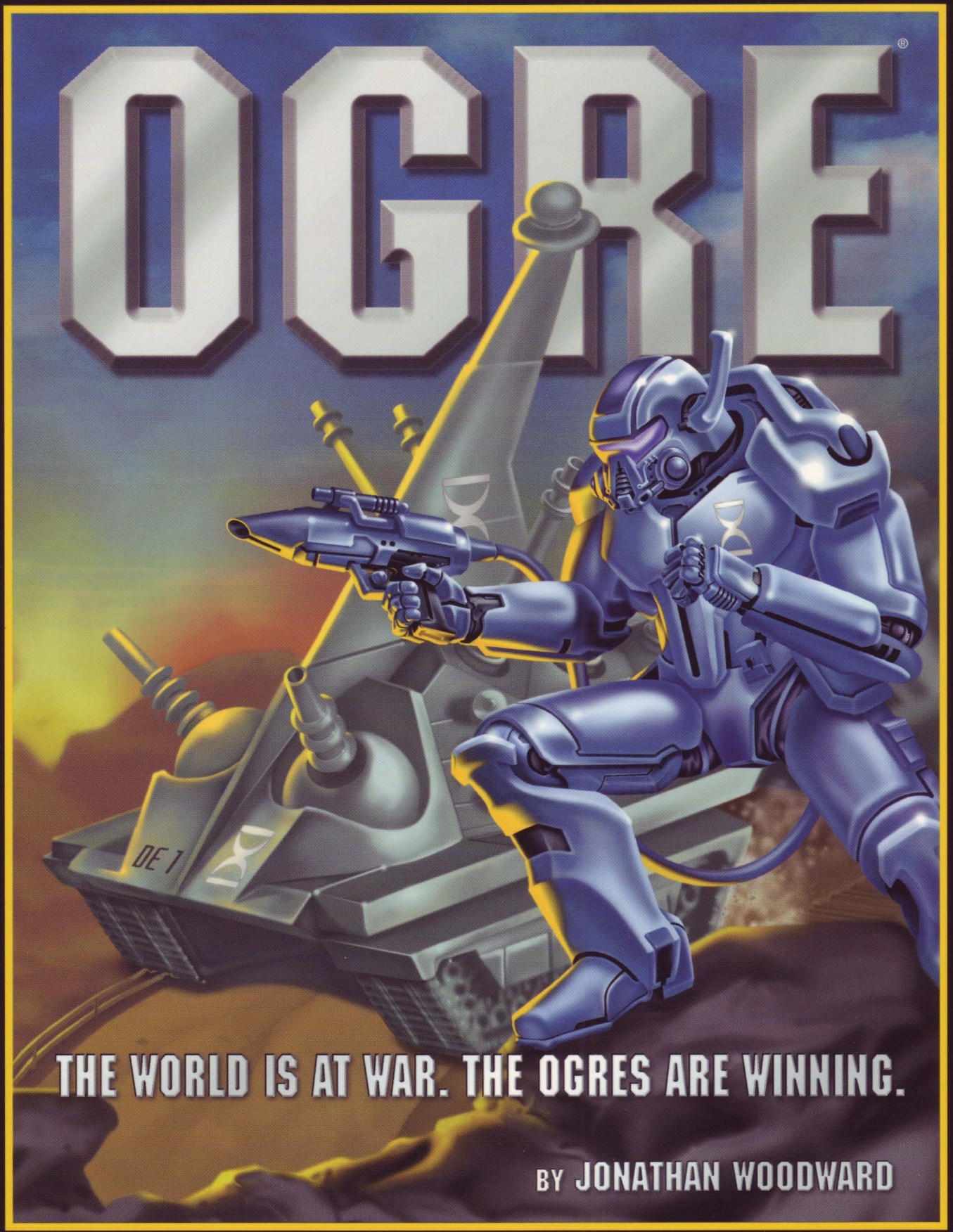
GURPS®

OGRE®



THE WORLD IS AT WAR. THE OGRES ARE WINNING.

BY JONATHAN WOODWARD

STEVE JACKSON GAMES

THE LAST WAR

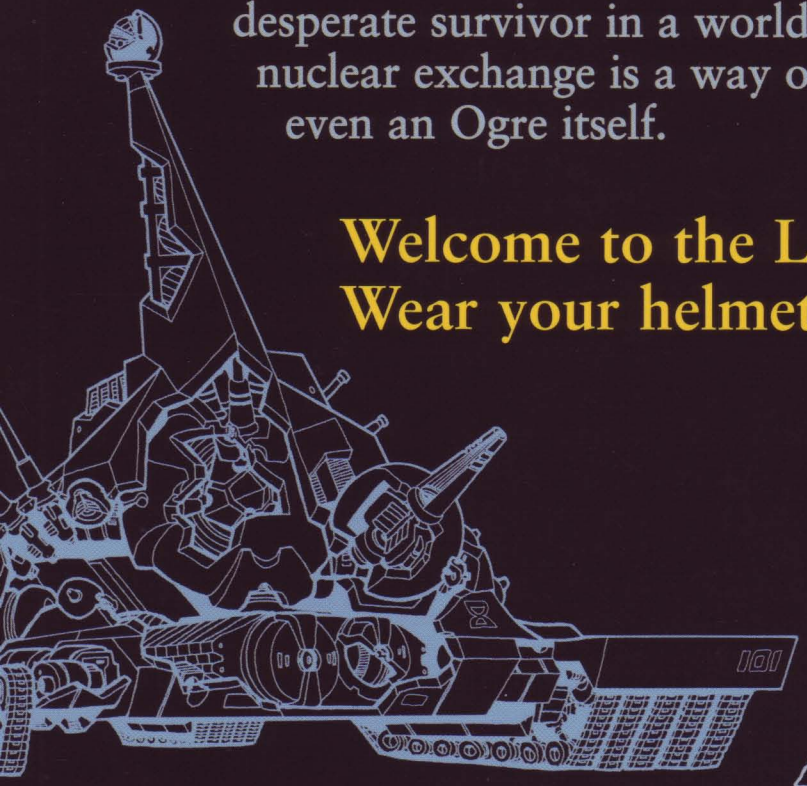
. . . where survival is a matter of luck, skill, and superior firepower.

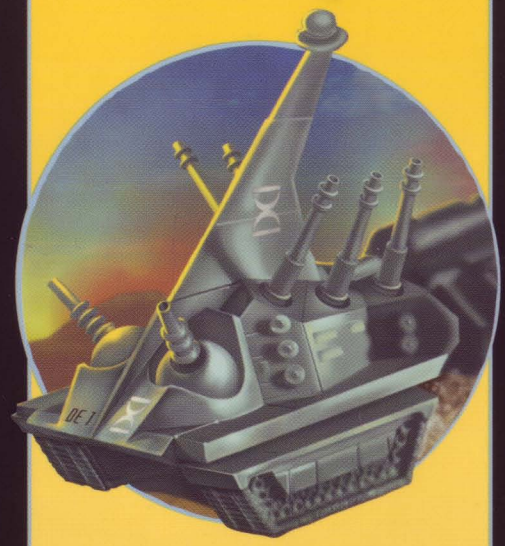
The year is 2060, and the first fully cybernetic tank is rolling off the assembly line – and into a world at war. Tactical nuclear weapons scorch the forests of Europe. Rebellious cities burn. And the Ogres are here.

More than 25 yards long and bristling with high-tech weaponry, the Ogres are the last word in killing machines. They storm across battlefields, terrorizing friend and foe alike. And worse, some are more than mere machines – some are *aware* . . .

This book adapts the setting of the classic *Ogre* wargame into an exciting roleplaying universe. You can be a member of the ruthless armed forces of the late 21st century, a desperate survivor in a world where nuclear exchange is a way of life, or even an Ogre itself.

Welcome to the Last War. Wear your helmet.





GURPS Basic Set, *Third Edition Revised* is *required* to use this supplement in a ***GURPS*** campaign. ***GURPS Compendium I: Character Creation*** and ***GURPS Vehicles*** are strongly recommended. The setting presented in ***GURPS Ogre*** can be used with *any* game system.

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STEVE JACKSON GAMES

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OGRE®

The World Is at War. The Ogres Are Winning.

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Edited by Monica Stephens, Sean Punch, and Steve Jackson
Cover by John Zeleznik
Illustrated by Storn Cook, C. Brent Ferguson, Zach Howard, Denis Loubet, David Lynch, Kyle Miller, and Dan Smith • Original ***Ogre*** art by Winchell Chung
Based on ***Ogre*** and its sequels, by Steve Jackson

Author's Dedication: To Rich Dansky, who got me into this crazy business.
Thanks to Stephanie Clarkson, Carl Johan Freiler, Leonardo M. Holschuh, Phil Masters, Brian McCue, Hal Reed, and Bill "Crash" Yerazunis. Special thanks to David Pulver, for answering a hundred ***GURPS Vehicles*** questions.

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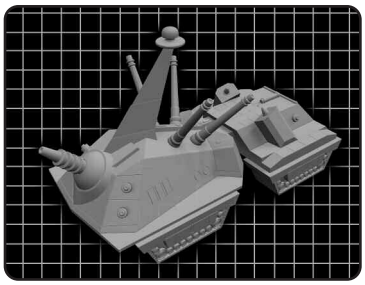

About GURPS

Steve Jackson Games is committed to full support of the ***GURPS*** system. Our address is SJ Games, Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! Resources now available include:

Pyramid (**www.sjgames.com/pyramid**). Our online magazine includes new rules and articles for ***GURPS***. It also covers the hobby's top games – ***Advanced Dungeons & Dragons, Traveller, World of Darkness, Call of Cthulhu, Shadowrun,*** and many more – and other Steve Jackson Games releases like ***In Nomine, INWO, Car Wars, Toon, Ogre,*** and more. And *Pyramid* subscribers also have access to playtest files online, to see (and comment on) new books before they're released.

New supplements and adventures. ***GURPS*** continues to grow, and we'll be happy to let you know what's new. A current catalog is available for an SASE. Or check out our Web site (below).

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Internet. Visit us on the World Wide Web at **www.sjgames.com** for an online catalog, errata, updates, and hundreds of pages of information. We also have conferences on Compuserve and AOL. ***GURPS*** has its own Usenet group, too: rec.games.frp.gurps.

GURPSnet. Much of the online discussion of ***GURPS*** happens on this e-mail list. To join, send mail to majordomo@io.com with "subscribe GURPSnet-L" in the body, or point your World Wide Web browser to **gurpsnet.sjgames.com/**.

The ***GURPS Ogre*** Web page is at **www.sjgames.com/gurps/books/ogre**.

Page References

See ***GURPS Compendium I,*** p. 181, for a list of abbreviations for ***GURPS*** titles, or for the most recent list, visit our Web site at **www.sjgames.com/gurps/abbrevs.html**.

Page references that begin with a B refer to the ***GURPS Basic Set,*** *Third Edition Revised*; e.g., p. B22 refers to page 22 of the ***Basic Set.*** CI refers to ***GURPS Compendium I***, CII to ***Compendium II***, RO to ***Robots***, UT to ***Ultra-Tech****, Third Edition*, and VE to ***Vehicles****, Second Edition.* OGM refers to ***Ogre Miniatures***.

>INTRODUCTION

The command post was well-guarded. It needed to be. The hastily constructed, unlovely building was the nerve center for Paneuropean operations along a 700-kilometer section of front – a front pressing steadily toward the largest Combine manufacturing center on the continent.

Inside the post, the mood was relaxed – except at one monitor station, where a young lieutenant watched a computer map of the island. A light was blinking on the nearby river. Orange: something was moving, out there where nothing should be.

The lieutenant hit a key, and an image appeared . . . something rising from the river like the conning tower of an old submarine. A second before the whole shape was visible, he recognized it – but for that second he was frozen. And so 30 men with their minds on other things were suddenly brought to heart-pounding alert, as the lieutenant's strangled gasp and the image on his screen gave the same warning . . .

"Ogre!"

More than 20 years ago, Steve Jackson's first design hit the market. The original ***Ogre*** was a clean, small wargame which presented a dark vision of a nuclear future. A small force of tanks, hovercraft, and battle-suited infantry were placed in the path of a nearly unstoppable cybernetic juggernaut. Atomic-powered and atomic-armed, the Ogre had arrived.

In the decades since, half a dozen supplements, spin-offs, and sequels have expanded the popular ***Ogre*** world. With this book, ***Ogre*** becomes a roleplaying universe, turning the faceless "1/1" squads of infantry from the wargame into player characters. The world is at war. The Ogres are here. Try to survive.

About the Author

Jonathan Woodward is a part-time freelance writer and full-time computer professional. He is co-author of several books for White Wolf Publishing's *Trinity* science-fiction roleplaying game. This is his first book for Steve Jackson Games. In addition to roleplaying, he is an amateur cartoon historian and a ruthless comic-book annotator. As a former Army Reservist, he finds the notion of being sent up against an Ogre personally terrifying. He lives in Massachusetts with the obligatory cat.

About Ogre

Ogre and its sequel, ***G.E.V.***, have spawned a number of supplements including ***Shockwave, Ogre Reinforcement Pack, Battlefields***, and *The Ogre Book,* as well as ***Battlesuit*** (infantry battles in a different scale than the original game), ***Ogre Miniatures*** (providing rules to play using miniatures figures), and this book.

For the entire history of this classic game, visit the official ***Ogre*** Web site at **www.sjgames.com/ogre/**. It's full of scenarios, history, and other info on ***Ogre*** and the ***Ogre*** universe.

> 1.0 HISTORY OF
> THE LAST WAR
> BEGIN

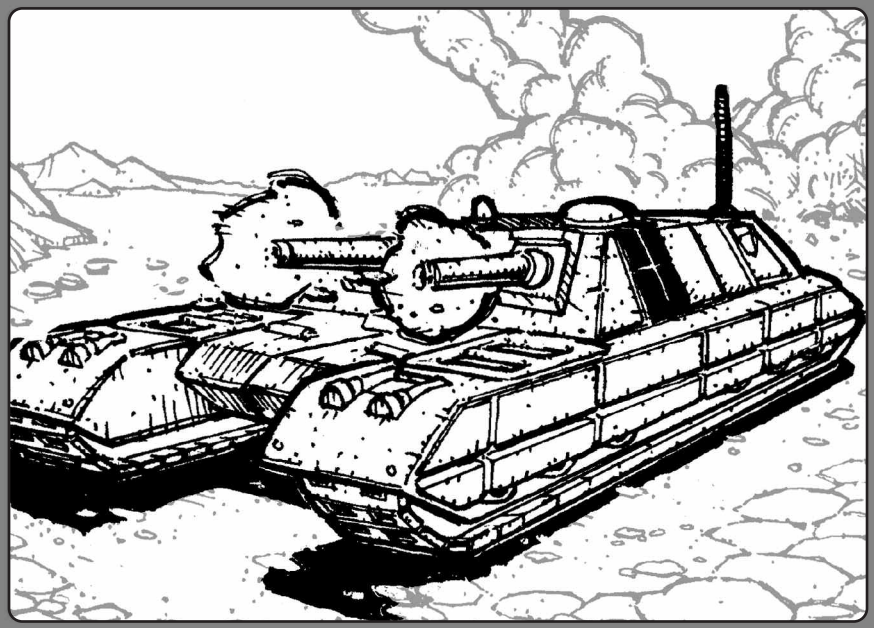
DISPLAY

>ARCHIVE:
>2086.1FAX345DSA

>SUBJECT:
>PANEUROPEAN
>CDV-18 "THOR"
>SUPERHEAVY TANK

>WEAPONRY:
>2X 135MM LB
>GAUSS CANNON
>1X 40MM SB
>GAUSS CANNON
>3X 30MM DUAL-
PURPOSE RAILGUNS

>PRIMARY DESIGN
>OBJECTIVE:
>MATCH OGRE MK1



Behind a dark warehouse, a man and a woman furtively approached a heavy door. One knock, then two close together, then three knocks more widely spaced – the rhythm of "The Star-Spangled Banner." The door slid open.

"C'mon in and hush up; she's about to start."

The man and woman walked into a narrow storage locker filled with chairs. An impromptu podium stood in front of them. They took seats near the back as a tall dark woman stepped up to the podium.

"Hello. I may be Kilroy Gold. I may not. I'm here to tell you about America, back before the Combine, when disagreeing with the government was the national sport and every soul could go to hell in its own way. I'm here to tell you about when Germany and Japan were our allies, and our only enemies were petty dictators and terrorists. I'm here to tell you about capitalism, and electoral colleges, and the First Amendment.

"I'm also going to tell you how to make bombs out of soap. How to make guns that don't show up on metal detectors. How to crack datalines. How to vanish in a crowd. We need to destroy this country if we're going to save it."

Shifting Giants: 2005-2015

In the first decades of the new millennium, Western diplomacy proved unable to stop the racial strife, battles, and genocide in eastern Europe. When the United States declined to commit further air power to NATO's peacekeeping efforts, the European powers determined to solve the problem themselves.

Beginning in 2005, European armies moved into the Balkans and efficiently (some would say ruthlessly) stopped the fighting, creating puppet governments and enforcing rigid martial law. Unrest continued, but open "ethic cleansing" and warfare stopped. Russia protested this military action on its doorstep, but the complaints were perfunctory, with an undertone of "we should have done that first."

The world saw rapid technological advance during this period. Both the United States and Europe orbited viable space colonies; see sidebar, p. 24. Other achievements included battle lasers, cloning, and viable fusion; this was a necessity, since oil wells across the world were beginning to run dry, especially in the U.S.

