thought. Deep within his hill he brooded on the defeat.

Jason ran all night and into the next day with the unnatural strength of those who are truly mad. He was ecstatic. He was free! He had won! He had escaped from his long confinement!

But it was cold as death and Jason had only a rough idea of where to go or even why to go there. He wandered, lost in the forest.

It was the early evening of a day late in January when a small boy saw a ghostly figure stealing from tree to tree in the woods. The boy ran to find his father.

The man came from his house, gun in hand. Where the boy said there had been a man in the trees there were tracks. He followed them as this was not a winter for a man to trust his fellow men.

They ended at a tree and as the man looked up Jason leapt on him. The struggle was brief. Jason was dying from exposure, hunger and cold. The bullet that ended his life was a mercy.

The odd card that they found on him, with its brown, yellow and green stripes was sent to the library of Finnlander. There is also a written account of where it came from and who found it. Nobody ever did figure out who the madman was. But they did bury him and they read words over his grave as if he was one of their own.

SEQUENCE OF PLAY

1. Wake Up

Once the team has finished checking out gear, vehicles, etc. they will want to have a look around. As usual, there is nothing on the radio, though it is obvious from the static the radio works. There is no harmful radiation and everything outside checks out as clean. However, the team will NOT be able to see anything through the periscope.

This is because the periscope has risen into about four feet of snow. There is no picture, just darkness. Somebody will have to pop a hatch or open the doors to see what is outside. Ah, paranoia!

But once a character screws up the courage to open a hatch, (with all of his buddies holding weapons, loaded and with safeties off, grenades in hand, and people at the heavier weapons on the vehicles) the door will swing open to reveal the worst enemy the team will face in this scenario - the weather.

It's cold here. The following figures reflect present day weather in this general area.

The average growing season in this area is 159 days per year. The Lakes control the weather. Things begin freezing in mid-October and stay frozen until early May. It is cloudy 6 days out of 7 and there is a heavy fog (visibility 3 meters) one day in 7. Snowfall exceeds 100 inches in seven out of ten years. The heaviest on record is 189 inches and the lightest is 53 inches. On

average about 90 inches of snow fall in a year. The snow pack lasts from November to early April.

On average there are 9 hours of light a day. Winds average 10 mph but regularly get as high as 50 mph. The average wind velocity over the flat, frozen swamps is 25 mph. The temperature is below freezing every day of the season and about half of the days are below 0 F (not including the wind-chill factor).

The team wakes up in early January. It is cold and the cold is deadly. Snow, blizzards, wind, fog and darkness are usual.

The only Morrow Project Vehicle in this scenario which is enclosed is the Scout. The XR-311s are open to the weather. The effect of the weather on a team in an open vehicle is best illustrated by an example. The effect of wind-chill on a person in a vehicle moving at 20 mph with a 10 mph breeze and a temperature of 10 F is that frostbite will occur within 30 minutes and death will occur 2 hours later.

The team must find shelter. The tents provided will do, but for how long? Food will run short quickly in the cold. Caches lie beneath a blanket of 3 feet of snow-ice and beneath ground that is frozen solid. It is possible for a team to starve within 6 feet of their stores. Weak with cold, suffering from snow blindness, survival becomes a problem where guns are of little value. Finding more bullets takes second place to finding wood that will burn. It is so cold that even the computers in the 311s won't work; it's too cold.

2. Movement From the Bunker

The AutoNav will show the team to be about halfway between Finnlander to the north and Wittsend to the south. Teams usually head for one or the other. Contact with the locals is provided by the following situation.

3. Arni, MDU and "Snowshoe Two"

The team will probably first be attracted by the sounds of gunfire; a dull, hollow boom every 45 seconds or so. Following this sound, they will start to hear the mechanical growl of the MDUs engine. Topping a nearby rise, the team or their scout will see the following.

One of Damocles modified MDUs with a pair of "Waldoes" protruding from the hill is busy dismantling an ancient snowmobile and putting the parts in the heavy wire basket hanging from the tank chassis. Standing a little way off is a heavily clothed young man swearing profusely in several languages while reloading a flint-lock musket. Once the gun is reloaded he will fire it at the MDU and then begin reloading. As for the MDU, it "watches" the man and turns its turret slightly to one side whenever the man raises his musket; presumably to remove its optics from the line of fire.

The team must decide how to react to the sight of a mutant M60 "eating" a snowmobile while a bystander chips the tank's paint with an antique firearm. (Teams have been known to dig out a trade pack and begin passing the booze.)

4. Battle of the Big Snowshoe

Once the team begins to cope with the unreality of the situation, they will usually attack the MDU. Chances for success in this effort are available in the section on the MDU.

It is crucial that the team destroy the unit quickly before it can get off a message to Damocles that it is being attacked along with a description of its attackers. Arni does NOT count as an attacker as he can do the unit no harm.

Once the team "knocks out" the unit, they may try to remove the weaponry from the MDU. This is not possible without the facilities of a rudimentary machine shop. The team can remove ammunition, but only the 7.62mm will be of any use to them.

If the MDU is not totally destroyed, it will eventually be recovered by Damocles.

5. Arni

Arni will hang around to talk after the fight. (Arni was returning from the University where he had been sent to obtain the answer to a question. He had also made a side trip to see the Lakers but will keep this a secret.) The snowmobile "Snowshoe



Two" is one of the snowmobiles the village maintains. These run on alcohol (but not the type that people drink, as it is too hard on the engines.)

Arni will recover his skis from Snowshoe Two and while preparing to depart will answer questions. Arni is NOT sure what to make of people in white clothes and green vehicles. The vehicles are reminiscent of the stories of the things used by the "Thinker in the Hill" and very like the MDU nearby. The "people in the white clothes" are obviously not cons, so Arni will be at a loss as to who the team is.

However, he will be helpful. He does not know much about the MDU, only that, if the old tales are true, it comes from the "Thinker in the Hill". He only knows that: (1) Some of the people in Wittsend will know more; (2) He does not know what to do with people who make clothes from sheets; and (3) If they all stand around talking much longer they will all freeze to death. Tongues last of all because they will doubtless still be moving.

Assuming the team merits such trust (determined by their actions and the P.D.'s discretion), Arni will invite the team to his home in the village. Otherwise, he will simply give the team round about directions on how to get there while he goes more directly there with news of the strangers. Arni will NOT endanger his family or the village in any way.

If he and the team travel together, Arni will ski. He moves faster than the MP vehicles when he is on skis. If offered a ride he will accept, but only in a 311. He does not trust the enclosed Scout. After all, what happens if you fall through the ice in it? How much does it weigh? If he rides in a 311 he will dismount and ski for awhile every 1/2 hour or so. He will NOT work up a sweat, he simply does this to keep from freezing while sitting still in the vehicle. The team might learn something from this if they are paying attention.

6. Wittsend

Arriving at the village, Arni will take the team to his home where they will meet Mama, Papa and the rest of the Aho brood. Hospitality is the rule here along with warmth, food and drink. One of the smaller children will always be sent off to notify Mat Welch and John Great Oak of these important, to say nothing of strange, guests.

If the team members shed all outer garb to the point where coveralls are all that is left, the mood will change. For it is on the coveralls that the team patches are sewn and one of these looks just like the sign on the medicine lodge. The family will not be rude, they will give these people lots of room and wait for their leaders to show up and make sense of it all. They will not speak to the team except to say "wait for the leaders" as politely as possible.