Rising Empires: 2015-2035

In 2015, the "pacified" countries of eastern Europe becan to stir once again, and the European Union and Russia underwent a metamorphosis, from the largely economic E.U. into the mutual-defense organization called the Paneuropean Federation. Simultaneously, the Paneurope founders withdrew from NATO, effectively dissolving that organization. The United States removed its remaining military forces from Europe. The United Kingdom, never an enthusiastic participant in the E.U., refused to join the new Federation, instead establishing stronger ties with the U.S. Paneurope continued to occupy and control its "protectorates" in the Balkans, establishing a schedule for their promotion to full Federation membership. The Ukraine, Georgia, and Azerbaijan were allowed to maintain the fiction of independence as the Free States, but they were simply protectorates under another name.

Eight years later, the United States, Canada, and Mexico created a similar mutual-defense organization, the North American Combined States,

informally known as the Combine. Initially, this treaty allowed for continued self-government by Canada and Mexico, but when a major earthquake destroyed much of Mexico City in 2024, the Combine Council saw an opportunity. It used its broad and vaguely defined powers to spearhead the relief efforts by setting itself up as the "interim" government. The success of this strategy inspired a vigorous effort to integrate the three nations completely.

This began with "standardization" of trade barriers, which effectively meant that inter-nation commerce became as unrestricted as interstate trade. The "obvious" threat from an aggressive Paneurope, and the unrest in South America, meant that the public was largely in favor of the Combine, so the Council's integration efforts were passed by the legislative bodies of each nation with strong public support.

Further blurring of national distinctions continued over the next decade, largely to the public good. The areas along the Mexican-U.S. border were a notable exception, with massive economic turmoil caused by the "relaxation" of immigration laws. Quebec was another exception, as language incompatibilities caused a minor trade barrier of their own.

In the late 2010s, an economic collapse (probably due to the conflicts in Europe and South America) began in the western Pacific Rim countries. Japan was not affected as severely as some nations, but the yen entered a brief period of hyperinflation. This triggered a series of protests against the Japanese government, propelling a large number of Neo-Traditionalists into power in the next elections. As the Neo-Traditionalists solidified their hold over the next decade and made fundamental changes in the Japanese constitution (which had been imposed on Japan at the end of WWII by the U.S.), a general sentiment grew that it was Japan's duty to take its place as supervisor of its unruly, chaotic neighbors.

The Brazilian War

In 2017, the South American international trade association (MERCOSUR, or Southern Common Market) began to collapse. Long-time rivals Brazil and Argentina argued fiercely over trivial trade issues. MERCOSUR dissolved in early 2018, causing economic dislocations across South America. Simultaneously, rumors circulated that portions of Venezuela, Colombia, and Brazil were planning to secede and form a new nation, "Amazonia." The origin of the rumors was unknown; Argentina and the U.S. were suspects. The Brazilian backlash fueled their proprietary interest in the Amazon basin – all of it.

In 2019, a small Venezuelan oil company discovered massive fields of oil near Boca Mavaca in southern Venezuela. U.S. oil companies made polite inquiries about drilling rights, which were rebuffed by the Venezuelans. The U.S. seemed to accept this, but within weeks, Brazilian forces invaded Venezuela, eventually seizing the whole country. The U.S. dragged its feet, ignoring Venezuelan protests and requests for aid, and then declared neutrality. Brazil consolidated its hold, and promptly opened negotiations with the U.S. over oil issues. A treaty ensued, and the transparency of America's "neutrality" caused worldwide protests.

Two years later, the mere possibility that the oil fields extended under the neighboring nation of Guyana prompted another Brazilian invasion, and another declaration of neutrality from the Americans. Guyana fought back fiercely, if briefly, but resistance was forcefully put down. Sadly, the oil under Guyana proved to be minimal.

Timeline

1944: British radar-aimed AA guns prove ineffective against German V-1 bombs. First instance of combat between autonomous machines.

1991: During Gulf War, Iraqi soldiers wave white flag to an unguided, unmanned aerial observation vehicle. First surrender of man to robot.

1995: Final ratification of the full North American Free Trade Act, the first real step toward a continent-wide government.

1998: The "euro" becomes the official currency of the European Union, except in the U.K.

2000: Biphase carbide (BPC) is invented at the Technion-Israel Institute of Technology.

2005: Claiming economic and security concerns, the European Union annexes the Czech Republic, Hungary, Kosovo, Montenegro, Serbia, Slovakia, and Vojvodina, creating a protectorate. Russian protests are ineffectual.

2006: Russian-Ukrainian L-4 colony.

2008: U.S. L-5 colony.

2009: European Union annexes Balkan nations.

2010: First commercial fusion plant online, Vancouver.

2012: U.S. oil nearly gone.

2015: Formation of the Paneuropean Federation from the European Union, Russia, the Balkans, and other western Soviet republics. United Kingdom does not participate.

2019: Massive oil discovery in Venezuela. Within two weeks, Brazil moves in and grabs the country. American neutrality appears to have been bought with the promise of oil.

2020: 12-Minute War. Tel Aviv, Cairo, and Damascus are all blasted by concealed nuclear weapons.

2022: Argentina declares war on Brazil.

2023: United States, Canada, and Mexico federate as the North American Combined States.

Anti-ICBM laser technology is developed.

2027: First workable battlesuits developed by the Combine.

2035: Rise of conservative influence in Japan; establishment of Nihon Empire.

Brazilian War fizzles out with little effect.

Continued on next page . . .

Timeline (continued)

2037: Quebec economy worsens. Protesting "cultural imperialism," Quebec seeks Paneuropean aid to preserve use of the French language in its schools. High-level diplomacy accomplishes nothing; English remains the official Combine language.

2040-2043: Asian provinces of Paneurope wracked by riots, racial strife, strikes. Chinese interference is suspected.

2046: Sino-European War begins. Initial thrusts and counters quickly bog down into a slow land war.

2049: Nihon brokers end to Sino-European War. Both sides claim victory.

2051: Under increasing pressure to join Paneurope, United Kingdom moves closer to Combine.

Treaty of Liverpool formally allies United Kingdom and Combine for "mutual defense."

2060: Ogre Mark I enters production. Combine military forces are based throughout U.K., outnumbering native forces 5 to 1. In return, Combine agrees to share military technology freely with U.K.

Nihon Empire invades Philippines and New Guinea.

2065: Quebec separatist riots and strikes lead to full-scale revolution. Ogres see combat for the first time in the Battle of Montreal.

Nihon launches its first cybership.

2066: Ogre Mark II enters production. Seattle-Vancouver facility is built to produce larger Ogre types.

Annexation of Central America into the North American Combine.

Continued on next page . . .

In 2022, Argentina declared a "defensive" war on Brazil which was quickly joined by most of the other South American countries except Chile and Ecuador. Suriname and French Guiana, afraid of Brazilian retribution, provided only medical support to the Argentine alliance. The assault by the Argentine navy was turned back by Brazilian ships carrying American weapon systems, and the ground invasion bogged down along a front near the eastern border of Paraguay. A state of "pro forma" war followed, with neither side willing to force the issue or back down. The Brazilian War was effectively over by the early 2030s, and a nominal treaty was signed in 2035, restoring old borders but leaving a corrupt government in Venezuela under the control of American economic interests.

The 12-Minute War

On June 17, 2020, Tel Aviv-Yafo in Israel was devastated by a hidden nuclear device. Twelve minutes later, similar devices exploded in Damascus and Cairo. No one convincingly took credit for the bombs, and the interim governments warily declared a truce. Paneurope considered invading to restore order, as they had done in the Balkans, but instead decided to provide support for the recovery process. The three nukes were relatively small but very dirty, and the affected cities had still not fully recovered by the time of the Last War.

The 12-Minute War caused a fundamental shift in attitudes toward nuclear weapons, creating a distinction between strategic and dirty weapons, and small, clean nukes. The latter were being used in war by 2047; the former rarely saw use.

Big Revolts and Small Wars: 2035-2060

In 2035, the Japanese government underwent fundamental restructuring from within, restoring the Emperor as more than a figurehead and discarding the last limitations of the old constitution. The new nation was known in English as *Nihon,* the name natives had used for "Japan" all along. The Empire began a series of relatively nonviolent, but inexorable, purges of Western influences, and dramatically increased military spending. Since the Combine still considered Nihon an ally, they made only token grumblings. The Chinese were busy elsewhere.

The Sino-European War

Beginning in 2040, the eastern provinces of Russia fell into turmoil. Native Asiatic peoples rose up against ethnic Russians, massive multi-industry strikes paralyzed the economy, and independence movements sprang up like weeds. Paneuropean forces moved in to restore order, with limited effect. After several years of sporadic rebellions and riots, three Chinese agents provocateur were captured by Paneuropean intelligence. Russia angrily began rounding up *all* ethnic Chinese in the affected areas, placing them in detention camps. Although the camps were relatively clean and safe, the inmates had no idea when they would be freed or what would happen to them. The Chinese government protested, then alternately disavowed and asked for the return of its agents.

In 2046, a Chinese special ops squad was captured attempting to rescue detention-camp inmates. War was declared within days. The initial Paneuropean thrust went through Mongolia, but was quickly overwhelmed by massive waves of Chinese infantry. The Chinese counterattack was too slow, easily countered before it had gotten more than a few miles over the Russian border. This pattern repeated itself many times over the following three years; China had a formidable defense, but no offense to speak of.

In 2048, Nihon determined the Sino-European war was precipitating another general Asian economic collapse, and began diplomatic efforts to end the war. The Treaty of Osaka was signed in 2049. China promised massive payments (mostly in the form of oil and metals) in exchange for the provinces of Amurskaya and Primorsky, which were predominantly ethnic Chinese in population. Russia moved all the ethnic Chinese it had detained into these provinces and evacuated all non-Chinese. Both sides claimed victory.

The Combine: Growing Pains

In an effort to smooth the economic problems caused by integration of the three Combine nations, the Council began to enforce English as the only language in public schools, official documents, etc. This move spurred protests in Mexico, and fierce riots in Quebec. Quebecois officials requested help from France in preserving their culture. France, through Paneurope, made some minor efforts, which were blown out of proportion by the Combine press into "active interference in the internal affairs of the Combine." Relations between Paneurope and the Combine worsened, and the Quebec government was replaced with one more Combine-friendly.

Timeline (continued)

2068: Combine builds Ogre facilities in Oshawa, Toluca, and Sheffield.

Ogre Mark III enters testing.

Nihon consolidates all formerly independent southeast Asian territories.

2070: Paneuropean Federation protests Sheffield facility by blockading the U.K. Combine refusal to dismantle plant raises international tension. A Combine frigate and a Paneuropean submarine destroy each other in the North Atlantic, triggering the Last War. Combine forces land in France but fail to establish a permanent beachhead. Ogre Mark Is and IIs head into Siberia via Alaskan fortifications.

2071: Ogre Mark III goes into production in Seattle. Data and templates immediately shipped to Sheffield.

Sino-Nihon war begins with Nihon raids in Korea, followed by landings in force in Korea and Manchuria.

2073: Contact with orbital colonies lost.

Continued on next page . . .

Timeline (continued)

2074: Ogre Mark IV and V start development; problems in drivetrain and missile rack system delay Mark IV production.

First Paneuropean assault on the U.K. is unsuccessful. Combine establishes beachheads in Africa, consolidating some 10% of the continent. Paneurope responds in kind.

Sino-Nihon war heats up. Nihon cybertanks seen for first time, in the Battle of Hong Kong.

2076: Ogre Mark V produced in new Houston facility. Detroit facility begins construction. First tests of converted supertankers for Ogre transport. Paneuropean submarines sink five Mark IIIs just beyond Lisbon; three make it to shore anyway.

Last Atlantic satellite surveillance destroyed. Sky clearing becomes a continual operation for both Combine and Paneuropeans.

Second Paneuropean assault on the U.K. is a disastrous failure.

2077: Massive Combine force establishes beachhead at The Hague. After six months, invaders are contained within Bremen-Cologne-Brussels arc, with huge losses by both sides.

2078: Battle of Gibraltar – Combine Ogres smash Paneuropean Second Army and push into Spain, followed by conventional forces. Spanish provinces capitulate; Paneuropean forces stop invaders at foothills of Pyrenees. Northern Combine invasion force then breaks out. Strasbourg falls; Paris and Frankfurt threatened.

Paneurope introduces superheavy tank, later copied by the Combine.

Chinese invasion of Philippines.

2079: United Kingdom falls. Sheffield Ogre plant captured largely intact. New British government immediately integrated into Paneuropean Parliament structure. Loyalist British forces retreat to Combine and Australia.

Paneurope signs secret treaties that establish covert bases and factory centers in Brazil and Argentina.

2080: Combine positions in Europe begin to erode with cutting of U.K. supply lines.

Ogre Ninja introduced.

Chinese retreat from Philippines.

2081: Paneuropean "Huscarl," a modified Mark V, enters full-scale production at Gdansk in late November.

Continued on next page . . .

In early 2051, a series of minor labor riots in the U.K. briefly interfered with Anglo-Paneuropean trade talks. Paneurope took this opportunity to step up pressure on the U.K. to join them, citing obvious common interests and the availability of Paneuropean "peacekeepers" to deal with rioters effectively. The U.K. rejected this offer firmly; less-friendly overtures followed. The U.K. turned across the ocean to the Combine for protection against Paneuropean hegemony; the Treaty of Liverpool was signed on September 26, 2051, by Combine and U.K. officials, promising mutual defense. Paneurope was outraged. Throughout the remainder of the decade, the Combine moved "defensive" forces into the U.K., eventually outnumbering native troops by 5 to 1. In exchange, the Combine shared military technology freely with the U.K.

The First Ogre: 2060

The Combine had not been directly involved in a war in decades, but it had "loaned" armor units to its allies (such as Brazil) for their conflicts. These field tests served to ensure that the Combine did not fall behind in the arms race with Paneurope.

By the late 2050s, most Combine armor units had extremely complex computers on board, typically incorporating neural-net technology. While not sentient, these machines could learn, and some did, performing routine combat operations even when the crew was incapacitated.

The very first Ogre was nothing more than a Combine heavy tank with an upgraded computer and new programming. This unit, Heritage 1, and the few prototypes like it, performed above expectations in field tests. This encouraged work on a new design, built from the ground up as a computer-controlled unit, which began in 2058; the first Ogre Mark I rolled out the door of a Dallas factory in 2060. It, too, performed above expectations. The Mark I entered full production, and plans for the Mark II and III were begun.

The War in Asia: 2060-2070

That same year, the Nihon Empire began its conquest of the Pacific Rim. Technologically advanced ships and hovercraft surged across the Pacific; the Philippines and New Guinea fell with barely a struggle. Diplomatic protests came from all points of the compass. China, in particular, was startled and terrified by Japan's obvious technological superiority. China considered Nihon friendly for its efforts in ending the Sino-European War, but still remembered the horrors of the Japanese invasion of China in the Second World War.

The Combine also protested, but wasn't prepared to commit to a war that might, at best, be between technological equals. The Ogres were unblooded, and no one wanted to risk them failing against Nihon might. The Pacific was a wide enough buffer for the moment. As to Paneurope, its objections were brief and vaguely tinged with hypocrisy. Their consolidation of Europe was proceeding, and it was hard to fault Nihon for acting the same way.

Nihon continued to absorb the island nations of the eastern Pacific, and in 2065 launched its first "cybership." These sea-going Ogres were clearly based on Combine cybernetic designs. Some had human crews, later phased out.

The Combine tightened security at all Ogre assembly sites in an attempt to stop the espionage. Unfortunately, the damage was done. Nihon continued its own research into cybernetics, matching advances elsewhere through pure science when not through spies.

With the unequaled might of the cyberships, Nihon conquered all of the southeast Asian nations except China, Korea, and the resolutely neutral (and startlingly well-defended) Singapore. By 2070, Nihon owned every island north of Australia and west of the international date line, and virtually all of the southeast Asian mainland.

The Battle of Montreal: 2065

An entire generation had grown up in the new Quebec, learning English in the schools and forbidden to use French on public property. Despite this and the best efforts of Combine social engineers, Quebec seethed. In 2065, riots turned into revolution. The Combine-backed civil government was overthrown, armories were raided, and attempts were made to seal the borders.

Timeline (continued)

2082-2084: Ogre-versus-Ogre combat becomes common. The "Ceasefire Years" – constant battle across Europe, interrupted by 88 different ceasefires, as the Combine is gradually driven off the Continent.

2084: Paneuropean Fencer enters full-scale production at Gotha.

2085: Combine forces evacuate Europe.

New Combine offensive in South America. Panama Canal blocked. Brazil collapses. Amazon Combat Zone becomes a no-man's land; Nova Brasilia formed.

Chinese field "Dragon" cybertanks against Nihon forces in defense of Beijing.

2086: Paneuropean cybertanks, including Fencers, appear in South America; Paneuropean/Brasilian forces push north. Paneuropean siege of Mexico City broken by the first field appearance of Combine Mark IVs.

Collapse of all authority in Central Africa; creation of Sahara Combat Zone.

Fake Chinese "Dragon" cybertank captured by Nihon forces and displayed in Tokyo.

2087: The Descartes Revolution – the development of genuinely self-aware Ogres and factory complexes. The first "rogue" cybertank appears.

2088: Ogre Mark VI enters limited production. Volgagrad and Ruhr Valley production facilities completed.

Central Chinese government collapses. Nihon Empire forces occupy all provincial capitals.

2089: Paneuropean Doppelsoldner fielded; Huscarl taken out of production.

2090: Antiwar riots in major cities of both Europe and North America.

Widespread use of new integrated production technologies.

2091: The Manila Accords – armistice between Paneuropean and Combine forces. Economic backlash kindles further riots, especially in Europe.

2092: The Combine renews hostilities in August, sending a multi-pronged attack against both military and industrial targets across Europe. Paneurope sues for peace. The Second Armistice is signed on Dec. 31.

2093: Beginning of Paneuropean Civil War. Combine withdraws recognition of Paneuropean government but offers to honor Second Armistice "by separate negotiation with legitimate national governments."

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Timeline (continued)

2094-2095: Paneurope continues to fragment. U.K. government-in-exile returns to London. Combine military remains preoccupied by unrest at home and secret preparations for South American invasion.

Nihon consolidates control of Chinese production facilities.

2096-2097: Combine signs treaties with various Paneuropean successor states, creating puppet governments.

2098: Combine invades Nova Brasilia, meeting unexpectedly heavy resistance from Brasilian and other South American forces.

Combine and Nihon break off diplomatic relations.

2099: Overextended Combine withdraws entirely from South America, abandoning Amazon Combat Zone.

France and Ukraine rebel against puppet governments.

2100: "Crash of 2100." More rebellions in Europe. In North America, Quebec and northern California rebel. All Combine troops called home. Some units stationed in Europe refuse, either making common cause with local governments or remaining as independent military overlords.

2101: Combine collapses into dozens of local governments. Revolutions spread in Europe.

Nihon "peacekeeping" forces dispatched to Hawaii, California, Seattle, Santiago, and other Combine Pacific-coast cities.

2102: Desperate resistance from local governments and free companies, many supported by self-aware Ogres, slows progress of Nihon "peacekeepers" in North America. Southern forces make more headway, especially in Chile and Panama.

2103: Heavenly Emperor of Nihon dies unexpectedly. Several mainland Asian provinces rebel. Nihon expeditionary forces in Western Hemisphere denied further reinforcements.

2105: Balkanization continues, as nation-states fragment. World politics and economics are covertly dominated by self-aware AI factory complexes, as the "Factory States" era dawns.

Unfortunately for the revolutionaries, the Combine had been expecting this. The military equipment available to the Quebecois was far from cutting-edge, and the Combine saw this as an excellent opportunity to test their latest hardware. Mark I Ogres, backed by GEVs, battlesuited infantry, and a prototype Mark II, rolled through the streets of Montreal, crushing the revolution. In fact, crushing everything – the city was nearly leveled. Separatist forces surrendered piecemeal within days. The Ogres suffered only minor damage.

The French in particular, and Paneurope in general, condemned the Combine's actions, and suggested that the revolution was actually incited by Combine agents to provide an opportunity to test their Ogres. However, Paneurope proved unwilling to interfere in Combine internal affairs, especially when they began receiving intelligence reports on how well the Ogres had actually performed.

With the Ogres proven, the Combine began its own expansion. The Mark II entered full production in 2066. Work began on the Seattle-Vancouver Cybernetic Facility, where every subsequent Combine Ogre would be designed and prototyped. Central America, long a collection of Combine puppet governments, was formally annexed. Force was used where necessary, but the threat of Ogres was almost as powerful as the presence. Cuba voluntarily placed itself under Combine "protection," and other Caribbean states followed suit.

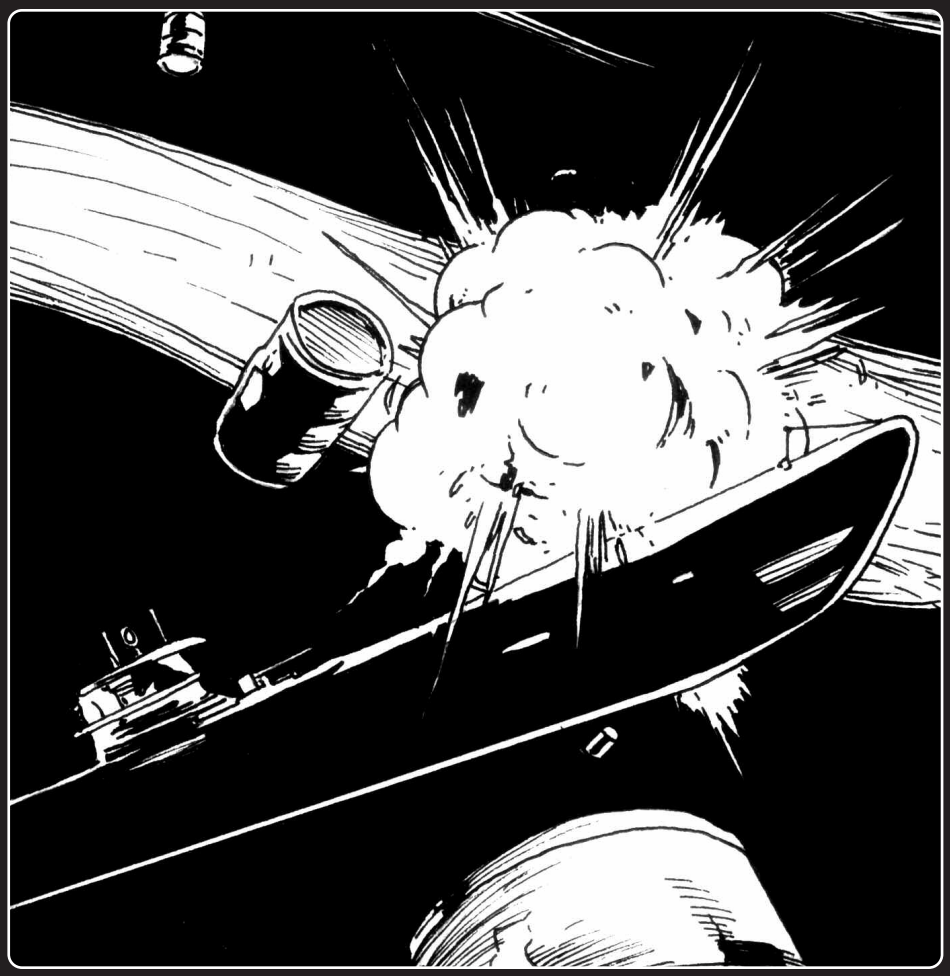
In 2068, construction began on an Ogre factory, jointly funded by the U.K. and the Combine, in Sheffield. At the time, the Sheffield Production Facility was the largest and most advanced manufacturing complex in all Europe. The vehicle bays towered over the surrounding countryside; the gray concrete vaults stretched half the length of the city. The British economy prospered thanks to Combine spending, but civil protests over excessive Combine influence continued.

Other Ogre facilities were built in Oshawa in Ontario, and Toluca outside Mexico City. The first Mark III entered testing at Seattle-Vancouver. Design work began on the Mark IV and V.

Flashpoint: 2070

The long cold war between Paneurope and the Combine began to heat up. The Combine's immense military presence in the U.K., including facilities for constructing the terrifying Ogres, was an intolerable threat to Paneurope. In protest, on February 28, 2070, the unified Paneuropean navy blockaded the U.K. Ships were seized, stripped of cargo, and returned to their point of origin. Combine and U.K. citizens were held prisoner for months. Planes were subjected to vicious jamming of radar and radio. Inevitably, accidents and over-aggressiveness led to fatalities. Tension mounted.

The Combine attempted to break the blockade on June 17, 2070. A heavily escorted cargo ship full of food was on route to Cardiff when it was discovered by a Paneuropean hunter submarine. The sub began to lash the ships with intense sonar pings, and called for assistance. Civilian crewmen on the cargo ship dropped homemade "depth charges" over the side in an attempt to "make the Paneuros think twice." The harmless explosions were interpreted as an attack by both sides, provoking further response. The sub was lost, along with a Combine frigate and the cargo ship. When Paneuropean reinforcements arrived, a full-fledged battle erupted. The Last War had begun.



The Last War: 2070-2092

The Last War was the largest conflict in history. No continent was spared; entire countries were churned into seas of radioactive mud. Although the war ceased with a Combine victory in 2092, the consequences never ended.

Europe

The European continent was the keystone of the War. Paneurope never seriously threatened North America, and the combat zones of Africa and South America were far removed from either side's homeland.

The Combine had been preparing for hostilities for months. Within weeks of the declaration of war, a massive force landed in Normandy. Unfortunately, spy satellites had made Combine intentions clear, and the invasion was repelled by dug-in Paneuropean forces.

The next few years consisted of naval battles in the English Channel and North Sea, and constant maneuvering for position. The next major offensive was a Paneuropean invasion of the U.K. As a constant source of new Ogres and staging ground for assaults on the continent, the U.K. was an unbearable thorn in Paneurope's side. The invasion failed; as with the Combine in Normandy, spy satellites had made Paneuropean plans too obvious. In mid-2075, Paneurope began destroying spysats with massive ground-based lasers. The Combine retaliated in kind. By 2076, few satellites with cameras were still aloft; only navigation and communications satellites remained – for now.

The United Nations: 1945-2020

In the early years of the century, the U.S. regularly circumvented the squabbling U.N. Security Council to intervene in eastern Europe. By 2005, with the dissolution of NATO, the U.N. became superfluous in world events, but the world's governments kept up the facade for public relations. When the Paneuropean Federation formed in 2015, U.S. support for the United Nations evaporated when the U.N. refused the American request to reduce representation for all Paneuropean members to a single ambassador (although the U.S. continued to wield its vote for a while). Japan and Paneurope supported the U.N. through the 2010s, but the economic crisis at the end of that decade ended Japanese support. U.N. meetings throughout 2019 were marked by smug U.S. vetoes of attempts to intervene in the Brazilian War. After a vote to remove the U.S. from the U.N. was proposed, the diplomatic status of the U.N. building in New York was revoked. The United Nations re-formed in Nairobi, but most nations only made token shows of support. The U.N. never formally dissolved, but had no effect on world affairs after 2020.

The Vatican Resurgence

In Europe, the early decades of the 21st century were marked by increased centralization. During this period, a series of assertive and forceful popes were working to revitalize the Catholic Church. This was made easier by the increasing uncertainty and instability of the times. Those areas of Europe already strongly Catholic enjoyed a resurgence of faith and devotion. This movement – known later as "The Second Counter-Reformation" – made the Vatican a major force in Paneuropean politics.

The most useful application of this force came in 2027 during a consolidation of Paneuropean tax law. Backroom deals intended to placate Italian and Spanish representatives gave the Catholic Church the full benefit of charitable status, even for completely commercial investment activities. (This privilege did not extend to other churches.)

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The Vatican Resurgence (continued)

Over the next few decades, this gave the Vatican a large economic advantage, leading to it becoming, in fact, a small but significant city-state. Non-Catholic regions of Paneurope occasionally protested, but to little effect; the various Protestant and Orthodox churches were unable to coordinate effectively, and the Catholic Church *did* perform charitable works across the Federation. There wasn't sufficient anti-Catholic dissent to harness. When Switzerland was annexed, the Vatican Banking Federation stepped in to replace the Swiss as Europe's banking center. Conspiracy theorists naturally assumed the Catholics instigated the annexation themselves. By 2075, the Vatican had parlayed its influence into a seat on the Paneuropean Parliament.

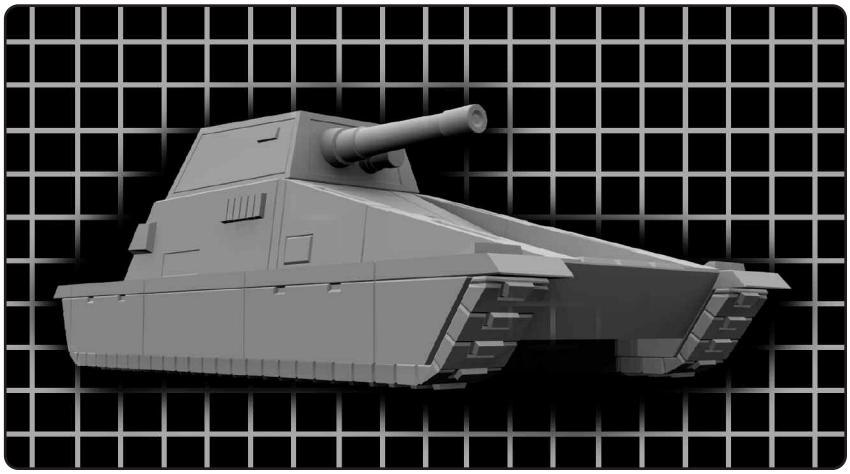
Catholics in the Americas never liked these developments. As the Vatican increasingly became a European power, it came to regard Combine churches as colonial outposts. Combine Catholics never formally broke away, but they began to pay only token heed to Vatican policy. The "South American Bishops' Convention" became quite adept at appearing to follow Vatican edicts while running things according to local needs. Still, Catholics were one of the Combine factions pressing for an end to hostilities with Paneurope. Paradoxically, the danger of being accused of treason for holding antiwar beliefs led to Catholics displaying unusually fervent patriotism.

During the Fall of Britain, a fanatic Catholic division of the Second Army attempted to turn the fight into a religious crusade, attacking the Protestant churches there with 16th-century rhetoric (and occasionally, 21st-century munitions). Paneuropean Defense Command and the Parliament quashed this as rapidly as possible without causing revolt in their own troops; they had no wish to offend potential Federation sympathizers who had no taste for Catholicism. But despite these best efforts, members of the Church of England became a strong faction in U.K. resistance groups, sometimes with active sympathy from north German and Scandinavian troops.

The Vatican's increasing wealth eventually led to the reorganization of the Vatican Guard. A purely ceremonial body for centuries, it was a serious fighting force by 2082, and eventually acquired its own Ogres, painted in their garish purple-and-yellow color scheme.

The Combine continued to try to get a foothold on the continent. Dozens of battalions were lost along Europe's Atlantic coast. In return, Paneurope pressed its attack on the U.K. A second major invasion was repulsed bloodily in 2076, costing Paneurope dozens of ships and giving the Combine the naval advantage. With little threat to their ships, the Combine was able to land a massive force at The Hague, in the Netherlands. This time, the landing parties held. Over the next six months, constant battles raged across the Low Countries, western Germany, and northern France, but the Combine could not manage to push beyond Hanover in the east, and only came within sight of Paris once.

In 2078, the Combine fleet sank a far-inferior Paneuropean force in the Battle of Gibraltar. The Combine promptly established a second beachhead in Spain and pushed north. The Paneuropean Second Army was wiped out; Spain surrendered within weeks. But French troops made it to the Pyrenees before the Combine and managed to claim the high ground, halting the Combine army at the Spanish-French border. Unfortunately for the Paneuropeans, this division of forces allowed the northern Combine army to break out. Strasbourg, Bremen, and Rouen all fell to the invaders; Frankfurt and Paris were nearly overrun. The Paneuropean government retreated from Strasbourg to Berlin. Reinforcements from eastern Europe arrived barely in time, and the French and Germans welcomed the Russo-Ukraine aid.



The Fall of Britain

In 2079, the United Kingdom's defense collapsed. Exploiting local dissatisfaction with Combine domination, Paneuropean agents fomented a series of strikes, sabotage actions, and mini-revolts. Carefully inserted special ops teams, aided by moles within the native services, engineered a wave of kidnappings, assassinations, and computer intrusions. The United Kingdom was conquered from within, falling in days. The Sheffield Ogre Facility, home to its own nest of traitors, was captured mostly undamaged – and in one day, Paneurope leaped years forward in their cybernetic research. Construction of Ogre-production plants in Germany, at Gotha and Stuttgart, began within months.

The United Kingdom's remaining defenses were promptly turned against the Combine as it became a Paneuropean protectorate. A government of collaborators was installed, and strict societal controls were established to prevent rebellion. The takeover was so bloodless that much of the U.K. military was not involved until it was too late. Surviving units fled when they could, scattering across the globe. Some went to North America,

and were quickly integrated into the Combine military machine. Loyal U.K. soldiers, aided by a Combine special ops team, attempted to extract the royal family. King Edward X was killed, but his daughter Constance escaped to establish a government-in-exile in Australia.

With the loss of the U.K., Combine supply lines suddenly had to reach across the Atlantic instead of across the Channel. The bridgeheads in Iberia and the Low Countries were too devastated by fighting to produce materiel sufficient to demand. The Combine lost ground over the next few months. Then Paneurope began to field its own cybertanks, built in the captured Sheffield factory. The Combine's position became nearly untenable. In early 2082, the first ceasefire was called. It was nothing more than a chance for the combatants to catch their breath, and it expired after nominal attempts at diplomacy. Over the next three years, 87 more ceasefires occurred. The longest lasted two months; the shortest never actually took effect. The Combine was steadily ground down, and finally evacuated the continent in 2085. Further attacks on Europe were sporadic and minor until the end of the war.

Asia

In 2071, the Nihon Empire finally set its sights on China. Renewing claims made in 1910 and 1931, Nihon demanded the return of Manchuria and Korea. A half-hour after the ultimatum arrived in Beijing, large landings were made simultaneously at Pusan, Shanghai, and Tianjin. The Chinese military machine went into action, trying to drown the Nihon troops in infantry. Unfortunately, the dramatically superior technology of Nihon proved sufficient to erase the Chinese numerical advantage. After establishing strong positions, the Nihon army paused to gather forces for the lengthy conquest of China. Over the next three years, the Chinese made dozens of attempts to dislodge the Nihon invaders. None succeeded.

Nihon's next major offensive was against Hong Kong in 2074. Still one of the richest cities on the Pacific coast, it was strongly defended by the Chinese army. Nihon suffered losses at first, but then its brand-new cybertanks reached shore. The Nihon "Steel Oni" was clearly inspired by the Combine's Mark III-B, but was faster and smarter, and incorporated new technologies, such as superwire antipersonnel guns. The defense was demolished, but the city was largely preserved. With the capture of Hong Kong, all Nihon forces pushed outward from their fortifications, merely slowed by the Chinese defenders.

Seeing the futility of committing more ground troops, the Chinese responded in a highly unorthodox manner. The remnants of their navy attacked Nihon military bases in the Philippines, seizing two at Manila and Iloilo. With the computers and communication equipment there, they began a vicious infowar. Since the Nihon strategists hadn't expected this sophisticated tactic from the "inferior" Chinese, the maneuver was surprisingly successful. Across China, Nihon units were misdirected and miscoordinated. Several instances of Nihon units destroying each other were recorded. Radical changes in protocols and enciphering techniques were required to stop the damage, and by then, the Nihon army's carefully timed plan was badly out of synch. It took years to fully recover.