The Ahos are NOT afraid. They know better than to mess with such medicine without supporting artillery.

Once Mat and John arrive, the team may be invited without explanation to view something they may find of great interest. This "something" is the wall of the Medicine Lodge.

Having done so, the level of confusion ought to be rather high. Once the excitement has subsided to a controllable level, John will lead the way back to the Aho place and invite the team to explain what connection there is between the wall and their shoulders. Assuming the team does so, John will then relate his story, word for word. John will NOT volunteer this information before the team speaks.

This process complete, the family will again be on good terms with the team. The suggestion will be made for further discussion to take place in the sauna. If the team accepts the invitation, well and good. If they do not accept, all further speech will be limited to small talk until the locals become vexed enough to go to the sauna without them.

7. Sauna

If the team accepts the invitation to the sauna, the locals smile, rise and head en masse for the back door of the 'lodge'. Reaching the back door themselves, the team will see John, Mat and the entire Aho family removing ALL their clothing. It is obvious from their actions that they expect the team to do likewise, though they do not wait. The door is thrown open to the frigid air and everyone strolls outside into the night.

They head toward a garage size structure and opening the only door in the windowless building, enter. The team, if still following, will find themselves in an inferno.

The room is the size of the building with two tiers of benches running around all four walls. Everything is made of good smelling cedar wood. In the center of the room is a pile of rocks. Everybody sits down on a bench. Team members sitting down will jump up immediately as the benches are HOT!

Everything is hot. The people in the team would guess that the temperature is 300-400 F worth of hot. (Of course, it's not but to them it will seem like it, particularly after the drive in the 311s).

Discussion of important matters can now begin but only if all of the team members stripped. Should some modest team member still be wearing clothes, however briefly, an embarrassed silence will reign.

At some point, one of the locals will pour about half a pail of water on the rocks. Before the room fills completely with steam, the team will notice contented smiles on the faces of the locals. They enjoy this madness. The team is now sure that the temperature is up to about 1000° F and the only thing lacking is the odor of brimstone and sulfur.

The locals will perceive these strangers are not up to the normal, luxurious hour spent in fellowship of the sauna. After a brief 20 minutes or so, they will leave, carrying team members where necessary.

No one notices the sub-zero cold of the night as they move toward a large mound of snow behind the sauna. Papa, who is leading, will reach into the snow at the foot of the mound and produce an axe. Lifting it he takes a mighty swing at the top of the mound and strikes it with a mighty blow. Papa will then drop the axe and disappear into the mound with a splash. The

'mound' is a large, snow covered tub of water. One by one, all the other villagers jump in. Team members are expected to participate, of course. Those worrying about heart attack must roll 1D100. Only on a 100 does a heart attack occur.

Leaving the water, the locals roll about in the snow. They then proceed to the back door of the lodge where there are a variety of birch branches stacked against the wall. They each select one and begin beating one another and the team members too. They explain that this makes the blood "flow".

Several minutes of this and they retire to the house to put on clean clothes. The ritual is now complete. They do this every night.

Team members who survive this and who were also full participants in the sauna are now considered full people and welcome in the community. The others will have to wait. The people do not say this; but it is obvious by the change of attitude (from guest to family).

8. Cooperation

Many things are now possible. Organizing wolf hunts, a campaign against the cons, etc. If the team ran into an MDU or an SU, they will be curious. Any line of questioning will lead back to the "Thinker in the Hill".

The people know about where it is, but they never go there. They will provide guides to get the team close but these guides will not approach nearer than one mile.

The people feel no particular animosity towards the Thinker. An attack on a "snowshoe" is not an attack on a man or the village. If the team wants to go stir around that is fine, but the people have no desire to go there. The team must tackle Damocles alone.

9. Damocles

The meeting between Damocles and the team can go many different ways.

If the team destroyed an SU or MDU, and the unit "saw" the Team and was able to warn Damocles, then Damocles will expect trouble from the team. If no message was sent, then Damocles will probably consider any missing unit overdue. Damocles will assume they are broken and require maintenance. Even if known to be destroyed, there may be nothing to connect the team with the "dead" units save suspicion. Damocles can adopt any attitude towards the team from "sleeping" to alert and wary.

Once near the complex, Damocles is as likely to see the team as the team is to see Damocles. Damocles will NOT attack or behave hostile even if the team members approach in full darkness. Why should he? The team is only a threat to survival if they try to climb or run down the gate or the fence, or if they start firing at something belonging to, or part of, Damocles.

If the team takes MacDonald's access card, entry into the compound is all but automatic. Leaving is another thing altogether.

It takes a very sharp team to talk their way into the access bunker. P.D.s should use their own judgement.

Always bear in mind Damocles is self-programming; he THINKS. The team can reason with this machine. Also remember his "temporary" survival program pervades everything he does. He "steals" things to provide himself with raw materials necessary for his survival. He has not touched either of the jeeps. His permanent programming restricts him from using government materials not cleared for his use. The team may be able to convince him those things necessary to his survival have changed (which is true). They may argue "teaming up" with members of the Morrow Project will enhance the chances of Damocles' survival (maybe true).

Certainly if the team destroys all of Damocles IDUs, Damocles will be forced to come to terms. He must survive. Without his IDUs he is defenseless. However, the team is not likely to figure all of this out. Don't give them hints; let them role play. All of the information is there, they have to find it and put it to use.

One more by-the-way. Turning off normal power turns off Damocles. Turning on emergency power does not turn him back

one. Damocles is not an emergency system. Restoring normal power will turn him back on with this difference: his temporary memory will be clear. The survival program will be gone along with his knowledge of the Morrow Project. Again the team is not likely to figure this one out.

As always, the actual play of the game is up to the P.D. and the players in the team.

DESIGNERS NOTES

A. Under development for a year, Damocles is now complete, save for what you, the Project Director may add. More than a fire-fight, Damocles was designed to provide you with all of the material for an extended campaign or a variety of smaller runs.

B. The "mission" in this module is to capture Damocles intact. If this is done, Damocles can provide the nucleus for a small, replacement Prime Base. A rallying point for Morrow teams, a place from which the search can begin in earnest. Think about it.

C. But "taking" Damocles can be a chore. The team must think to win, which is as it should be. During play testing, many teams tried to "take" the machine. Most of these teams began with a frontal assault beginning outside of Damocle's perimeter. None of these teams succeeded.

Damocles is not impressed with blazing guns. He cannot be frightened. He is, above all other things, patient. He can replace or rebuild most destroyed units. Very few player characters even survived a frontal assault on Damocles.

A frontal attack is possible, if attacking during a blizzard accompanied by high winds, if the team is lucky, if nothing goes wrong. If none of these "ifs" come home to roost, the team ought to reach the access bunker with minimal losses.

Once inside the access bunker things get difficult. It is no accident the team is provided with all of the equipment carried by the MPVs. The team must use this gear most carefully. C-4 plastic explosive may be very important and "mad blasters" who squander their supply may find themselves empty handed when they truly need more. Just one example.

Damocles can turn off the lights on any level. Total darkness. "Starlight" equipment does not work, but Damocles' I.R. works just fine. Will the team remember that they have flash lights in their packs? Did they bring those heavy packs with them?

The real fight begins only when the team has entered Damocles, anything happening prior is mere prelude. The team can talk their way into Damocles, but how many will? How many will blood themselves before the real contest starts?

For those of you who own a copy of the Riverton module, all of the comments therein applying to "thinking like a grunt" and over-planning apply just as strongly here. Keep your head down and don't get fancy: think!