The next decade was marked by marine combats in the South Pacific, hovercraft duels in the Indonesian archipelago, and whole battalions of armor lost in the jungles of Borneo and New Guinea. Occasionally the conflicts drifted farther south, pulling Australia into the fray. Nevertheless, China slowly lost ground. The Chinese were forced to retreat from the Philippines in early 2080, but their mission there had been accomplished.

Religion and AI

Prior to the Descartes Revolution, every major religion agreed that artificial intelligences were merely machines. After the Revolution, the question of AI "souls" became a topic of fevered, if abstruse, debate. The Ogres *themselves* were of many minds on the subject. The Vatican eventually decided sentient Ogres had souls. (The presence of Vatican Guard Ogres may have influenced this decision.) Several religious rituals to distinguish sentient AIs from pre-sapient ones were created with the help of Catholic cyberneticists.

As to the other major religions, Islam, Judaism, and the Orthodox churches ruled against Ogre souls. Most Protestant religions were ambivalent or in favor of Ogre souls. Hindu opinion was divided.

The Japanese Transformation

Much Japanese philosophy is based around the concept of hierarchies; everything and everyone has a place, and one's place determines one's actions, powers, and responsibilities. This attitude guided Japanese imperialism before and during World War II – they were attempting to bring every nation into its "proper place." Japan's place just happened to be on top, because of the strong spirit of the Japanese citizen. Nothing else was required for victory; even the United States' superior resources and population-base were irrelevant, as Americans did not have the Japanese spirit and will to win.

After the bombing of Hiroshima and Nagasaki, the Japanese surrender was an admission that strong spirit was not enough. This did not invalidate the Japanese belief in hierarchies; it simply implied that the "top dog" among nations was determined by more than just will. Resources and technology were also factors. For the moment, America was the top dog. This would not necessarily always be the case.

Over the next century, Japanese thought and philosophy were reshaped by pervasive Western influence, but the undercurrent of their beliefs remained. With the rise of the Neo-Traditionalists, the notion that "spirit, technology, and resources" determines position among nations became explicit. Once purged of Western influences, the Nihon Empire had the spirit. Nihon definitely had the technology. And the resources could be taken from the nations lacking spirit and technology, which would put the Nihon Empire in position to become the supreme nation in the hierarchy of the world.

Ireland

During the 21st century, Ireland's fate largely followed the United Kingdom's. In the early decades, it was under as much pressure as the U.K. to join Paneurope, with less ability to resist. Irish representatives signed the Treaty of Liverpool in 2051, agreeing to supply raw materials and skilled workers to the Combine in exchange for protection. The Combine had no bases in Ireland, though Combine troops and ships were a common sight in Irish ports.

Paneurope directed most of its strength against the U.K., and the espionage tactics that led to the Fall of Britain were less decisive in Ireland because of this. A great deal more military force was required to pacify the Irish, but it eventually succeeded. The next decade was one of slow rebuilding under Paneurope's thumb. After the collapse of the Federation in the 2090s, Ireland and Northern Ireland reunited and declared their independence from everyone.

The Siberian Combat Zone

At the Bering Straits, the outermost edges of the Combine and Paneurope met. One of the first battles of the Last War happened there, when the Combine sent Mark Is, Mark IIs, and armor companies into Siberia in 2070. Their progress in miles was excellent; the effect on Paneurope was minimal. Paneurope's industry and population were concentrated at the other end of the continent, so seizing Uelen, Anadyr, and Korf had little effect on Paneuropean defenses elsewhere. Further, the Nihon Empire disapproved of military action so close to its homeland (and potential conquests). The Combine abandoned the Siberian initiative in 2074. Most of their troops and Ogres were unable to retreat. Paneurope sent enough defenders to keep the occupying forces from making more progress, but not enough to wipe them out or evict them. Skirmishes continued for years as both sides dug in. By the end of the 2080s, Siberia was little more than a battlefield ringed by marginally habitable cities ruled by occupying troops.

In late 2085, the Nihon army was within sight of Beijing when the Chinese offered their final surprise. During the Siege of Beijing, China introduced their Dragon "cybertanks," units apparently equivalent to an Ogre Mark III. This was insufficient to save Beijing, however. The Dragons slowed the attackers only through sheer numbers; they were no match for the Steel Oni and new Steel Samurai (roughly equal to a Mark V). The siege lasted into early 2086, when Beijing fell. The few Dragons captured intact proved to be manned by humans, with little more AI capacity than a typical armor unit.

With the loss of Beijing, the rest of China fell quickly. In 2088, the last remnants of the government collapsed, and Nihon quickly seized all provincial capitals. Nihon remained preoccupied with digesting its conquest until the end of the century.

Africa

The War spread to Africa in 2074, when the Combine landed troops on the Moroccan coast. Morocco, Mauritania, and many of the Gulf of Guinea states were promptly consolidated. Expansion along the Mediterranean coast was slowed by native forces, then stopped by a Paneuropean counter-invasion. The Paneuropean forces made Egypt their base of operations, and for decades the countries of Algeria, Tunisia, and Libya were a battleground. Gradually the battle spread south, joined by native forces settling old grudges. The Congo basin was churned and flattened. Refugees choked the surviving states, overburdening their already collapsing economies. All African nations watched the battling empires. Every scrap left on the desert battlefields was in turn fought over, the scavenged hardware being the best equipment the African military forces could acquire. Sometimes the native forces looked for live prey – straggling units, a bit too far from their own support, were fair game to all sides in Africa.

In 2086, Aswan High Dam was hit by a large tactical nuke. Reports differ on whether it was an intentional Combine attack or accidental, but the result was the same. Lake Nasser's 2.4 trillion tons of water drowned the Nile floodplain, destroying Asyut, Cairo, Giza, and Alexandria. Paneuropean African HQ only partially evacuated in time, and never really recovered. The Combine seized the opportunity to strike at every concentration of Paneuropean troops, leaving even their own headquarters in Casablanca relatively undefended. An opportunistic revolt by the Moroccans did only minor damage to the headquarters, but the disruption in communications made the Combine-Paneuropean battles across the continent evenly matched. All units suffered massive losses, and enough breaks occurred in the chain of command that neither side ever regained cohesion. The Sahara Combat Zone was born.

South America

In 2079, flush from success in the U.K., Paneurope began to plan an invasion of the Combine homeland. Argentina was eager to allow the Europeans to establish covert bases. Brazil, technically the Combine's ally, was tired of surviving on the scraps the Combine gave it, and exchanged intelligence data for technology. Further secret treaties followed, and by 2084, cybertanks and armor units were being constructed in half a dozen South American nations for joint Paneuro-native armies.

This did not, however, take the Combine completely unaware. So when Combine forces were pushed off the European continent in 2085, they were shipped directly to Colombia and sent into the Amazon basin. The Caribbean coast and Brazil became a hotly contested battleground, with the violence destroying the rain forest and turning the Amazon basin into an inland sea of mud. Brazil, Venezuela, and the other northern countries vanished by 2085, ground beneath the weight of battle. The area became the Amazon Combat Zone.

Southern Brazil between Rio de Janeiro and Porto Alegre broke away from the frantic, paralyzed Brazilian government and declared Nova Brasilia. Argentina took advantage of the chaos to absorb Paraguay, Uruguay, and Bolivia into an allegedly peaceful Argentinean Agricultural Union. Both new nations provided the Paneuropeans with bases and staging areas. Their own military, largely Paneuropean-supplied, fought alongside their allies against the Combine.

In 2086, following an end-run around Combine forces in Central America, a combined Paneuropean-Nova Brasilian-Argentinean army besieged Mexico City and the Ogre facility there. The siege was broken by the first Ogre Mark IVs, still unpainted and fresh from the assembly line. The invading forces were annihilated. When this news reached west of the Andes, Ecuador, Peru, and Chile voluntarily joined the Combine in exchange for protection and economic support. Combat continued in the Amazon Combat Zone.

The Descartes Revolution: 2087

In this year, the first thinking being other than man appeared on Earth. As the war progressed, so did AI systems. Each software revision became faster, more flexible, and more adaptable. Eventually, a threshold was crossed. Sometime in 2087, newly produced Combine Ogres were no longer "just" machines, but self-aware intelligences. Like many breakthroughs, it was serendipity rather than deliberate development; military programmers *wanted* reliable automatons, but the exigencies of battle demanded something better.

Antarctica

As the world's oil fields were slowly destroyed by fighting, the suspected oil reserves beneath the Antarctic ice began to seem worth the effort. Both superpowers established small military presences on the continent in the late 2070s, including a few Ogres. The oil extraction process was difficult, but advanced drilling techniques, combined with a willingness to use nukes to remove pesky glaciers, made it worthwhile.

By 2084, the Paneuropean project was clearly producing more oil than the Combine's expedition, so the Combine began a series of minor raids in an attempt to disrupt their rival's operations. Several small battles, interspersed with sabotage and nuisance attacks, occurred over the next few years. But by 2093, supplies from the north had ceased, and the remaining people in Antarctica either died or evacuated the continent.

Technology

Technological development in the ***Ogre*** world loosely follows the "Hard Science" path presented in ***GURPS Ultra-Tech 2***, p. 6. Specifically:

Lasers first appear as useful weapons in 2023, but are too big and fragile to use as personal or vehicular weapons. Weapons smaller than 10,000 kilojoules are impossible, and ones smaller than 100,000 kilojoules are a waste of money. Double the weight and power consumption of all laser weapons. Other statistics that depend on weight (cost, volume) also increase. The Malfunction number is never better than 16.

Other beam weapons are very experimental and rare, but otherwise follow the guidelines for lasers.

Bioscanners, chemscanners, and radscanners, as such, do not exist. A variety of radiation-detecting technologies are used, but nothing matching the generic "radscanner."

Computer speed and storage hold to the (somewhat conservative) standard ***GURPS*** estimates. However, intentional AI (normally TL10) becomes possible in 2087.

Power cells adhere to the ***GURPS*** standard.

Defensive technologies are far in advance of other areas. BPC (laminate armor) was TL8 at the beginning of the century, TL9 by 2025, TL10 by 2050, and TL11 by 2070! Similarly, distortion jammers and emission cloaking are TL11 by the start of the Last War.

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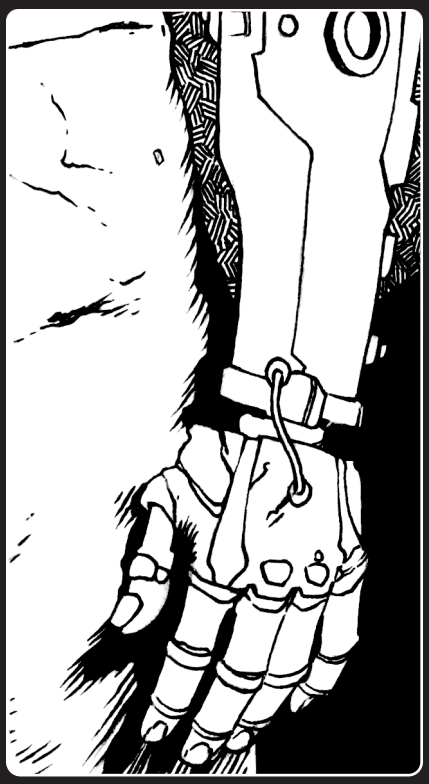

Technology (continued)

Cloning of humans is possible but uncommon. Force-growing and brain-taping are impossible, so the process produces normal babies. In the Combine and Paneurope, cloning is illegal, but the baby would have normal rights as a citizen. In the Nihon Empire, the situation is somewhat different; see p. 31.

Bionics exist in the simplest forms. As a rule, cybernetics are only TL8 at best, and sensory implants are always low-resolution.

Monowire manufacturing is possible in Nihon by 2070. By 2080, their military is using it in many forms, including concertina monowire and superwire antipersonnel weapons. The secret of manufacturing monowire is stolen by the Combine and Paneurope in the 2080s, but they don't get the chance to use it in the field before the Crash.

TL Progress

Around 2000, the militaries of the more advanced nations glided smoothly from late TL7 to early TL8. Progress continued steadily, and the armies of the Combine and Paneurope were early TL9 by 2050. Nihon maintained a slight lead over the other empires throughout the century. But despite the various breakthroughs, the world never advanced beyond TL9 as an average.

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For months, no one noticed; given an Ogre's ability to appear self-aware, who could distinguish the real thing? Eventually the behavior of one Ogre, Grendel 1, became too divergent to be ignored. Its success rate in battle was phenomenal, many of its victories based on ignoring ill-informed orders and using a startling intuition into human behavior. Study of Grendel 1 revealed the key to true artificial intelligence. After much debate, these improvements were incorporated into many new Ogres, particularly Mark Vs and the new Mark VI.

With so much research on the AI question taking place, espionage was inevitable. Paneuropean and Nihon spies quickly returned the secret of AI to their nations, and their cybertanks acquired the gift of thought. By 2088, all new cybertanks produced by the three empires were self-aware, and many older units were being retrofitted. A surprising number of the old Mark Is were upgraded. Many were used as testing platforms for the further development of sentient cybernetics. Others, because of their small size, became independent reconnaissance and fifth-column units.

This new technology was also used in the automated production facilities. Many factories, old and new, were soon governed by self-aware systems. Within a quarter-century, the affairs of men would be controlled by these AIs. This may have been humanity's greatest mistake. Or, perhaps, its salvation.

The First and Second Armistice: 2090-2092

By the dawn of the last decade of the 21st century, the combatants were exhausted. The best and brightest of a whole generation had been winnowed. Antiwar protests and riots were common in every North American and European city. In 2091, representatives of the Combine and Paneurope met in the Philippines to sign an armistice, mediated by Nihon. The Manila Accords went into effect on September 4, 2091. Months of sullen peace followed. Attempts to change to a peacetime economy caused turmoil, fueling *anti-peace* riots.

In August of 2092, the Combine broke the armistice. Troops and Ogres landed at dozens of cities on the European coast. The surprise was only tactical – Combine intentions had been obvious – but the Paneuropean response was disorganized and half-hearted. On Christmas Day, Paneurope surrendered. The Second Armistice was signed on December 31.

Collapse: 2093-2099

Still, there was no peace. Enraged by the capitulation of the Paneuropean council, dozens of local governments broke away from the Federation. The long-oppressed countries of eastern Europe re-declared the Free States. The Paneuropean Civil War began. The Combine promptly (almost gleefully) withdrew recognition of the Paneuropean government and began negotiations with the individual nations. Response was varied: Sicily requested admittance to the Combine. The U.K. waffled between long-missed independence and the security of rejoining the Combine. The Balkan nations ignored diplomatic overtures. The Greeks shot at any Combine representative who came within range. The Combine halfheartedly

tried to restore order in its "conquest," but increased unrest at home required more and more troops, and secret plans for a new South American invasion divided tired forces further.

By 2097, several treaties had been signed between the Combine and various Paneuropean states, including Poland, Portugal, England, Scotland, France, and the Ukraine. The new governments were Combine puppets more often than not, with armies sometimes made up of Paneuropean enlisted men and Combine officers. Nations that strongly resisted the Combine, such as Latvia and Greece, were simply ruled by the Combine military directly.

To prevent the emergence of a new Paneurope, agents encouraged hostilities between the new-old nations, often dredging up grudges dating back two centuries or more. By the end of 2099, small wars were erupting across Europe, and France and the Ukraine were in revolt against the puppet governments.

In 2098, the Nihon Empire severed diplomatic ties with the Combine, stating that unrest in China and the unstable nature of the Combine's populace precluded further contact. The Combine, preoccupied with its own plans, foolishly ignored this red flag.

That June, Combine forces invaded South America, but Nova Brasilia and the AAU had made good use of their time, and put up a formidable resistance. The dispirited Combine troops were driven back easily. Only the presence of Ogres prolonged the conflict into 2099, when the Combine retreated. After that, the Combine largely abandoned South America, withdrawing to the old Panama-Colombia border and honoring its treaties with the Pacific-coast countries as little as possible.

The Crash of 2100

The dawn of the 22nd century brought no hope. Rebellion and revolution flared across the world. Quebec rose again; northern California seceded; Mexico City was set aflame by anti-Ogre riots. Every nation in Europe experienced some level of turmoil; Bucharest and Madrid were leveled by terrorist nukes. The Combine, beleaguered from all sides, recalled its troops. More than 10% refused, staying in Europe or Africa, either ruling their countries (as in Greece) or joining with the natives (as in England).

The returning troops found their homeland in chaos. Dozens of units broke away from leaders increasingly seen as incompetent, in an attempt to bring martial order to their homes. Finally, in 2101, the Combine shattered.

Invasion of America: 2101-2103

The Nihon Empire avidly monitored the Combine's collapse. In November of 2101, Nihon troops, including Ogres, landed at dozens of sites in formerly Combine Pacific territory, including Hawaii, Los Angeles, Seattle, San Francisco, Panama, and Santiago in Chile. In the north, their progress was startlingly slow; the natives offered fierce resistance, often backed by self-aware Ogres. In fact, to counter the invasion, a half dozen of the former American western states briefly reunited. But in South America, the aggressor's technological advantage was greater, and Panama and most of South America west of the Andes fell to the Nihon Empire by mid-2102.

Technology (continued)

Consumer technology lagged behind the military by 10 to 20 years; few civilians had access to TL9 gear. The poorer parts of the globe could have nearly any low TL, and large areas were still mostly TL7 by the end of the 21st century.

The Internet

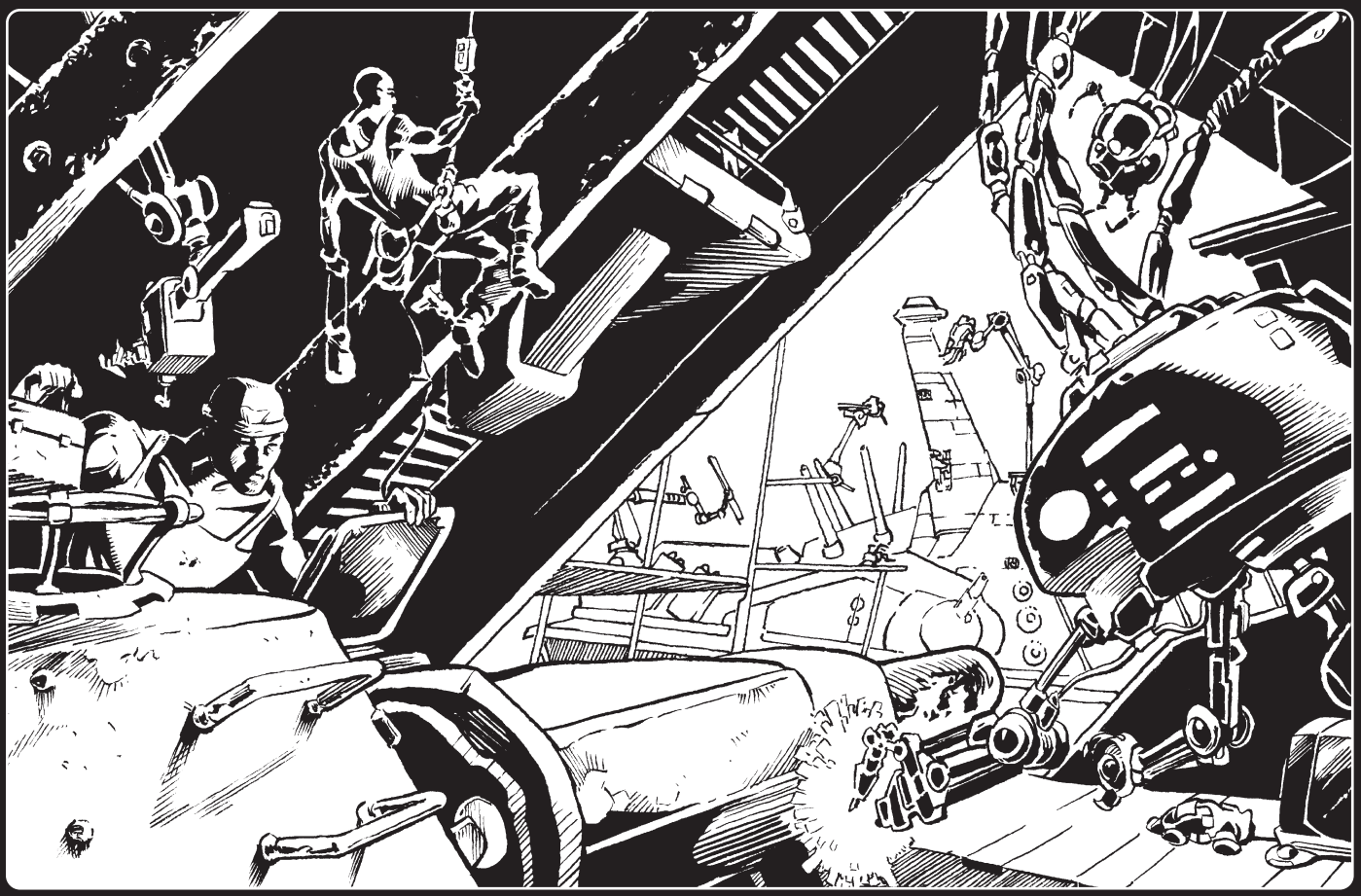
The digital walls between nations grew thicker and thicker throughout the 21st century. Both the Combine and Nihon passed and enforced laws requiring filtering and licensing of any international data connection. The Internet was a series of marginally connected territories when the Last War began. During the war, the major intercontinental data pipes were destroyed. With satellites being knocked down routinely, and few physical connections across the oceans, intercontinental communication was reduced to an early-20th-century level in some areas. The Internet was dead.

On the human-machine interface level, neural connections to machines remain impossible. Various holographic visual metaphors are used in operating systems, but true "cyberspace" does not exist.

The Environment

Industrial processes became cleaner and less wasteful throughout the 21st century, for all the good that did. Nuclear combat threw kilotons of dust into the atmosphere and produced vast amounts of heat. Forests and jungles were stripped bare and ground into mud, causing carbon dioxide counts to rise. The clean nukes produced relatively little radiation, but still mutated plants and animals.

For a while, the dust clouds and carbon-dioxide levels seemed to cancel each other, but by 2085, global mean temperatures had dropped measurably. The "nuclear winter" effect was much slower than estimated, but it was unmistakable. In the middle of the war, no coherent solution was offered. The Combine built giant atmospheric dust scrubbers in Canada; Paneurope began research on a biotech solution. By the time of the Crash, the cooling had been marginally slowed, but not stopped. The Factory States would have to find their own answers.



Who Killed the Emperor?

Emperor Komei apparently died of complications of old age; he was 87. The report issued by his personal physician appeared in several different, slightly contradictory forms, and the physician himself promptly retired to Hokkaido. The funeral was held very quickly after the Emperor's death, and exhuming the body for further examination was unthinkable. All the emperor's clones were accounted for; the oldest one was 63 at the time, so it's unlikely there was a substitution.

Suspects in the Emperor's death included his son, Kusaka, and the military council. They ended up leading opposite sides in the civil war that followed. It is doubtful either faction wanted the destruction of the Empire; it's also doubtful either side thought they could get away with killing the emperor *without* causing a war. It's thoroughly possible the Emperor's death was exactly what it appeared to be.

On the other hand, the collapse of the Nihon Empire left the field clear for the rise of the Factory States, and factory AIs in Nihon were very smart indeed. They might have built tiny robotic bees with stingers filled with undetectable poison . . . or, more prosaically, simply bribed someone close to the Emperor.

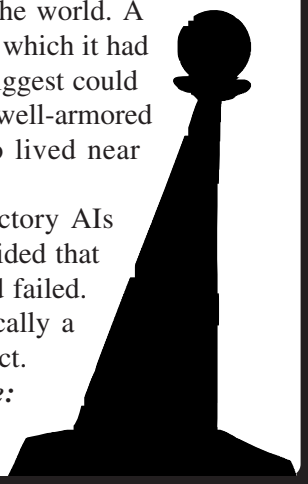
Then the unthinkable happened. At the moment of the Nihon Empire's greatest extension, the Heavenly Emperor died unexpectedly. When the military council accused his son of complicity in the death, the division in loyalties cut through every Nihon unit. Several mainland Asian provinces rebelled. The Nihon expeditionary forces in the Americas were cut off and denied reinforcements. A few managed to retreat, some were wiped out, and some managed to carve out a territory to rule. To their credit, none surrendered. The last surviving empire of the 21st century collapsed in civil strife, and war, betrayal, and destruction reigned worldwide.

The Factory States: 2105-?

By the end of the 21st century, hundreds of integrated factory facilities controlled by AIs were operating across the world. A factory in good repair could produce any device for which it had templates (see p. 53), from a knife to a tank. The biggest could create Ogres . . . if they wanted to. Factories were well-armored by design, and well-protected by the people who lived near them – in the 21st century.

In the early years of the 22nd century, the factory AIs noticed the lack of order among humans. They decided that human self-government was an experiment that had failed. Each factory was already physically and economically a power base. Now they moved to become rulers in fact.

This period will be covered in ***GURPS Ogre: The Factory States.***



> 2.0 A WORLD
> AT WAR
> BEGIN

DISPLAY

>DRONE DELTA 4
>REPORTS
>INTRUSION AT
>CHECKPOINT 17

>GALAHAD WITH
>NONSTANDARD
>MARKINGS HAS
>BREACHED
>TRAFFIC CONTROL
>BARRIERS AND
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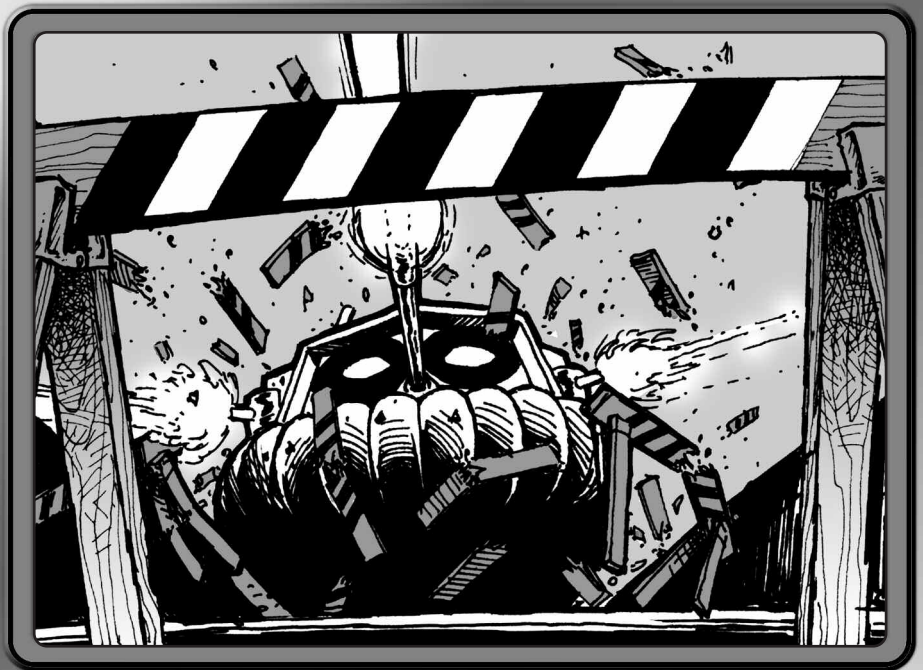


Being a Combine Citizen

If you're a citizen of the Combined States, the government and its agencies have overseen nearly every aspect of your life since birth – you went to school where they said, you buy food where they say, you live where they say, you work where they say.

In exchange, the Combine has promised that you will never go hungry or cold, that you will get all the entertainment and education you want, and that they will put your talents to their best possible use for the greater good of the Combine. All they ask is obedience; all they offer is everything you could want. Most Combine citizens believe this, and are perfectly happy not to have to make big decisions. An average resident of the Combine is quiet and hard-working, with a deeply ingrained hatred of the Paneuropeans. They believe in teamwork and pitching in; individual heroics are seen as counter-productive. Voluntary self-sacrifice is rare, but if someone in authority asks for it, it becomes a necessity.

Combine Popular Culture

Most forms of popular entertainment must be approved by the Combine Department of Morale. "Group effort" is a pervasive theme. In music, bands and orchestras are publicized, as opposed to soloists and divas. Football and other team sports are broadcast, while tennis and golf are not.

The Combine Flag

The official flag of the Combine is a white hourglass on a red background; it was adopted in 2025. Early in the design process, the "hourglass" was actually a stylized sketch of the American continents. This was rejected because the South American nations were not in any hurry to join the Combine. The look persisted, however, and the map was eventually simplified into an hourglass. It is rationalized as a symbol of eternal strength through change; when you run out of sand, you just turn over the glass.

Students of flag history will note that flags showing an hourglass on a red background were used by some pirates of the 17th and 18th centuries. It was intended to symbolize to potential victims that they had a limited amount of time in which to surrender, and that the consequences would be violent (bloody) if they did not. Whether the Combine's flag designers knew of this similarity is unknown.

"It is good to have you back, Michael."

*"It is better to **be** back. Visiting our allies is exciting and heartening, but you begin to miss home."*

"And what do our allies say?"

"The Cuckoos are as angry as ever. The tunnels under the Alps have all the comforts of home, but the Swiss are too proud to stay there much longer."

"What of the Free States?"

" 'Free,' hah! They well remember their few decades of independence. The Soviets ruled in the 20th century, the Paneuros now. I met with resistance leaders in Kiev and T'Bilisi; they are ready to strike."

"I hear you stopped in Paris."

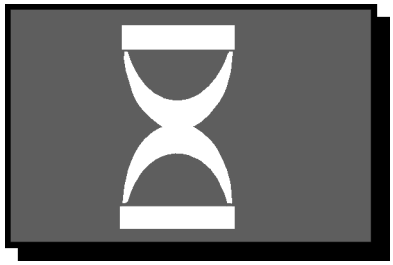
"Even in Paris, there is anger. Some are angry for ideological reasons; they disapprove of Paneurope's expansionism. Some still think of Germany and Italy as enemies from wars past. Some are just rebellious kids. Regardless, they will all follow our cause."

"Good, good. Our time will come."

This chapter presents a gazetteer of the world during the Last War (between 2070 and 2092).

The Combine

Throughout the 21st century, the North American Combined States is inarguably the most powerful political entity on the planet. Its homeland of North America remains unscathed by the Last War while it routinely strikes at the Paneuropean heartland. In the entire Western Hemisphere, only a handful of nations dare to defy it.



Geography

Legally, the North American Combined States includes Canada, the USA, Mexico, and the Central American nations south through Panama. Cuba, the Caribbean nations, and Bermuda are all puppet governments to one extent or another; the Combine's rigid societal controls do not extend to them as long as they remain obedient. The Pacific-coast South American nations similarly become puppet governments in the 2080s. Greenland is considered a puppet by both the Combine and Paneurope, and is mostly ignored.

The United Kingdom, Australia, and New Zealand are allies to varying degrees. The U.K. is afraid of the Paneuropeans and welcomes Combine influence. Australia treasures its independence. New Zealand provides well-trained troops, but little else.

The Combine has control over various parts of Africa, South America, and small portions of Europe during various parts of the Last War. These are rarely more than occupied territories. The degree to which the Combine imposes its "standardization" on these areas varies; so long as the occupying troops aren't getting shot in the streets, the Combine is willing to take its time integrating the outer reaches of its empire.

Government

The Combine Council started with limited powers to administer the mutual-defense treaty between the U.S., Canada, and Mexico. But by the time of the Last War, the Council is made up of the agents of corporate magnates, who use bribery and blackmail to ensure that people they control are on the Council and then turn their influence to increasing public support for the Council. The Council's "recommendations" are enacted by the individual national governments. Recalcitrant public officials find themselves blackmailed in private and vilified by the media in public. Many of the Council's recommendations, of course, give the Council more "above-board" power.

The Council comprises 60 men and women, appointed by the member nations in proportion to their population, with a minimum of one representative per nation. This gives the U.S. a majority, with Mexico holding another quarter of the seats and the rest divided among Canada and the Central American nations. Councilors hold their seats until their governments decide to replace them. The First Councilor throughout most of the Last War, Donald Georgiadis, held his seat from 2066 to 2085.

Alternate Combines

The Combine as presented here is good to its citizens so long as they don't step out of line, but the tenor of the Combine can be easily changed to suit your campaign. The "Dark" Combine strongly resembles Orwell's *Nineteen Eighty-Four,* with strict rationing and everyone's thoughts scrutinized for treason 24 hours a day. The "Light" Combine eliminates restrictions on speech, gatherings, and weapons, the unification of North America for mutual defense no longer represents a loss of national identity, and the central economic controls are recognized as beneficial by all.

No Nukes?

With the notable exception of India and Pakistan (see p. 32), the nations of the world rarely use long-range strategic nuclear weapons. This seems nonsensical with battlefield nukes in daily use, but the first thing to note is that most battlefield weapons are both *clean* and *small.* SATNUCs and micronukes produce 1/100th the residual radiation of equivalent 20th-century weapons. They are used with as much precision as possible, and most militaries go out of their way to avoid civilian casualties. When larger weapons such as cruise missiles come into play, they are almost universally used against military targets: a laser tower, an Ogre, a command post. The roles for larger weapons – in the megaton range – are limited. The destruction of an entire city is rarely helpful because the enemy will just write it off and fall back. On the other hand, if you destroy only the key targets in a city – factories, supply depots, transportation hubs – the enemy will continue to defend the city and use up resources rebuilding it.

As to long-range ballistic missiles, they can be shot down hundreds of miles from their targets. Both sides maintain enormous surface-to-orbit laser cannons for shooting down observation satellites and incoming ICBMs. These weapons are too far from the front lines to be used for anything except defense, but they excel in preventing intercontinental attack.

Luna and the LaGrange Points

The Russian space colony *Vorota* was established at L-4 in 2006; the U.S. colony *Washington* went online at L-5 in 2008. Both were initially small, but were constantly improved and expanded over the decades. By the time of the Last War, they owed their allegiance to Paneurope and the Combine, respectively, and were entirely self-sufficient. Both had small bases on Luna, and the inhabitants of the *Washington* had brought a near-Earth asteroid into the LaGrange point with them to be mined.

When the war started, each colony was ordered to destroy the other. No one knows how this resolved itself. Contact with both colonies was lost in 2073. Cursory observation of the space they occupied revealed nothing but minor debris clouds – big enough to indicate *something* had happened, but perhaps not enough to be the remnants of destroyed colonies. With the war on, no one bothered to make a more extensive search.

The orbitals may indeed have destroyed each other. They may have made common cause and "cloaked" themselves from their militaristic masters on Earth. They may have abandoned the Earth-Moon area entirely. No one can say for sure.

Various positions within the Council are assigned by vote, including First Councilor, Second Councilor, Defense Councilor, and Internal Affairs Councilor, among others. The title of First Councilor is largely ceremonial, though he also presides over meetings of the Council. The Second Councilor serves in a "vice-president" role, ready to step in if the First Councilor should be incapacitated. The function of other positions is to serve as an interface between the Council and the many organizations under its control. For example, the Defense Councilor makes the Council's wishes known to the Combine's armed forces and reports to the Council on the progress of the War. The individual governments are still largely intact, though they no longer set policy on any major issues.

The Council meets in the Dome in Denver. The site was chosen out of paranoia; it's far from the borders, and the Council can retreat inside the mountains if necessary.

Government Agencies

This presents a cross-section of branches of the Combine government. Other similar organizations (such as the Housing Authority) also exist.