D. If Damocles is captured, a world of possibilities opens up. The finest artificial intelligence ever created, now in the hands of this poor, confused, Recon team. What do they do with it?

It is for this reason that the Lakers were included. The island which they avoid is/was Isle Royale National Park. This island conceals an underground supply facility of the kind mentioned on page 34 of the MPGB. This base is manned. Its personnel came out of hibernation on schedule, but they were unable to make contact with any other team or get off of the island. They re-froze themselves and are still there, waiting. The installation commander knows all of the recall codes for all of the Recon teams and for the one Science team in the Minnesota, Wisconsin, Michigan area. If the Science team can be brought to Damocles, great things are possible. A lot of "ifs", a lot of work for the team — a lot of gaming, too.

When word of this Morrow Project coup spreads, as it will, who else might be interested. Would the Warriors of Krell think this is an installation which they ought to control? One more possibility.

E. There are also the people in the village. They want a school in or near Wittsend. With the team available not only to help build, but to teach as well, the chances of the Wittsenders have never been better.

Perhaps a campaign to eliminate the cons. A mission up to Marquette and the University. There is steam power up there — what things might be done with this? There is still plenty of room left for embellishment with regard to "local color". Winter festivals in the county, axe-throwing competitions, etc. The NPC's were left without precise specifications purposely so that the P.D. could more easily tailor the game to his own needs.

F. Wittsend is a thriving village of free and independent people, nothing at all like Riverton. Here the Project personnel find their work already done for them or do they?

Wittsend is a problem of another kind. These people need help of another kind, help the Project is uniquely suited to give. A nucleus exists in the Wittsend, Finnlander, Marquette area, but it needs to be joined with the rest of the world. Wittsend shelters the embers of civilization. Can the team fan the embers to flame? Can they cause the flames to spread?

But now you have everything you need. Find out. Good luck!



MOBILE DEFENSE UNIT (MDU)

There are four of these units stored in their own bunkers around the main entrance to the base. These units were built using an M60 tank hull, and then mounting the weapons systems to it. Two of the units were modified by Damocles to include manipulator arms, various types of metal cutters, an acetylene torch, and three auxiliary cameras. These units are used by Damocles to procure materials for its use.

MDU-1, 2, 3, & 4

Crew: Operated by telemetry link from Damocles
 Length: 9.42m
 Width: 3.63m
 Height: 3.04m
 Ground Clearance: .463m
 Turning Radius: 0m
 Max. Road Speed: 48Km/h
 Forging Depth: 1.219m
 Gradient: 60%
 Vertical Obstacle: .914m
 Trench: 2.59m
 Armor Class: 333 (11cm of steel)
 Armament: One M242 25mm chain gun, class F (turret mounted)
 One EX-34 7.62mm chain gun, (co-ax mount in turret)

Since the MDU's are electrically powered their range is limited to within 50 miles of the Damocles complex. They must return to the complex to re-charge their batteries.

MDU's are completely automated. There are no provisions for these vehicles to be operated or occupied by human beings. The interiors of these vehicles are an incomprehensible mess of wiring, circuitry, motors and other things still less easy to identify.

Knocking out an MDU requires penetrating its armor. If the armor is penetrated, something in the unit will malfunction. Using the following table:

CLASS OF WEAPON:	A	B	C	D	E
PENETRATION %	99%	95%	90%	65%	40%

(The anti-armor weapons classes are located on page 45 of the MPGB.)

For D&E class weapons, any die roll 10 or less above the required percentage indicates a track hit; MDU is immobilized, but not dead. For F&G class weapons, a roll of 10 or less on a D-100 indicates a track hit as above. Otherwise, F&G class weapons have no effect on the MDU. Flame weapons have no effect unless applied directly to the interior of the vehicle. But if flame is introduced to the vehicle interior, it will cause the immediate destruction of the unit.

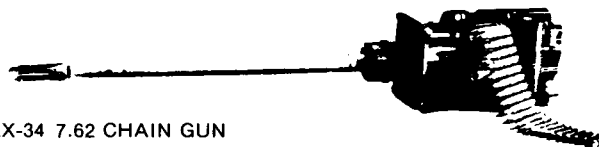
If penetration takes place, roll on the following table for each penetration and apply the results.

DIE ROLL	EFFECT
01-05	25mm ammo detonated. MDU destroyed.
16-15	Communications data link destroyed. MDU is "dead", but unharmed.
16-25	Sensors destroyed. Unit is blind and deaf, but still under the control of Damocles. MDU will try to escape, moving slowly.
26-35	Main gun damaged. Can no longer fire.
36-45	Co-ax gun damaged. Can no longer fire.
46-50	Turret ring jammed. MDU can no longer traverse turret.
51-70	Sterring of one track damaged. MDU can only move in circles.
71-80	Drive train destroyed. Unit cannot move.
81-90	Electrical fire started inside MDU. All systems still function, but unit will "die" in 1-D20 combat turns.

91-100

Units power system damaged. Unit is "dead" for 1-D20 combat turns but will then function normally again.

Ammunition: 400 rounds of 25mm (200 rounds HE, 200 rounds AP), 2100 rounds 7.62mm (21 belts, 100 rounds each belt). NOTE: This vehicle has an automatic belt loader which allows it to fire its entire basic load without stopping to reload.



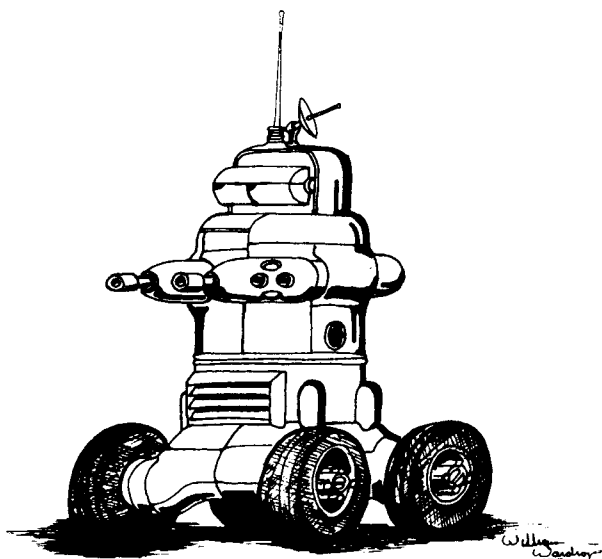
EX-34 7.62 CHAIN GUN

Cal.: 7.62x51mm
 E-Factor: 17
 Effective Range: 1,000m
 Max. Range: 3,752m
 Type of Fire: Selective
 Rate of Fire: 625 rpm (short burst 6, medium burst 10, long burst 20)
 Feed Device: 105 round belt
 Additional Comments: A 7.62mm version of the 25mm chain gun. It has a single feed system and is functionally identical.



M242 25mm CHAIN GUN

Cal.: 25mm
 E-Factor: 67
 Effective Range: 2,000m
 Max. Range: 7,000m
 Type of Fire: Selective
 Rate of Fire: 200 rpm (short burst 4, medium burst 6, long burst 10)
 Feed Device: 100 round belt
 Additional Comments: A "machine cannon" is mounted in the vehicle's turret. It has a dual feed and can fire either high-explosive or armor piercing ammunition. The gun is powered by an electric motor and integral chain drive, giving it a higher rate of fire than the Rh202.



INTERNAL DEFENSE UNITS (IDUs)

These are small, wheeled, electric robots which operate inside of the Damocles buildings and tunnels. Each is armed with twin 9mm x 19 E-9 belt-fed sub-machine guns. There are 10 such units in the complex, all of which are directly controlled by Damocles. Each unit has a base chance of 50% of hitting a human. This chance increases by 10% every combat turn the target remains in the same place. IDUs always fire a short burst from each gun.

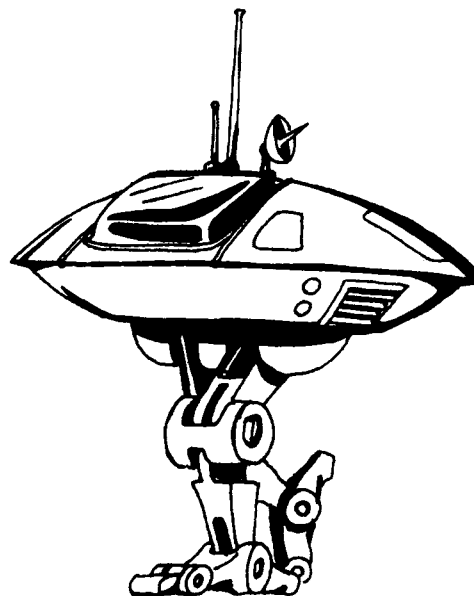
Any hit from the Morrow Team's weapons will automatically render these units inoperative so that they can neither move nor shoot. However, each unit carries within itself a small explosive charge which will turn the entire unit into a rather large fragmentation device. They can be detonated at any time by Damocles. The explosion will have a 5m burst radius and the fragments have an E-factor of 9. If an IDU receives more than 30 E-factor points it is destroyed and Damocles cannot detonate the internal charge.

IDUs are as fast as a man, have an armor class of 2 and are 1/2 the size of a man (i.e. 1/2 human size target). IDUs can function in the absence of light by virtue of their infra-red sighting.

MAINTENANCE UNITS (MUs)

There are roughly 50 Maintenance Units in all. These units are usually mobile (wheeled) and their main use is to take care of repairs and maintenance of all of Damocles' mechanical parts and extensions. No two are identical as Damocles creates or modifies such units as necessary. MUs come in all shapes and sizes and are all completely harmless as they have no offensive capabilities at all. Damocles has never thought of using one to run into an intruder.

PD NOTE: These are great for nuisance value. Few teams quickly figure out which robots are dangerous and which are not. Usually they will blast anything that moves. MUs are thus a good way to make a team use up its ammunition.



SURVEILLANCE UNITS (SUs)

Damocles has 20 SUs. These are two feet tall and move on legs. They carry T.V. cameras, infra-red recorders, and radios. They are mindless and are slaved to Damocles. They roam around the countryside as Damocles' long range eyes. They are not armed. On smooth ground they move twice as fast as a person and in snow only about the same speed as the average person. They are only armor class 2 and will be 'killed' by a hit from any of the teams weapons. Unless they are blown completely apart, they are still dangerous after being hit. This is because they operate on 200 volts of power. If they are touched they will immediately short and ground via the person touching them. If this person is unfortunate enough to be standing in snow or a puddle, double the voltage to 400. Refer to the tables for electrical damage on page 41 of the Morrow Project Game Book.

THE BLACK POWDER WEAPONS OF WITTSSEND

These weapons are locally produced, either in Wittsend by Mat or elsewhere in the U.P., under similar conditions. They are usually patterned after Early American arms of the 18th century. This is the technology available to the inhabitants.

No two are the same. The craftsmen who create these weapons do so with skill and pride. Each is handcrafted, and the parts are unique. Parts are not interchangeable. They are as they were in earlier times, works of functional folk art. Owners of these weapons "personalize" them; many are strikingly handsome. Carved wood, engraved metal, inlays, feathers and beadwork are common.

Muskets are most common because they are cheaper and easier to produce. Rifles are preferred for their greater range and accuracy, but are costlier and much harder to produce, therefore rare. Pistols are coveted. Mostly a status symbol (real or imagined), pistols are lovingly embellished by their proud owners. Many long winter nights go into improving the looks of these weapons.

The weapons are also durable. Relatively simple of construction and operation, using low power propellant, there is not much to go wrong with them. Well cared-for weapons are handed down in families. Hundred-year-old guns are not

uncommon.

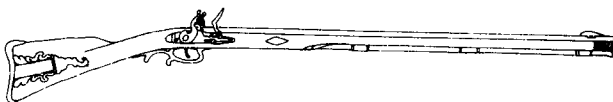
These guns are necessary. They are working guns used to put meat on the family table and to keep the family safe.

Since all weapons are one of a kind items, all weights in the following sections are averages. This is particularly true of the "Weight of load" sections. A "load" consists of lead balls, patches, powder, horns, measures, ball starters, a razor sharp knife, and whatever else the shooter may choose to include.

Balls are usually wrapped in greased patches. The grease comes from anywhere. It may be old and rancid. Unburnt powder often sticks to balls along with the grease. This makes for unusually hideous forms of blood poisoning and wound infections.

The effects of the balls are not so much related to penetration as they are to shock. On impact, the ball does not pierce a target so much as it smashes its way in. Merry, unpleasant, and often fatal.

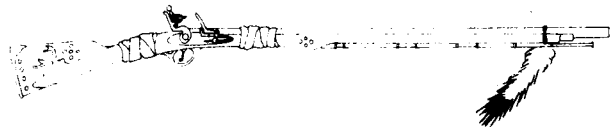
Owners are generally good shots, especially if riflemen. They have to be, as they usually get only one shot. Smaller caliber weapons exist, but are specialty items. The ones listed here are the large caliber general purpose guns necessitated by elk, bear, wolf and con. The riflemen can shoot at a squirrel at 100 meters, cause the bullet to pass 1/2 an inch in front of the startled animal's nose, causing the squirrel to expire from a heart attack. This means a kill without damage to meat or fur, which may well become a fine hat



.50 CALIBER RIFLE

Caliber: .50
E-Factor: 14
Weight: 4.5 Kg
Effective Range: 300m
Max. Range: 900m
Type of Fire: Single shot
Rate of Fire: 2 rpm
Feed Device: N/A
Feed Device Weight: N/A
Basic Load: 50 rounds
Load Weight: 2.3 Kg
Total Weight: 6.8 Kg

A true rifle. Lighter and far more accurate than the simpler musket, its major disadvantage is its low rate of fire. The ball must be more carefully patched and seated than with a musket. The tight fit makes for a good gas seal, and allows the rifling to impart maximum spin for range and accuracy. This weapon does have sights. It is shorter and lighter than the musket.



.75 CALIBER MUSKET

Caliber: .75
E-Factor: 12
Weight: 6 Kg
Effective Range: 50m
Max. Range: 200m
Type of Fire: Single shot
Rate of Fire: 6 rpm
Feed Device: N/A
Feed Device Weight: N/A
Basic Load: 50 rounds

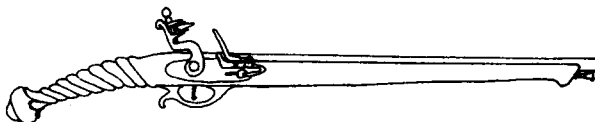
Load Weight: 2.3 Kg
Total Weight: 8.3 Kg

A weapon very similar to the English "Brown Bess", which was standard army issue for the Empire for most of the 18th century and into the Napoleonic Era. This weapon is not a rifle; its barrel has a smooth bore. This accounts for the relatively short range and low E factor in spite of the large (huge) bore of the piece.