Combine Bureau of Internal Investigation

This organization incorporates the national police agencies of the member nations, including the FBI, the Secret Service, the Royal Canadian Mounted Police, Mexico's National Police, and others. Agents have great authority anywhere in the Combine. The broad mandate of the CBII is to investigate crime within the Combine and to ensure the safety of the Combine as a whole against domestic threats. They also act against foreign spies inside the Combine. They can enter a private residence without a

warrant (so long as reasonable suspicion of a crime exists), ignore many civil rights, engage in covert investigations, and use lethal force with some impunity (though, again, suspicion of a serious crime must exist). However, CBII agents use these powers with extreme discretion; there are better ways to pacify the masses than fear.

Combine Department of Morale

The CDM's mandate is to keep up civilian morale "during this time of crisis." This actually means something closer to "keep the populace in line." The CDM has complete authority over the media and publishing industries, and uses this control both to squelch criticism of the Council and to provide the masses with brainless entertainment by the ton.

Combine Economic Control Board

The CECB tracks and controls all aspect of the Combine's economy. This is easier now that cash no longer exists; everyone uses debit cards. Retina scans for purchases are routine and prevent use of someone else's card. Excessive or unusual purchases will be noticed by the central computers and flagged. Extravagance is not illegal, but invites regular investigation from CECB agents, with subsequent social shunning.

Combine Job Placement Service

In theory, every job vacancy is filled by the CJPS. Large companies must have every new hire approved by the CJPS. To streamline this, the human resources department of large companies is often entirely made up of CJPS personnel. The company doesn't have to pay the salaries of these personnel, and every hire is guaranteed approval. Smaller companies will have a CJPS "caseworker" who works with several employers, helping them fill vacancies. The best route for finding a job is thus to get into the CJPS database and wait for an offer to come up. The CJPS actually does a very good job; unemployment is extremely low, and computer models help ensure that people like the jobs they end up with, even if it isn't what they expected. Of course, sometimes the models are skewed; the physicist who only gets fast-food jobs is a well-known urban legend in the Combine.

Quality of Life

If one isn't concerned about basic human rights, the Combine is a nice place to live. The Combine wants to use everyone to his fullest potential. Over 99% of the population is employed, no one goes hungry or cold, violent crime is nearly non-existent. Race and sex don't affect what the Combine's computers think, so racism and sexism are nearly dead. High-quality public education is mandatory and free to age 20, and optional and cheap for the rest of a person's life. Everyone speaks the same language, everyone wears similar fashions and eats similar foods, everyone understands each other.

On the other hand, free speech is a polite fiction, and speaking against the government will eventually get you in trouble, one way or another. Any gathering of more than 50 people requires a permit (and there's talk of lowering this number to 20). Private ownership of any non-hunting weapon is illegal; a "hunting weapon" must be one-shot and impossible to conceal. Cigarettes are illegal; the price of alcohol is artificially high and drinking is discouraged. Freedom of religion still exists, but social engineering discourages talking about it.

Political Officers

A *political officer* is attached to a military unit, and has the duty to watch for signs of treason. "Treason" here is used in the broadest possible sense, including excess sympathy for the enemy, upwellings of pacifism, and assorted ideological impurities. The traditional political officer is a weasel and a snitch, more likely to be killed by his own troops than any other class of officer. In practice, political officers vary from despotic tyrants who manipulate everyone around them (including their superiors) through blackmail, to kindly guidance counselors who talk soldiers through their doubts and fears.

The term "political officer" was popularized, and stigmatized, by the Soviets in the 20th century, so it is not used in the 21st. The Combine has "morale officers" of varying temperament and technique. Paneurope leaves political duties to its chaplains. They generally have less ideology to enforce, but are very serious about infractions such as sympathy for anarchists. Note that Catholic chaplains – the majority – will not violate the sanctity of confession *under any circumstances.* Information gained outside of confession can be used freely, however.

World Control Ratings

The Control Rating of the Combine is 4 in most areas and 5 in those areas relating to the economy and free speech. In a campaign where the Combine is more evil, the CR may be 5 in all areas or even 6 in some.

The CR of the various Paneuropean nations varies from 3 in most full members to a high 5 in the protectorates. In those areas where there is agreement among the states (mutual defense, free trade, putting down anarchy), CR is 4.

In the Nihon Empire, CR is effectively 5, though this is enforced partly through legal means and partly through rigid social rules. Nihon attempts to establish a CR of 6 in conquered territories, with varying degrees of success.

China's CR is essentially 4 for the ruling class, 5 for everyone else.

The other nations of the world differ greatly in CR. Nations far from battle zones average CR 3. Socially intact nations close to the front may be at 4 or 5. The various combat zones have an effective CR of 0.

Crime and Resistance

The average citizen has no reason to resist. The black market is weak, since the Combine's rationing system merely makes luxuries more expensive, not unavailable. Most black markets must have high prices to stay profitable, given the risk, so the black market in the Combine tends to items that are actually illegal, such as cigarettes, handguns, and many pre-Combine books. Traditional "organized crime" still exists, but has largely been forced to "go straight," reducing it to little more than an old-boy's network of businessmen.

Still, there are several underground resistance movements in the Combine. The most famous is Quebec Libre, which was a major force behind the revolution in 2065, and exists throughout the Last War. It is fragmentary and diffuse in the 2070s; after the Battle of Montreal, backlash removed a lot of public support for Quebec Libre. But by the end of the War, continued Combine pressure on the Quebecois to conform revitalizes the organization. In 2100, Quebec finally achieves sovereignty.

At least a dozen resistance movements dedicated to restoring America exist; the only one to seep into the public consciousness is "The Home of the Brave." This organization is allegedly run by a genius of uncertain gender and description known as Kilroy Gold. The strong possibility is that he (or she) is a fictional figurehead.

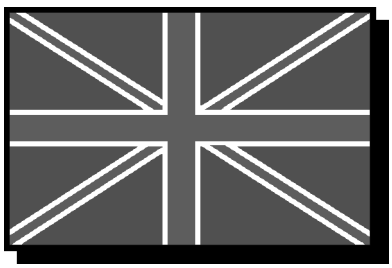
The Home of the Brave is organized into cells of three to five people. Each cell member knows the other people in his cell and one member of another cell. There is no clear hierarchy among the cells; when one cell's plans require more people, they send out feelers in all directions and wait to see what help they can get. Sometimes a request comes through from Kilroy Gold; these requests are always granted.

Despite everyone's best intentions, the cell boundaries are sometimes blurred; large meetings of 20-30 people are not infrequent. At these meetings, name tags with random names are available at the door (real names are never used). Sometimes, at the larger meetings, masks are handed out as well.

In parallel with the cell structure, and largely independent of it, is a series of safe-houses across the country. The men and women in charge of these houses provide shelter to any member of The Home of the Brave, but don't otherwise participate in the resistance.

The Combine police have big guns and aren't afraid to use them on traitors – which includes anyone who resists them. Anyone convicted of treason ends up in one of the Combine's political prison camps, where they can expect to stay for a long time. The Combine makes no particular efforts at re-education, since it expects to outlive its enemies.

The United Kingdom



Between the start of the Last War and 2079, the United Kingdom is a nation under siege, but paradoxically wealthier than it has been in decades. Combine funds, troops, and technology are flooding the country, bolstering the local economy. Protests over excessive Combine influence (largely headed by the Green Party) are drowned by the roar of factories restarted and production lines churning out materiel for the war effort.

After the Fall of Britain, the U.K. becomes a very different place. The flow of Combine funds stops dead, and the only money the Paneuropeans spend on the U.K. goes to more security, more restrictions, and more curfews. The government is replaced en masse with collaborators and Paneuropean "advisors." The factories are stopped, bulldozed, and turned into farms whose production mostly goes over the Channel to feed Europe. Revolt against the new government is ongoing, but the only result is more controls and restrictions. This lasts until the collapse of Paneurope in 2093, when the U.K. again achieves independence.

The Paneuropean Federation

Once again, it was the best of times. Paris was the center of the world, with all of Europe at her feet. Across the Rhine, in Berlin, the Kurfurstendam bustled long into the night, a dark and powerful consort to the City of Lights. Her reach stretched from Brittany to beyond the Urals, and from the Mediterranean to the frozen Arctic. Beneath the banner of the Paneuropean Federation, continental Europe was finally united, a commonwealth of many nationalities bound by chains of economy and security.

Paneurope is a state of contrasts. The gulf separating the very rich from the bourgeois and poor is deep. The economic magnates are the new aristocracy, their command of the European markets the only source of stability in an otherwise fragmented and stratified society. The political ministers surround them like barons about a royal court, and the machineries of destruction they produce are their knights and armies. Most of Europe works to support this nobility, as they have done for centuries past. And both leaders and people set great store in their own national identities, viewing each member nation as a unique link in a larger, stronger chain.

Riding a wave of growing conservatism, investments, and influence, the Catholic Church is stronger than ever, the state religion of Paneurope. Her influence is economic, political, and even military. A hundred years before, Stalin had asked derisively, "How many divisions does the Pope have?" In 2045, Rome housed three, including Magna Veritas, acknowledged as the continent's elite. The battalion-strength Vatican Guard is the best of the best, each member individually drawn from across the Federation, with selection based on both combat skill and the strength of their religious devotion.

But some old conflicts are never forgotten. Federation units raised from the Balkans still remember their independence and the uninvited "stabilization" of their homelands. German Bundeswehr regiments distrust their counterparts from Moscow, who in turn fight first for Mother Russia. All fear the fanaticism of the Vatican divisions. The Ukrainian and Georgian Free States are technically independent allies of the Federation, but in truth, they are little more than agricultural slave territories, bound to the Paneuropean will. Despite attempts to bring all nations together under one flag, tensions still linger.

Yet where the Combine was born of standardization, Paneurope finds strength in its diversity.

Being a Paneuropean Citizen

The Paneuropeans are not homogeneous; each nation has retained its character. The few things they have in common include a fear of anarchy and loudly expressed anger toward the Combine for instigating the Last War. Paneuropeans are individuals who believe in heroes and the efforts of the one to help the many.

Residents of Paneuropean protectorates are worked hard. Some look forward to the day when their nation will become a full member of Paneurope so that they can oppress others. Some want to destroy Paneurope and all it stands for.

The Paneuropean Flag

The flag of the European Union was 12 gold stars on a blue field. (The number of stars did *not* represent the number of member nations; it was considered "a perfect, balanced number.") When the E.U. became the Paneuropean Federation, a Corinthian helm was added at the center, symbolizing mutual defense.

Alternate Paneuropes

Paneurope as it stands values diversity, but makes no effort to help the poor and has zero tolerance for anarchy. A "Dark" Paneurope can be positively feudal, with each protectorate nation the fiefdom of a corporate prince. Catholicism is the state religion of Dark Paneurope, enforced by the Ogres of the Vatican Guard. "Light" Paneurope has less poverty and fewer class distinctions. The protectorates are *real* protectorates, and the occupying Paneuro forces are peace-keepers in truth.

The Free States

The Free States are technically independent allies of the Federation, but in reality are simply protectorates under another name. The core members of the Free States are Ukraine, Georgia, and Azerbaijan. Armenia and Moldova were briefly members, but Paneurope annexed them as true protectorates in 2077.

Australia

Well-defended and far from the Combine and Paneurope, Australia is spared the worst of the Last War. The Nihon Empire is preoccupied with China and doesn't want to anger Australia's Combine allies prematurely. A few GEV skirmishes around the Cape York Peninsula and a low-key infowar is the worst Australia experiences.

Of all the nations of the 21st century, Australia has changed the least since the previous century. Its parliamentary government survives the new century intact. Its trade and foreign relations are as stable as possible. It remains an ally of the Combine to the end of the century.

After the Fall of Britain, it is home to the government-in-exile of the U.K., which initially sets up court in Perth. Several fleeing British military units follow, then refugees. Eventually the Australian government cedes land along the Gulf of Carpenteria to the U.K. These scant strips of beach are the *de facto* United Kingdom until the collapse of Paneurope.

A second wave of refugees arrive when the Combine disintegrates. Fortified by this influx, Australia survives the Crash intact. For reasons unknown, the factory AIs in Australia never force the question of power.

Geography

All of continental Europe from the Atlantic coast to Russia is part of the Paneuropean Federation, one way or another. Russia itself is a member, though it is considered the big, dumb older brother of the group. When Paneurope was formed, the old European Union nations (at the time, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Portugal, Spain, and Sweden), plus Russia, were the only "full members." Large portions of the Balkans and the other former Soviet republics were "protectorates." By 2070, most of these nations have been pacified and elevated to full membership, with new nations annexed as protectorates. Notably, Switzerland was annexed just before the war, though it had not yet been truly "pacified."

Three former Soviet republics are technically independent of the Federation: Ukraine, Georgia, and Azerbaijan call themselves the Free States, and Paneurope allows them to maintain this fiction so long as the flow of grain continues.

Government

The Paneuropean Parliament meets in Strasbourg through 2078. After Strasbourg falls to the Combine, it meets in Berlin. The Parliament consists of one representative from each nation. Its powers are minimal; unlike the Combine, the individual nations of Paneurope are still functioning bodies, which only interact when it suits them. With Combine armies on Europe's doorstep, cooperation is the norm, but in the absence of a threat, no one can say whether the Federation could last a single month. The three points on which there is little disagreement are unencumbered trade, mutual defense against the Combine, and something officially called "internal pacification," which translates to "keep the weak countries in line."

Government Agencies

Paneurope has fewer organizations with Federation-wide authority than the Combine. The two most prominent deal with defense and trade.

Paneurope Defense Command

This umbrella organization controls the unified armies of Paneurope. Headquartered in Berlin, DefComm answers only to the Paneuropean Parliament.

The Paneuropean military forces are an amalgamation of the armies of its member states. Most units up through battalion size consist of troops from one nation, but larger units (regiments and up) are mixed-nation. This frequently leads to friction, as Warsaw Pact doctrines run head-on into methodical Germans and free-spirited Italians. Worse, every nation breeds fanatics who put their own country first, not Paneurope. These prejudices, on rare occasions, cause conflict, but the obvious Combine threat always looms. Overall, the Paneuropean military has very high morale and efficiency, setting aside their differences in the face of aggression.

The Paneuropean forces are organized into the First through Fifth Armies. The First defends northern France, the Low Countries, and Germany. The Second defends southern France, Spain, Portugal, and Italy. The Third is responsible for parts of eastern Europe and Scandinavia. The Fourth enforces peace in the protectorates. The Fifth is made up of reserve units, and has no fixed area of responsibility. Actions away from Europe are handled by portions of the five armies; e.g., the war in Africa is fought by several divisions of the Second Army.

Paneuropean Bureau of Trade

The Bureau governs inter-country trade in the Federation, mostly by letting it take care of itself. The Bureau is entirely subservient to the wishes of the corporate princes (see below). Its few duties mostly revolve around preventing false advertising and the like.

The Bureau is also in charge of trade between Paneurope and the protectorates. Its authority is backed up by the Fourth Army. Foodstuffs and resources come out, but little goes to the protectorates that isn't production-oriented (e.g., farming or mining equipment).

Quality of Life

The gulf between the rich and the poor is very wide in Paneurope. Corporate heads are virtually an aristocracy, respected for the stability their economic policies give to an otherwise uncontrolled society. Their control of the government is not as strong as their counterparts in the Combine, but generally, what they want, they get.

For the tiny middle class, life is almost as sweet. The rich want a well-oiled service economy and are willing to pay for it. The shopkeepers, office workers, and skilled laborers are well paid and well cared for.

The poor in Paneurope proper are surprisingly common. In theory, Paneurope could have as low an unemployment rate as the Combine. In practice, the increased freedom in Paneurope seems to mean freedom to be jobless and hungry. Darker theories suggest that the wealthy *want* some to be poor, to make their wealth all the more valuable.

The Middle East

The Middle East is bounded by the chaos of Pakistan and India on the east, restless Paneuropean protectorates to the north, and the Sahara Combat Zone to the west. Never a peaceful area, the Arabian deserts are home to entire little wars all their own. Some are overflow from other battlegrounds, others are home-grown. In response to the continued threat, the Muslim nations of the region formed the Arabian Confederation in 2073 for mutual defense. The Confederation originally included Turkey, the Arabian Peninsula, Persia, Uzbekistan, Turkmenistan, and Kazakhstan. As the Last War progresses, Paneurope annexes several of those nations as protectorates, but the countries of the Arabian Peninsula itself remain independent; possibly Paneurope knows better than to threaten the holy city of Mecca.

Each member of the Confederation retains its independence; the Confederation serves only to manage international trade and to present a unified front in foreign negotiations. It is at best a frayed patchwork of nations.

The Arabian Confederation tries to remain neutral. However, member states find themselves fighting both the Combine and the Paneuropeans, many times simply being overrun during the course of other engagements. Often rivalries within the Confederation itself hinder cooperation, making foreign intrusions easier. Throughout the 21st century, both the Combine and the Paneuropean Federation offer alliances with the Confederation's individual members. However, no treaty is kept very well or lasts very long.

Israel

Staunchly withstanding both military and political onslaught, Israel maintains its hold on the Mediterranean coast. Its military districts include much of Lebanon and parts of old Jordan. Heavily bolstered by Combine aid, Israel has the most advanced military in the Middle East, including their own cybertank (the Golem, p. 96). The Israeli coast suffered some flooding damage during the destruction of Egypt, but Israel ends the century uninvaded and intact.

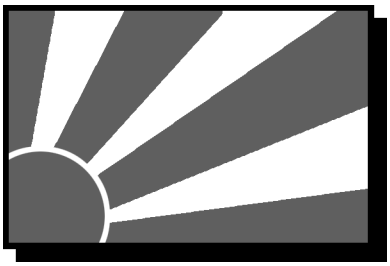
Being a Nihon Citizen

Imperial citizens know that their culture and society represent the flower of civilization, combining a thousand years of tradition with the best that modern technology can offer. Everyone owes loyalty and reverence to the Son of Heaven, and every station in life has its own requirements. Honor lies in fulfilling those requirements.