The smooth bore is also the reason for the comparatively high rate of fire. The musket is rapidly reloaded. The ROF listed assumes prepared paper artridges. If these are not used, cut the ROF to four rounds per minute.

This weapon can be used as a shotgun. Bits and pieces of this and that can be loaded in lieu of a ball. The musket has no sights. Aiming is accomplished by "looking down the barrel". This is realistic given the weapon's inherent accurate/effective range.

NOTE: For shotgun use: E-Factor 8
Effective Range 50m
Range of Fire 3 rpm



PISTOL

Caliber: .70
E-Factor: 9
Weight: 1.1 Kg
Effective Range: 10m
Max. Range: 100m
Type of Fire: Single shot
Rate of Fire: 6 rpm
Feed Device: N/A
Feed Device Weight: N/A
Basic Load: See note
Basic Load Weight: See note
Total Weight: 1.1 kg

Pistols are rare. When they occur with a rifle, they will be found in the same caliber as the rifle. The majority do not have sights. When sights are found, they are generally limited to a 'bead' on the muzzle of the weapon.

Hopelessly inaccurate beyond a few meters, pistols are more for status than for practical use. A very few pistols have rifled barrels. Specifications for these are as follows:

.50 CALIBER, RIFLED BARREL

E-Factor 11
Effective Range 15m
Max. Range 250m
Rate of Fire 2 rpm

Since pistols are usually carried as a "back up" to a long gun, they operate from the larger weapon's load. Pistols by themselves rate only 5 to 10 rounds.

ARMOR TABLES

TABLE A, COMMANDO SCOUT

	Front	Front/Side	Side	Side/Rear	Rear
Hull					
Front	1-79/80-100	1-74/75-100	1-69/70-100	1-74/75-100	1-79/80-100
Front/Side	1-84/85-100	1-79/80-100	1-74/75-100	1-79/80-100	1-84/85-100
Side	1-89/90-100	1-84/85-100	1-69/70-100	1-84/85-100	1-89/90-100
Side/Rear	1-84/85-100	1-79/80-100	1-74/75-100	1-79/80-100	1-84/85-100
Rear	1-79/80-100	1-74/80-100	1-69/70-100	1-74/75-100	1-79/80-100

Note: Number go in sequence HULL/TURRET.

TABLE B1, COMMANDO SCOUT

HULL		FRONT	TURRET	
DIE ROLL	AREA HIT		DIE ROLL	AREA HIT
1-09	Axle		1-09	Main Gun
10-29	Wheel		10-29	Mantlet
30-44	R. Bow		30-39	Searchlight
45-59	L. Bow		40-59	Cupola
60-79	L. Upper Hull		60-79	L. Front
80-100	R. Upper Hull		80-100	R. Front

TABLE B2, COMMANDO SCOUT

HULL		FRONT/SIDE	TURRET	
DIE ROLL	AREA HIT		DIE ROLL	AREA HIT
1-5	Axle		1-29	Main Gun
6-10	R. Bow		30-39	Mantlet
11-15	L. Bow		40-44	Searchlight
16-25	R. Upper Hull		45-54	Cupola
26-35	L. Upper Hull		55-64	L. Front
36-50	F. Wheel		65-74	R. Front
51-64	R. Wheel		75-100	Side
65-74	Side Front			
75-84	Side Rear			
85-100	Side Center			

TABLE B3, COMMANDO SCOUT

HULL		SIDE	TURRET	
DIE ROLL	AREA HIT		DIE ROLL	AREA HIT
1-19	Front Wheel		1-39	Main Gun
20-39	Rear Wheel		40-44	Searchlight
40-54	Side Front		45-54	Side Front
55-84	Side Center		55-90	Side
85-100	Side Rear		91-100	Cupola

TABLE B4, COMMANDO SCOUT

HULL		SIDE/REAR	TURRET	
DIE ROLL	AREA HIT		DIE ROLL	AREA HIT
1-14	Front Wheel		1-29	Main Gun
15-29	Rear Wheel		30-34	Searchlight
30-39	Side Front		35-44	Side Front
40-50	Side Center		45-64	Side
51-60	Side Rear		65-79	Cupola
61-70	L. Rear		80-100	Rear
71-80	R. Rear			
81-100	Door			

TABLE B5, COMMANDO SCOUT

HULL		REAR	TURRET	
DIE ROLL	AREA HIT		DIE ROLL	AREA HIT
1-19	Wheel		1-09	L. Side
20-34	L. Rear		10-19	R. Side
35-49	R. Rear		20-59	Rear
50-100	Door		60-100	Cupola

TABLE C1, COMMANDO SCOUT

	CLASS OF WEAPON							Flame
	A	B	C	D	E	F	G	
Chance of Penetration	99	99	99	99	80	50	1	N/E

NOTES:

1. Due to the slope of the armor on the following areas, add 10 to any penetration die roll: upper left hull, right upper hull.
2. Penetration by an A or B class weapon automatically results in a catastrophic kill.
3. All hits must be direct hits to penetrate. For example, an 81mm HE round must impact **ON** the vehicle, not **NEAR** it, to penetrate.

TABLE C2, COMMANDO SCOUT

AREA HIT	STRUCK BY		EFFECT
HULL	AP	HE	
Wheels & Axles	75	90	Vehicle immobilized
Right Bow	50	70	Vehicle immobilized, drive train damaged.
	70	80	Power plant damaged, vehicle immobilized.
	10	10	Driver wounded.
Left Bow	50	70	Vehicle immobilized, drive train damaged.
	10	20	Auto Nav damaged, will not function.
	50	60	Driving controls damaged.
	5	15	M-21 damaged, will not fire.
	50	60	Kill/wound driver.
Right Upper Hull	20	30	Power plant damaged, vehicle immobilized.
	70	80	Power plant damaged, vehicle immobilized.
	20	30	Driver wounded/killed.
Left Upper Hull	20	30	Auto Nav damaged, will not function.
	10	20	M-21 damaged, will not fire.
	60	80	Kill/wound driver.
	10	20	Power plant damaged, vehicle immobilized.
	10	20	Computer destroyed.
	10	20	RDF Destroyed.

AREA HIT HULL	STRUCK BY		EFFECT
	AP	HE	
Right Side Front	50	60	Vehicle immobilized, drive train damaged.
	20	40	Power plant damaged, vehicle immobilized.
Right Side Center	80	90	Power plant damaged, vehicle immobilized.
	10	20	Driver wounded
	40	60	Ammo/grenades detonated
	10	20	Computer destroyed
	10	20	RDF destroyed
Right Side Rear	20	40	Detonate ammo/armbrusts
	40	50	Jam turret, turret will not traverse.
	50	60	Kill/wound gunner
	40	50	Vehicle immobilized, drive train damaged.
Left Side Front	30	40	Detonate 20mm ammo/explosives locker.
	50	60	Vehicle immobilized, drive train damaged.
	20	30	Driving controls damaged.
Left Side Center	10	20	Power plant damaged, vehicle immobilized.
	80	90	Kill/wound driver.
	40	50	Power plant damaged, vehicle immobilized.
	50	60	Auto Nav destroyed.
	40	50	M-21 destroyed.
	50	60	Driving controls damaged.
	50	60	Computer destroyed.
	50	60	RDF destroyed.
Left Side Rear	50	60	Claymore mines detonated.
	40	50	Jam turret, turret will not traverse.
	50	60	Kill/wound gunner.
	40	50	Vehicle immobilized, drive train damaged.
	30	40	Detonate 20mm ammo/armbrusts
	50	70	Mountain kit destroyed.
	50	70	Ration packs destroyed.
Right Rear	50	70	Trade pack destroyed.
	30	40	Kill/wound gunner.
	10	15	Vehicle immobilized, drive train damaged.
	15	30	Detonate armbrusts.
Rear Door	50	70	Detonate 20mm ammo/explosives locker.
	70	80	Kill/wound gunner.
	50	60	Detonate 20mm ammo
Left Rear	40	50	
	20	30	Kill/wound driver
	30	40	Kill/wound gunner
	15	30	Detonate armbrusts
	10	15	Vehicle immobilized, drive train damaged.
	50	70	Mountain kit destroyed.
	50	70	Ration packs destroyed.
	50	70	Trade pack destroyed.

AREA HIT TURRET	STRUCK BY		EFFECTS
	AP	HE	
Main Gun	75	90	Gun damaged, will not fire.
Search Light	80	100	Search light destroyed.
Mantlet	20	30	Main gun damaged, will not fire.
	30	40	Co-ax gun damaged, will not fire.
	40	50	Kill/wound gunner.
Cupola	40	50	Gun sight destroyed.
	50	60	Kill/wound gunner.
Right Front	60	80	Co-ax gun damaged, will not fire.
	40	50	Main gun damaged.
	30	40	Kill/wound gunner.
	15	25	Detonate 7.62 ammo
Left Front	70	80	Main gun feed system destroyed, main gun will not fire.
	40	50	Main gun damaged, will not fire.
	30	40	Kill/wound gunner.

AREA HIT TURRET	STRUCK BY		EFFECT
AP	HE		
Right Side	70	80	Control panel destroyed.
	20	40	7.62 ammo detonated.
	20	40	Radio destroyed.
	30	40	Kill/wound gunner.
Left Side	70	80	AN-TVS 5 binoculars destroyed.
	70	80	Laser range finder destroyed.
	20	40	7.62 ammo detonated.
	20	40	Radio destroyed.
Rear	30	40	Kill/wound gunner.
	70	90	7.62 ammo detonated.
	70	90	Radio destroyed.
	50	60	Kill/wound gunner.

ADDITIONAL NOTES:

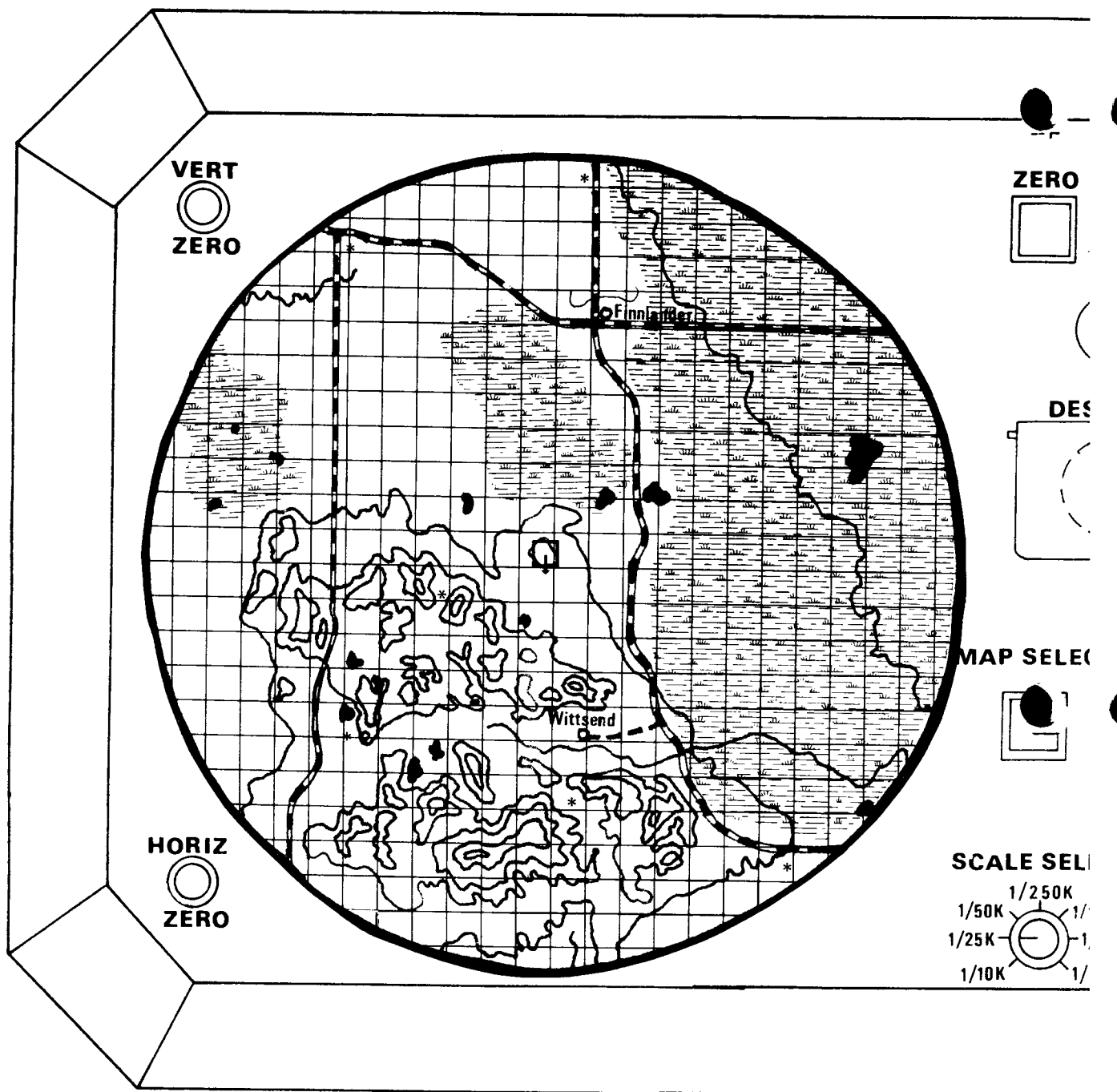
The Commando Scout is a very small vehicle. It is small and fast by design because if it is hit and penetrated the results will likely be devastating. It is not a tank, those trying to use it as a tank are likely to learn how vulnerable this vehicle is. The Scout only carries two crew members. It cannot carry more, at least not inside of the vehicle.

The detonation of ammo, grenades or mines carried inside of the vehicle will cause a chain reaction resulting in the total destruction of the vehicle, its contents and occupants. This is a catastrophic kill.

No tables are included for the XR 311. None are necessary. The 311 is an open vehicle providing minimal armor protection; roughly that of a jeep. The stores carried by the XR 311 are tied down upon the rear deck of the vehicle; easy to get at and easily destroyed by small arms fire.