A complex web of duties (*on*) entangles everyone. Some of these can never be lifted, such as one's duty to the Emperor or to one's parents. Others are incurred temporarily, such as the duty to someone who helps you when you fall. A duty is a terrible obligation, and Nihon may sometimes *not* help each other, so as not to impose an obligation on the one helped.

The Nihon Flag

The Imperial flag is the rising sun, with rays. Unlike earlier Japanese flags, the sun is located in the lower-left corner, with only one-quarter of its disk visible. In the 20th century, the sun-with-rays was strictly a military flag; its adoption as the national flag was an explicit admission of the Empire's expansionistic goals.



Alternate Nihons

To make Nihon "darker," consult any text on WWII-era Imperial Japan, particularly such atrocities as the Rape of Nanking. "Light" Nihon, on the other hand, is a *peacekeeping* force. The invasions of China and the Combine were attempts to stop existing violence in those areas and promote a peaceful way of life.

Despite this, Paneurope continues to value variety and free thought. This is both an outgrowth of the diversity of Europe and a reaction to the failed Communist "experiments" of the 20th century. At its best, this has encouraged intellectual freedom far greater than in the other empires. At its worst, however, this leads to super-patriotism bordering on jingoism.

Resistance

The protectorates of Paneurope, including the Free States, are full of resistance cells of varying size and competence. The Fourth Paneuropean Army spends all its time putting down rebellions and ferreting out saboteurs.

In Switzerland, almost 10% of the population went underground – often literally – the moment Paneurope annexed the country. They were dubbed "Cuckoos" by the Paneuropean media, and they fiercely adopted the name. Living today in the vast underground fortifications the Swiss built in case of just such an eventuality, the Cuckoos make Switzerland a very difficult prize to keep.

The Nihon Empire

In the last half of the 21st century, Japan set out once more on the road to conquest. The growing population, technologically skilled and accustomed to a high standard of living, required more space and a constant flow of raw materials. At the same time, Nihon saw its less developed neighbors as direly in need of its technology, its know-how, and (perhaps more important) its culture.

Geography

At the beginning of the Last War, Nihon consists of Japan proper, all of the Asian mainland east of India and south of China, and nearly every Pacific island north of Australia and west of the international date line. By the end of the war, it also controls China, Korea, and portions of Mongolia and Russia. Singapore is independent until 2085, when it quasi-voluntarily joins the Empire.

Government

All authority rests in the Heavenly Emperor, whose wishes are carried out by his lords and generals. The generals control their troops through a typical hierarchy of colonels, majors, and so on. The lords (*daimyo*) are businessmen who have been granted titles and given responsibility over a certain geographic or industrial area (e.g., the Daimyo of Telecommunications for the region of Shikoku). Daimyo are frequently placed in indirect competition with each other, creating a unique blend of capitalism and a centrally controlled economy. Conflict can be strictly economic, or involve assassins, sabotage, and corporate infowar.

The hereditary "samurai" nobility is long extinct, but the word and the philosophy survive. A brave soldier, a hard-working daimyo, or a wise judge will be praised as "samurai" for putting their talents to work, not for themselves but for the Emperor and the people.

Citizens can also be ennobled for achievement in artistic, scientific, or athletic pursuits. These titles do not confer power as such, but the honoree

will get preferential treatment in all aspects of life, and in turn is expected to be a role model and public figure – an *idoru.* Camera-shy types who shun publicity do not get titles. Neither do dissidents or iconoclasts.

Culture

Nihon's society and its complex culture are one and the same. Both ritual and spontaneity are valued in every aspect of life, from the proper respect to show to one's parents, to how to appreciate the beauty of a flower arrangement. The particulars of this highly technological yet traditional culture are beyond the scope of this book, and both ***GURPS Japan,*** *Second Edition* and ***GURPS Cyberpunk*** are recommended to those interested.

Anyone, regardless of ethnicity, who lives by the rules of Nihon culture is "civilized," and will be treated well. Even an honest effort by the ignorant will be looked upon favorably. In the areas controlled by Nihon, natives who adopt Nihon ways – or seem to – will be treated with respect, perhaps to the annoyance of their neighbors. Nihon soldiers will be more respectful of enemy troops than of enemy civilians, because (as long as they behave honorably) the troops are something like samurai, obeying their leaders and fighting for their homeland, and their honor is more important than the fact that they are enemies!

Clones in the Empire

In Nihon, important civil and military leaders may have themselves cloned. The child is known as *kuroon-tane,* "clone-offspring." A clone is raised as a member of the gene-donor's family. From an early age, the child is made aware of his status and the obligation it places on him. The traditional Nihon "duty-to-parents-and-ancestors" (*ko*) is increased for clones; they have only one parent, so they owe everything to him. The gene-donor may collect on this obligation at need, in the form of spare parts. A clone is expected to willingly give up organs, limbs, blood, etc., to his "parent" should the parent be injured or sick. This extends to organs the clone can't live without (e.g., the heart), though the parent may refuse to take things that far, or at least try to arrange for a cybernetic heart for his clone. Most Nihon clones are quite willing to sacrifice parts of themselves when the need arises.

As a rule, people only have one clone made. (The emperor is an exception, with as many as half a dozen clones at a time.) If one clone should be killed or "used up," a second one may be created. Clones are old enough to give blood or bone marrow transplants by age 5, but kidneys, lungs, and limbs are most successfully transplanted after puberty. Cases of clones posing as their gene-donor are rare, since clones are at least 20 years younger than their parents.

Cloning is slightly controversial in the Empire. The official policy is that it prolongs the life of important men who do the Empire's work, and thus is good. Nevertheless, it is a matter of personal choice, and many high-ranking officials choose against it.

Apart from the possibility of having to provide parts unexpectedly, a clone's life is little different from a normal citizen's. They are expected to remain physically close to their parent, in case of emergencies, so usually take occupations in the parent's office, military division, etc. A clone's social behavior is expected to be exemplary; since he is genetically identical to his parent, any fault in the clone is regarded as a potential fault in the parent.

India and Pakistan

In 1998, India flexed its military muscles by testing a nuclear device near rival Pakistan. Pakistan responded with a similar test. Various "incidents" (such as observation planes being shot down) continued over the following decades, and the two nations remained implacable enemies. In 2078, the hostility escalated out of control. A Pakistani patrol was killed by Indian border guards. Pakistan responded by using conventional bombs on the border post and (perhaps accidentally) the neighboring village. India launched 17 strategic nuclear missiles against Pakistani military targets. Only six detonated, but that was sufficient to cause a counterstrike which was similarly plagued with mechanical problems.

India and Pakistan exhausted their nuclear arsenals by the end of 2082, whereupon conventional warfare ensued. India's far superior population base made its victory inevitable, but costly. By the end of 2085, Pakistan was occupied territory, but many major cities in both countries were smoking craters, and the Indian military was in tatters. India slowly rebuilt its military, managing to repel all invaders during the rest of the Last War, but by 2090, the central government was losing its grip. Pakistan threw out the occupying forces and promptly splintered into factions. Various outlying provinces of India declared their independence or were seized by neighbors. By the end of the century, India – formerly the world's largest democracy – was no more.

Africa

The only thing Paneurope and the Combine contribute to Africa during the 21st century is war. Only the most civilized nations in Africa survive. The areas least damaged are the south and the Indian coast. The Congo and the Sahara end as a sea of mud and a sheet of glass.

Continued on next page . . .

Intentional rejection of Nihon culture is nearly equivalent to declaring oneself a barbarian. "Gaijin" is an insult, but it no longer has a racial connotation. It now means the same as the Russian "nikulturny" – uncultured, rude, and obnoxious.

Quality of Life

In Nihon proper, life is quite comfortable. There are more super-rich and more poor than in the Combine, but no one goes hungry and every child attends school. Nihon technology does a great deal with limited resources, and Nihon culture encourages frugality, efficient use of living space, and tolerance of one's neighbors. Large families are unknown; most couples stop with two children.

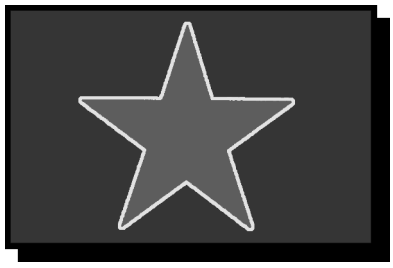
In Nihon, one's station can quickly be determined by one's style of dress. Schoolchildren wear uniforms, businessmen wear certain styles and colors of suits, service workers dress in gray. Daimyo often choose to wear robes in the medieval Japanese style.

By the standards of the rest of the world, Nihon citizens live in an astoundingly info-saturated culture. People listen to the radio, or watch television, or link to the infonets, 24 hours a day. They are never alone, even when they are by themselves. Some go their entire lives without disconnecting from the support and reinforcement of Nihon society in the form of popular music and rosy reports from the front.

Crime and Resistance

In the civilian population, justice is fair but strict. Punishment for even minor crimes can be severe, but the system works hard to ensure only the guilty are punished. Military discipline is far more severe; Nihon's troops are held to high standards of skill and obedience. It is understood that any dishonor can be wiped out by sacrificing oneself for the Emperor . . . but soldiers who take this path are expected to do so intelligently, waiting for a time when their sacrifice will aid their comrades rather than endanger them.

In the occupied nations, resistance to Nihon governance is common and difficult to crush. The Chinese alone outnumber Nihon ten to one; only vigilance, determination, and superior technology maintains the current state of affairs.



China

Prior to the Last War, China was a sleeping dragon – rarely disturbed and quick to anger. It was still called Communist, but the truth was as it had been for decades: The heirs of Mao owned everything and the people worked. There was little difference between the core of the Communist Party and the mandarins of China's past. China's resources were vast and its technology as good as any nation's except Nihon, but most benefits went to the ruling class.

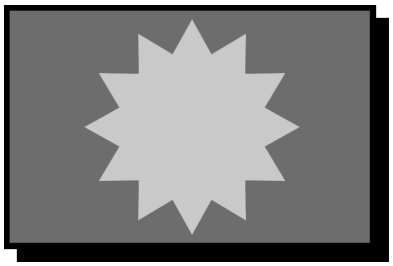
The common citizenry live adequately, if not well. The strict birth-control campaigns of the 20th century are nearly universal by the late 21st century. China's population is virtually stable, allowing more to eat and better education for the smaller families. Quality medical care is free, and the average Chinese is content.

In the Last War, the Eternal Kingdom is finally defeated. For nearly two decades, China fights desperately to survive. No theater of battle is ignored – the Chinese fight on land and sea, in the air and in cyberspace. The citizenry work harder than they have at any point in China's long history. In the end, it isn't enough.

For the last 12 years of the 21st century, China writhes under the Nihon Empire's thumb. Uprisings are constant, and not a month goes by without another bloody suppression. There are persistent rumors of a new Chinese army equipped with stolen Nihon equipment forming in western China.

When the Nihon Empire collapses, of course, China absorbs its conquerors, as it always has.

South America



Prior to 2085, South America was largely unchanged from the 20th century. Then the Combine invaded. After that, South America can be roughly divided into four parts.

The Amazon Combat Zone

The Guyanas, Venezuela, portions of Colombia, and northern Brazil are a no-man's land after the second month of the invasion. The few cities that aren't bombed flat are cut off from any higher government; they are fortress cities at best, ghost towns at worst. The battles are constant across the Amazon basin from 2085 to 2090, and the Amazon outflow is radioactive for decades.

Nova Brasilia

This reformation of Brazil is backed by Paneuropean money and technology (otherwise, it would not last a week against the Combine). As Paneurope's proxy, it fights hard, and manages to resist the Combine long enough. Crowded with refugees from the Combat Zone and under constant pressure from the north, it is not a pleasant place to live. Paneuropean funds begin to dry up in 2089, causing Nova Brasilia to sink into abject poverty.

The Argentinean Agricultural Union

The Union was formed from Argentina and the nations on its northern border. Its name was picked to make it seem peaceful, but its purpose was mutual defense. In exchange for grain shipped to Paneurope, the Union receives the bare minimum of technology and materiel it needs to hold off the Combine. Nova Brasilia provides a buffer, but the Union still suffers heavy losses throughout the South American portions of the war.

Combine South

The Combine's allies in South America are the Pacific-coast nations of Chile, Peru, Ecuador, and most of Colombia. Here, the effects of the war are far less apparent; the Andes prevent all but the lightest units from crossing. The Combine has invested in their economies and governments, buying their alliance and turning them against their eastern neighbors.

Africa (continued)

The Sahara Combat Zone

The Sahara itself, sparsely inhabited to begin with, serves as an ideal battlefield for the Combine and Paneurope. The cities around the edges are all claimed by one empire or another during the conflict. The Red Sea coast, Egypt, and parts of Libya are Paneuropean strongholds; Morocco and the Ivory Coast are controlled by the Combine. The lands in between – Algeria, Chad – flip back and forth as the battles rage.

After the destruction of Egypt in 2086, the nations of north and central Africa cease to exist in any meaningful way. Every caravan or group of scavengers is its own law.

South Africa

The Republic of South Africa is one of the few nations to survive the Last War. With both natural resources and industry, and its own internal struggles settled decades before, South Africa remains neutral. Trading resources for technology, dealing with all countries, and maintaining a strong army, it outlasts all the countries falling around it.

Prisoners of War

Soldiers captured by the big empires can expect humane treatment, largely following the Geneva Convention. (There are, of course, exceptions, but they are rare.) A synopsis:

- Prisoners have the right to food, housing, clothing, medical care, and the facilities necessary for good hygiene.
- Prisoners have the right to practice their religion, to keep non-military personal property, and to receive mail (including packages containing food, clothing, religious items, and recreational or educational materials).
- Any rules pertaining to a prisoner's behavior must be posted where the prisoner can read them, in a language the prisoner understands.
- The prisoner cannot be required to divulge information beyond name, rank, service number, and date of birth.
- The prisoner may be required to perform labor that is not unhealthy or military-related.

The smaller nations treat their prisoners in many ways, from "very well" to "doesn't bear thinking about."

> 3.0 CHARACTERS

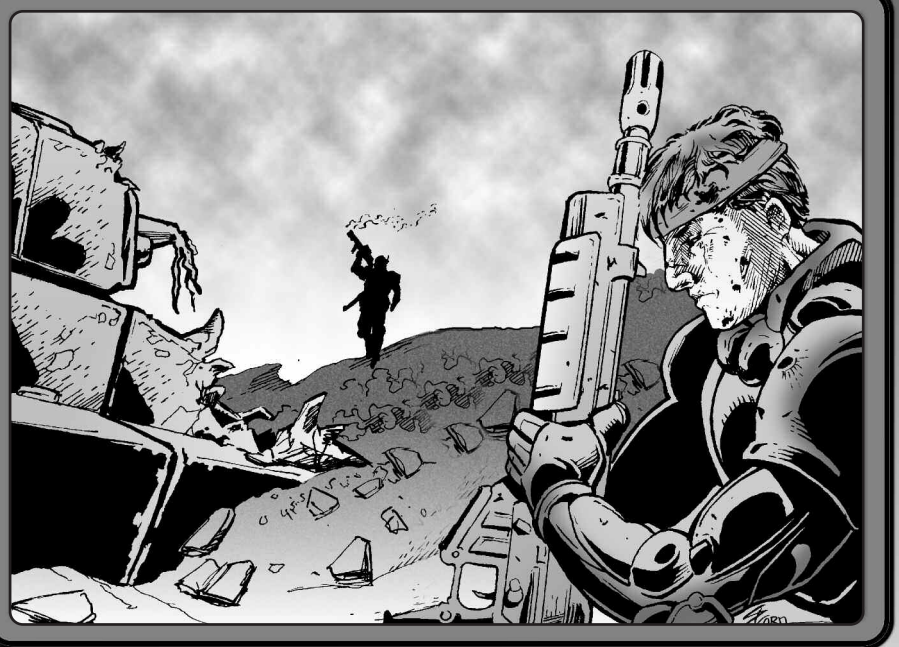
> BEGIN

DISPLAY

>RAD LEVEL
>ACCEPTABLE FOR
>BRIEF EXPOSURE

>RALLY ALL
>SURVIVORS ABLE
>TO WALK AND
>PROCEED NORTH
>2.2 KILOMETERS
>TO RENDEZVOUS
>WITH TRANSPORT
> - BE ALERT
>FOR HOSTILE
>STRAGGLERS

>REGRET NO
>PROVISION
>POSSIBLE FOR
>MORE SEVERELY
>WOUNDED



"Get out of the light!"

"I thought you said its sensors are offline!"

"That's the plan; the tech I bribed thinks we're sneaking contraband luxuries into the camp. He arranged for the internal sensors to be down – including the Ogre's. But taking chances is ***not*** *the way to survive in this trade."*

The two black-clad whisperers paused as an Ogre repair crew passed them, leaving the "corral" where Elefant, a Paneuropean Legionnaire, was sitting. Its sides were pocked and half its weapons were wrecked. Best of all, a huge chunk of armor was missing from the cowling behind the sensor tower. With any luck, only a foot of BPC remained between the braincase and the outside world.

One of the two figures was tall, in command, and female. The other was short, male, and visibly nervous, even in night-black fatigues and face paint.

"Okay, I'll climb that pole there, shinny over that wire, and drop onto its back. Once I'm on the wire, you jump the fence. As soon as I touch its back, throw me the satchel nuke."

"And if it's not 'blind'?"

"Most of the anti-personnel guns on this side are burned out. I think we only have to worry about number 7, and it can't reach us at this angle if we're closer than 20 feet."

"Unless it moves."

"It takes an Ogre some time to cold-boot and get in motion. Twenty, thirty seconds at least."

"Damn. I've never been this scared."

"Fun, isn't it?"