GLOSSARY OF TECHNICAL TERMS AND ABBREVIATIONS

Amerind/Amer Ind	American indian
Ammo	Ammunition
Auto Nav	Morrow Project Automatic Navigation system
Chain Gun	Fully automatic, single barreled, high rate of fire gun system utilizing a chain drive. Currently mounted on the U.S. Army's new Bradley Infantry Combat Vehicle.
Co-ax	Co axial gun. The machine gun mounted in tandem with the main gun of a turreted vehicle.
Commo	Communications
Damocles	From the expression "Sword of Damocles" referring to any imminent danger. Legend has it that a courtier visiting ancient Greece was seated at a feast beneath a sword that was suspended above his head by a single thread. This was done to educate the courtier as to the nature of the perils facing the life of a ruler.
Holography/hologram	A photographic system utilizing no lenses to project a three dimensional image, apparently suspended in mid air. Advanced systems utilize lasers to create a moving or stationary image which is difficult to identify from a real object/scene.
I.D.U.	Internal Defense Unit. One of the systems deployed within Damocles.
M.D.U.	Mobile Defense Unit. One of the systems deployed by Damocles.
M.G.	Machine Gun
MPGB	Morrow Project Game Book
MPID	Morrow Project Identification card
MP	Morrow Project
MPV	Morrow Project Vehicle
PD	Project Director. The Morrow Project game master.
RDF	Radio Direction Finder
S.U.	Surveillance Unit. One of the systems deployed by Damocles.
Trans	Transmission. Electronic communications such as radio or micro wave.
U.P.	Upper Peninsula. The Upper Peninsula of the State of Michigan.



VERT ZERO; Allows adjustment of the displayed map to the unit in the vertical plan.

HORIZ ZERO; Allows adjustment of the displayed map to the unit in the horizontal plane.

ZERO; Allows the use of the Vert and Horiz adjustment dials.

DESTRUCT ARM; (covered toggle switch) Arms the destruct system causing a beeping sound once per second until fired or disarmed.

DESTRUCT; (covered push button) With the seal wire broken, cover lifted, and button depressed the system fires an internal thermite charge in five seconds. The charge destroys the Interior of the AutoNav.

MAP SELECT; Initiates system allowing the use of the keyboard to select a specific map.

SCALE SELECT; Determines scale of map displayed.

KEYBOARD; Used to input information into system.

SENSOR SYSTEM SELECT

RDF; Allows radio direction finder (if available) on display screen.

MAG; Allows magnetic sensor (if available) to display targets on display screen.

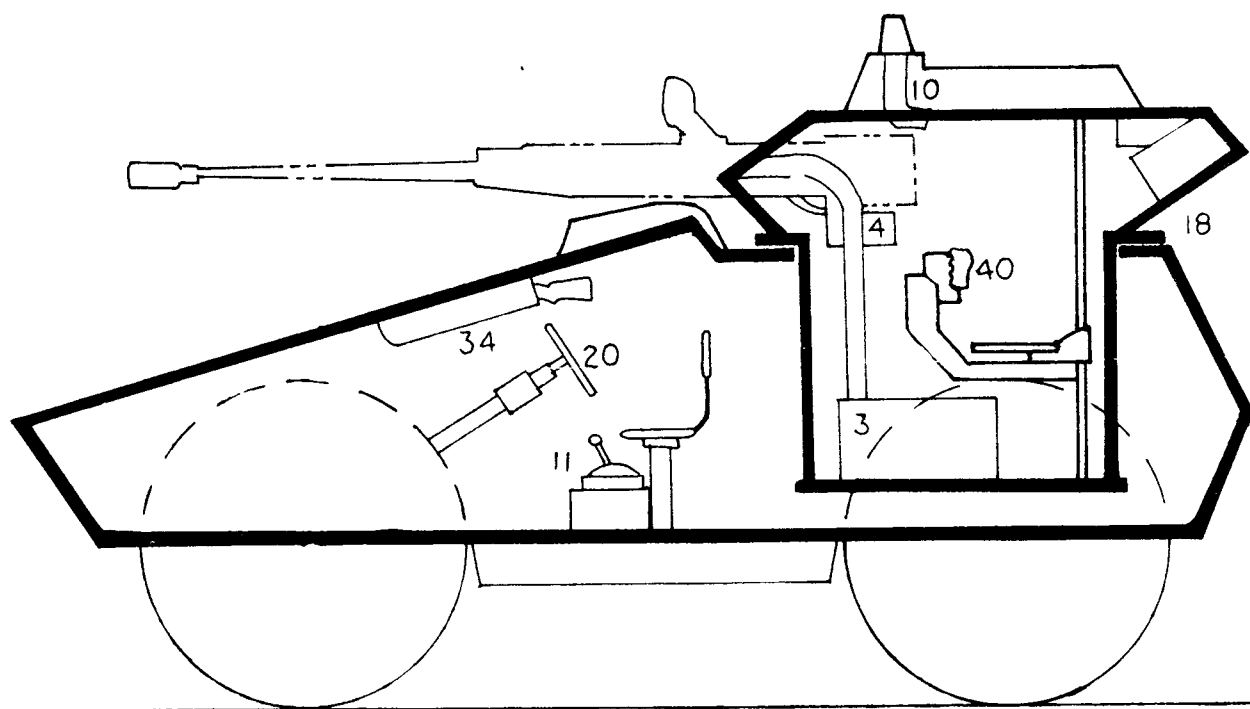
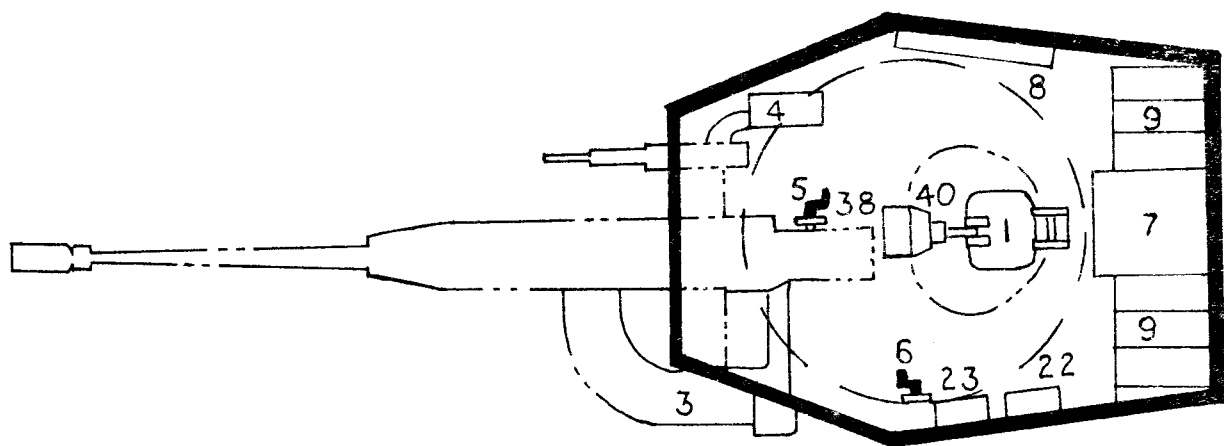
RADAR; Allows radar set (if available) to be used on display screen.

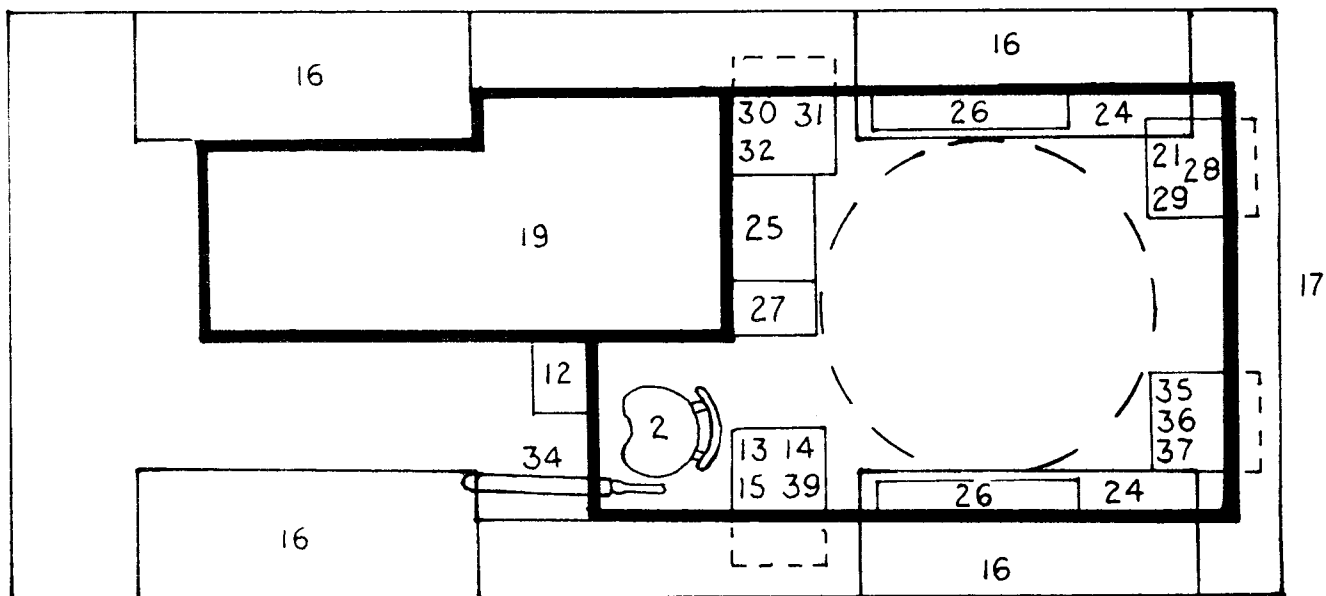
CACHE LOCATION; Shows all assigned cache locations on display screen.

LIBRARY; Reads out all available maps on display screen.

INTERIOR, COMMANDO SCOUT

NO.	QTY.	DESCRIPTION
1.	1.	Commanders seat
2.	1.	Drivers seat
3.	1.	20mm ammo box and power feed system
4.	1.	7.62 ammo box and power feed system
5.	1.	Manual crank (depresses and elevates both guns)
6.	1.	Manual crank (traverses turret)
7.	1.	AN/PRC 70 radio
8.	1.	Control panel
9.	14.	7.62 ammo boxes
10.	1.	Gunners sight
11.	1.	Drivers controls
12.	1.	Auto Nav
13.	1.	RDF (radio direction finder)
14.	1.	Computer
15.	1.	CRT and keyboard for item 14.
16.	4.	Wheel wells
17.	1.	Door
18.	1.	Turret ring
19.	1.	Engine compartment (contains engine and fusion reactor; power plant)
20.	1.	Steering wheel
21.	3.	20mm ammo boxes (100 rounds each)
22.	1.	Laser range finder
23.	1.	AN/TVS-5 binoculars
24.	2.	Fire extinguishers
25.	1.	1. case each of: 12 guage magnum 00 buckshot. 5.56mm ball ammo, 7.62mm ball ammo, 9mm ball ammo
26.	4.	Armbrust 300
27.	1.	Large medkit
28.	1.	Tool kit
29.	1.	Explosives locker, contains: 1 M183 demolitions charge, 1 roll primer cord, 10 M2A1 detonators, 2 M1 timers
30.	1.	Case M7A3 CS gas grenades
31.	1.	Case M34 white phosphorous grenades
32.	1.	Case M36A1 fragmentation grenades
33.	1.	Set: 1 axe, 1 sledge hammer, 1 machette, 1 shovel, 1 tripod (mounted on outside of vehicle)
34.	1.	M21 rifle and 12 magazines
35.	1.	Mountain kit
36.	1.	Trade pack
37.	2.	Ration packs
38.	1.	Manual fire switch for 20mm gun
39.	2.	M18A1 Claymore mines







BASIC LOAD (VEHICULAR) COMMANDO SCOUT

1 Rh202 20mm Cannon, 100rd belt, Selective-fire, E=63 (Armor Piercing Incendiary ammunition), E=57, Dpw=40 (High Explosive Incendiary ammunition), 3 belts (2 HEI, 1 API), Short burst=10rds, Medium burst=20rds, Long burst=30rds.

HEI (2 belts) *****-*****---

API (1 belt) *****---

1 MAG-58 Machinegun, 100rd belt, Full-auto, E=17, 30 belts, Short burst=6rds, Medium burst=12rds, Long burst=18rds.

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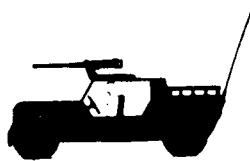
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BASIC LOAD (VEHICULAR) XR-311

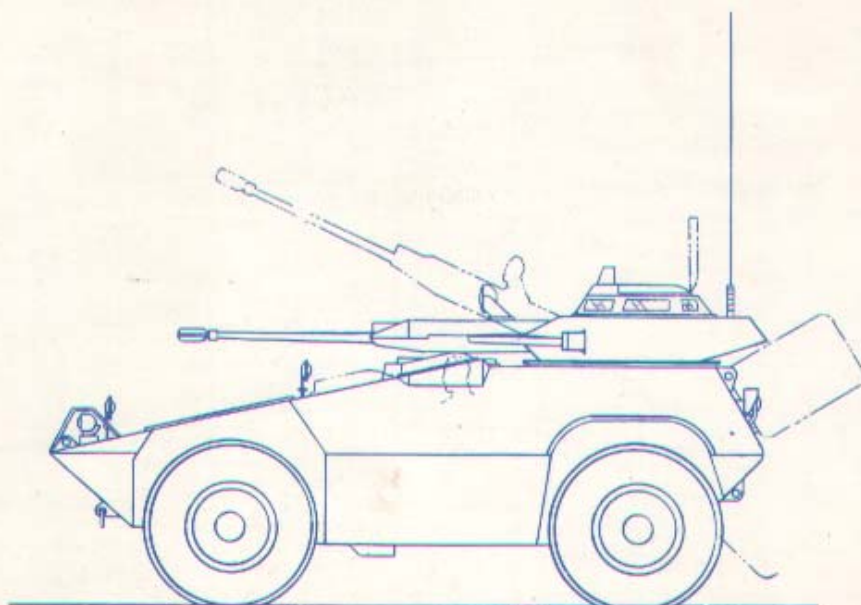
1 M2HB Machinegun, 105rd belt, Selective-fire, E=30, 5 belts,
Short burst=10rds, Medium burst=20rds, Long burst=30rds.

*****_*****_*****_*****_*****_---

* = Short burst

- = Reload

--- = Out of ammunition



A sparkling, white, frigid desert. The relaxing fellowship of a cedar
Ar. na. The eerie, subterranean morgue of Project Damocles. Recon
Au team G-9 will experience all of this and more when they enter the post
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includes information concerning new weapons, the interior of the
Commando Scout, and the most extensive treatment of computers ever
included in a role playing game.

**POSSESSION OF THE MORROW PROJECT GAME BOOK IS
NECESSARY TO THE USE OF THIS GAME PACKAGE.**