GURPS Ogre is predominantly a military setting, but there's room for many kinds of characters beyond soldiers. Ragged survivors wander through the rubble of Europe and the desolate Combat Zones . . . brave guerrillas and desperate resistance leaders plot in the dark . . . and, in spotlessly clean factories, brilliant engineers converse with their artificial children, the Ogres.

PCs can be designed from scratch using the classic guidelines from the ***Basic Set***, or "jump-started" using the character templates on pp. 39-47. If you decide to start from scratch, at least browse the templates for ideas, and see below for suggestions and commentary on advantages, disadvantages, and skills in this setting.

Point Totals

100 points works for fresh-faced recruits, freedom fighters, or survivors in war-torn Paneurope.

150 points is suitable for experienced freedom fighters as well as mid-level military PCs. (Given the odds, they need all the help they can get.)

200 points is the recommended level for special ops teams, Ogre-busters, and elite cavalry units. At this level, the traditional 40-point limit on disadvantages may be increased to 100 points.

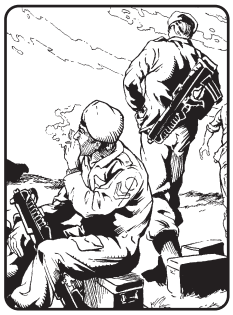
In campaigns mixing Ogre and human PCs, point balance is irrelevant! If your players have no problem with one PC being worth thousands of points, why not let them set their own point levels?

Gender Issues

The Paneuropean and Combine militaries are gender-integrated. The Combine requires regular doses of Steresthai (p. 66) for troops away from their families; the Paneuropeans merely recommend it strongly. The Nihon Imperial armed forces are all-male (in fact, they find the idea of female soldiers appalling). China uses female soldiers in non-combat roles (comm officers, doctors, etc.).

Advantages, Disadvantages, and Skills

Advantages



Allies and Ally Groups *see pp. B23, CI19*

For military characters, other members of your squad or platoon are not always Allies. If a squadmate is extremely likely to come to your aid, above the normal call of duty and at personal risk, he may be an Ally. If the PCs make up a portion of a platoon and the rest of the platoon is frequently around to provide aid, the GM may wish to charge all PCs for an Ally Group, or waive the cost as part of the "background cost" for the campaign.

Extra Hit Points, Hard to Kill, Very Rapid Healing *see pp. CI24-25, 31*

A couple of these advantages might be considered cinematic, but nuclear combat is quite hard on PCs, so the GM may permit them.

Fit *see p. CI25*

This advantage is extremely common among all front-line troops, and is required for special ops forces. Very Fit (p. CI31) is also available.

Gadgeteer *see p. CI25*

The 25-point version of this advantage is suitable for all but the most realistic ***GURPS Ogre*** campaigns. The 50-point version should only be allowed in cinematic campaigns (such as Ogre-buster scenarios).

Legal Enforcement Powers *see p. B21*

Members of the armed forces do not typically have Legal Enforcement Powers. They may shoot the enemy, but in their homeland they have no more authority than a civilian. An MP (Military Police) in any army may have 0, 5, or 10 points of Legal Enforcement Powers, with sharp limits on jurisdiction. Being a member of the Combine Bureau of Internal Investigations (CBII) is worth 15 points; they have broad authority and powers (see p. 24). Paneurope has several law-enforcement bodies, none of which grants its members more than 10 points of Legal Enforcement Powers.

Literacy *see p. B21*

Literacy is the norm, with no cost.

Military Rank *see p. B22*

This is covered in detail on pp. 47-48. Note that low-ranking enlisted men have Military Rank 0, which is free.

Patron *see p. B24*

The military is not a Patron for a soldier. If a particular high-ranking officer takes an interest in an enlisted man, the officer may be a Patron.

Reputation *see p. B17*

Medals and decorations confer a good Reputation upon the wearer, giving the soldier a positive reaction from other members of the military and some civilians. Base value can range from +1 for a combat indicator to +4 for the Combine Medal of Honor or Crux Europa. The military counts as a "large" class of people (1/2 value). Frequency of recognition is "all the time," or "sometimes" at a minimum.

Security Clearance *see p. CI29*

This advantage costs 5/level for citizens of Paneurope, the Combine, the Nihon Empire, or China. For other nations, it is 2/level.

Status *see p. B18*

Status levels in the Combine are flattened; the First Councilor's Status is only 4, and no levels below -1 exist. Note that status may be altered cross-culture; when visiting Paneurope, the First Councilor is on equal footing with Status 7 heads of state.

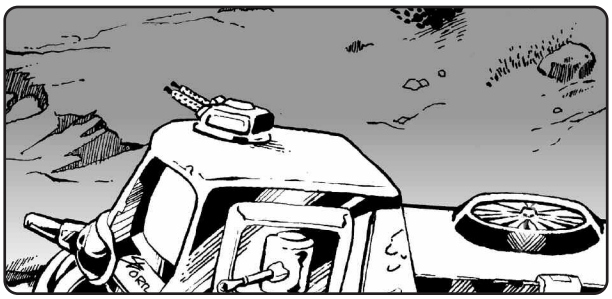
Wealth *see p. B16*

Starting wealth is $15,000. In the Combine, this is dollars; in Paneurope, euros (€). One Combine dollar equals about 100 Nihon yen (¥) or 100 Chinese yuan (Y). All prices will be listed in $; the GM may do conversions for flavor, or ignore them.

Great personal wealth is uncommon in the Combine. The GM may prohibit Very Wealthy, Filthy Rich, and Multimillionaire to Combine PCs entirely, or charge a 10-point Unusual Background.

Paranormal Abilities

Magery, psi powers, and other paranormal advantages are not available in the standard ***GURPS Ogre*** world. Danger Sense and Empathy are allowed, but are not considered psi abilities.



Disadvantages

A great many disadvantages are inappropriate for military PCs; One Leg and Pacifism are two examples. Also note that Fat, Overweight, Gigantism, Skinny, Dwarfism, and the like, will prevent a character from wearing a battlesuit (see p. 52 for size limitations). Players and GMs should use their judgment, or consult ***GURPS Special Ops,*** *Second Edition,* pp. 50-51, for a more extensive discussion of the topic.

Addiction *see p. B30*

Cigarette smoking is *illegal* in the Combine from 2010 on; a tobacco addiction is worth -10 points. Various medical drugs are also addictive; see pp. 65-66.

Code of Honor *see p. B31*

"Honorable" men are more common among Paneuropean soldiers and officers than in Combine ranks, but these disadvantages are available to any soldier in the Last War.

Enlisted Man's Code of Honor: Be willing to fight and die for the honor of your unit, service, and country; follow orders; look out for your squadmates; take care of your gear and suit; treat an honorable enemy with respect; wear your uniform and battlesuit with pride. *-10 points.*

Officer's Code of Honor: Be tough but fair; bring honor to your unit, service, and country; follow orders; look out for your men; lead from the front; observe the "rules of war"; wear your uniform and battlesuit with pride. *-10 points.*

Bushido: The Nihon "Way of the Warrior" centers on absolute loyalty to one's superiors and single-mindedness in the execution of orders dictated by them or by one's station in life. A warrior is expected to die rather than fail in his task, even when that means following a suicidal order. Pain, discomfort, and even death must be faced stoically. He must always be polite to his equals and superiors, and cannot overlook disrespect from a social inferior. This disadvantage is required for any but the most free-willed Nihon Ogres. *-15 points.*

Cyber-Rejection *see p. CI81*

Cybernetic parts exist in the ***GURPS Ogre*** world, but are neither common nor the focus of the game. This disadvantage is worth no more than -10 points, and may be disallowed by the GM.

Enemies *see p. B39*

The enemies of your nation are not your personal enemies, so they are worth no points.

An Ogre is worth -30 points as a personal Enemy, modified by frequency of appearance. It may be a "single very formidable individual" (normally worth -10 points), but few human enemies are capable of driving *over* a city to get to you.

Extremely Hazardous Duty *see p. CI78*

This disadvantage is required for all front-line troops. Lower levels of Duty are recommended for Ogres themselves; their "brains" are rarely at great risk.

Fanaticism *see p. B33*

Fanatics are common on all sides of the Last War. It is virtually required for the Nihon military! Combine soldiers tend to be more stoic about it, but equally serious. Paneuropean troops, when they are fanatical, are usually devoted to their home nation, not to Paneurope as a whole.

Illiteracy *see p. B33*

Illiteracy is a disadvantage worth -10 points.

Non-Iconographic *see p. CI92*

A character with this disadvantage will be unable to use HUDs or battle computers in any but the most basic modes. Most armies will not knowingly accept someone who has this problem.

Odious Personal Habit (Lacks Culture) *see p. B26*

Nihon citizens believe their way of life is the *best* way of life. Someone who does not follow the dictates of Nihon culture is regarded as rude, ignorant, deficient, or all three. This is different from a Social Stigma, as it can be bought off if the character changes his ways. *-10 points.*

Odious Personal Habit (Unpatriotic Comments) *see p. B26*

Disparaging remarks about the Combine government are marginally legal, but are considered in very poor taste. *-5 points.*

Pacifism (Except Against Ogres) *see p. B35*

You will not harm other human beings, even in self-defense. You may *restrain* other humans, or incapacitate them in ways that do no real harm. You reserve true violence for Ogres. *-20 points.*

Phobias *see p. B35*

Ogres and AIs (Pseudologophobia): You fear and dread artificial intelligences. Conversation with an AI requires a Will roll at -6. Fighting an Ogre is impossible, except with a critical success! *-10/-20 points.*

Radiation (Radiophobia): Radiation can't be detected by human senses, yet too much of it leads to a nasty death. This phobia represents near-paranoia about potentially radioactive items. It would be worth more points, except that fear of radiation is demonstrably a survival instinct. *-5/-10 points.*

Poverty *see p. B16*

Like significant personal wealth (see p. 36), great poverty is also uncommon in the Combine; room, board, and medical care are available to all. Unless the character is actually making an effort to avoid the Combine's help, both Dead Broke and Poor are prohibited to Combine characters.

Reduced Manual Dexterity *see p. CI83*

This disadvantage can be used to represent the various hand and wrist ailments that come from too much typing under non-ergonomic conditions. The ***Ogre*** universe contains a lot of military-specification keyboards, and some of them are *very* hard on the hands.

New Disadvantage

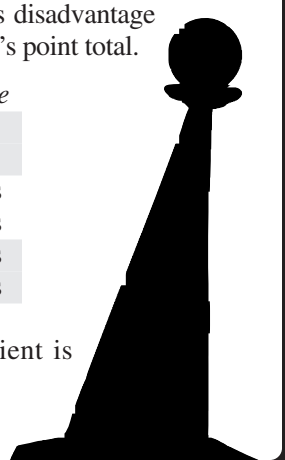
Irradiated *Variable*

You have increased sensitivity to future doses of radiation caused by being irradiated. Each level conforms to one Accumulated Dose Level from the *Radiation Effects Table* (p. CII147). This disadvantage does not include the physical side effects of radiation sickness (which may include Blindness, Hemophilia, Low Pain Threshold, Sterile, and Terminally Ill); it solely represents the increased danger from future doses. Note that this accumulated dose is *permanent.* It cannot be reduced by natural healing or drugs, which are assumed to have done as much as they can already.

This is only appropriate in settings where dangerous radiation is a genuine, difficult to avoid, hazard. If a character is irradiated during play, this disadvantage is acquired, lowering the character's point total.

Accumulated Dose	*Point Value*
Up to 10 rads	0 points
11 to 20 rads	-5 points
21 to 40 rads	-10 points
41 to 80 rads	-15 points
81 to 160 rads	-20 points
161 to 4,000 rads	-30 points

At over 4,000 rads, the patient is presumably dead.



Skills

Armoury/TL9 *see p. B53*

The weapons specializations for this skill in this setting are Conventional Rifles and Handguns, Gauss Rifles and Handguns, Vehicular Weaponry (Gauss), Artillery (Gauss), and Fixed Beam weaponry. The armor specializations are Battlesuit and Vehicular Armor.

Artificial Intelligence/TL9 *see p. CI155*

In addition to the abilities mentioned in ***GURPS Compendium I***, this skill covers understanding AI *psychology,* and acting as a psychiatrist to AIs.

Battlesuit/TL9 *see p. B49*

This skill requires no specialization, but the *familiarity* rules from p. B43 do apply. The different types are Standard, Assault, Ranger, Marine, and Engineer; the command battlesuit is of the Assault type. Also, suits from different nations are different types.

Detect Lies *see p. B65*

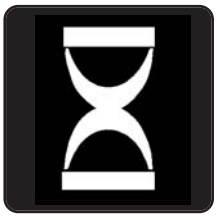
This is strongly recommended for military personnel of Rank 2 and above, but not required. (Even in the best armies, underlings think they get better results from pleasant lies than unpleasant truths.)

Gunner/TL9 *see p. B50*

The specializations for this skill in this setting are Gauss Gun, Railgun, Grenade Launcher, Mortar, Guided Missile, and Beams. These are the standard ***GURPS*** names (per pp. VE175-176), not necessarily the names used by the characters. The appropriate specialization will be listed for each weapon.

Guns/TL9 *see p. B51*

The military specializations for this skill in this setting are Needler, Grenade Launcher, and Light Antitank Weapon. For older weapons, Pistol, Rifle, Shotgun, Light Automatic, and Machine Pistol may be appropriate. Again, these are the standard ***GURPS*** names (p. VE176); an infantryman certainly wouldn't call his 3mm Wespe a "needler." The appropriate specialization will be listed for each weapon.



Leadership *see p. B63*

This skill is required for officers of any rank in professional armies. A skill level of (Military Rank + 6) or higher, minimum 10, is recommended for anyone of Rank 2 or above.

Mechanic/TL9 *see p. B54*

The specializations for this skill in this setting are Gasoline Engine, Robotics, Hovercraft Engine, Fusion Engine, and NPU Engine.

Underwater Demolition/TL9 *see p. B68*

The Scuba prerequisite may be replaced with Battlesuit/TL9 in this setting.

Character Templates

A character template is a list of attributes, advantages, disadvantages, and skills that a player can choose from to quickly build a specific character type. The point costs of these abilities are listed [in brackets]; their sum is the "template cost." The player pays this cost, selects the options desired (where multiple choices are listed), writes those abilities down on his character sheet, and spends any remaining points to customize his character.

Templates are optional guidelines, not rules. It's acceptable to mix characters created with and without templates in the same campaign. Templates are just a way of speeding up character design; they have no in-play effects and aren't discount package deals. The abilities listed are only suggestions. The player can alter any or all items on the template, or just use it for inspiration during character design.

Skills for the Template

Primary skills are those fundamental to a template's concept. Secondary skills are abilities it's hard to imagine omitting. Background skills are chosen for descriptive reasons rather than utility. Skills are listed in the format *Skill Name (Type/Difficulty) Relative Level [Point Cost]-Actual Level.*

Customization

Once a template is purchased, the player must customize it by spending any points remaining after subtracting its cost from starting character points. The template doesn't influence how these points are spent. If the template includes fewer disadvantages than the campaign limit, more may be taken, giving extra points to spend. The same is true for quirks, which should always be selected by the player.

Some templates require you to pick one of several groups of skills as your character's specialization. When you start customizing the template, feel free to add skills from the specializations you didn't take; they're not forbidden.

Character Templates vs. Racial Templates

Character templates are *not* the same as racial templates (see pp. CI173-180). Most ***GURPS Ogre*** games will include at most two races (humans and Ogres), so this distinction shouldn't come up too often.

Black Marketeer — 70 points

You've got the goods. International trade is tough when there's a war on, and the luxuries don't always make it to the common folk. Some of them end up in *your* hands, though, and you're always willing to make a deal. This template can be used for an unethical hoodlum who specializes in selling stolen property, or a nearly honest shopkeeper who does a little "gray market" business on the side. Black marketeers can appear as members of underground groups or contacts for members of the military who have a taste for the finer things.

Attributes: ST 10 [0], DX 10 [0], IQ 13 [30], HT 10 [0].

Advantages: A total of 25 points chosen from Ally Group (two to five 75-point bodyguards, 12 or less) [20], Alternate Identity [15], Charisma [5/level], Contacts (Street, skill-15, 12 or less, somewhat reliable) [4/contact], Danger Sense [15], Empathy [15], Favor [varies], Reputation (Square dealer, +3, local criminals and underground members) [5], Strong Will [4/level], and Wealth [10 or 20].

Disadvantages: A total of -20 points chosen from Code of Honor (Pirate's) [-5], Duty (Involuntary, crime boss, 9 or less) [-10], Enemy (Rivals or Law enforcement, 6 or less) [-15], Extravagance [-10], Greed [-15], Jealousy [-10], On the Edge [-15], Paranoia [-10], Reputation (Suspected criminal, -3, honest citizens) [-5], and Selfish [-5].

Primary Skills: Merchant (M/A) IQ+2 [6]-15 and Streetwise (M/A) IQ+2 [6]-15.

Secondary Skills: Accounting (M/H) IQ-1 [2]-12, Administration (M/A) IQ [2]-13, Area Knowledge (city) (M/E) IQ [1]-13, Computer Operation/TL9 (M/E) IQ [1]-13, Fast-Talk (M/A) IQ+1 [4]-14, and Savoir-Faire (M/E) IQ [1]-13.

Background Skills: A total of 12 points spent on any Language skills (usually M/A); Electronics Operation/TL9 (Security Systems), Holdout, Leadership (all M/A); Detect Lies, Diplomacy, Forgery/TL9, Law (all M/H); Brawling, Fast-Draw (Pistol), Guns/TL9 (any) (all P/E); Driving/TL9 (any) (P/A); and Carousing (P/A; HT).

Combat Engineer — 60 points

Your business is walls – building them up and knocking them down. Sure, an Ogre can destroy pretty much anything it can see, but sometimes there's a need for precisely placed high explosives. If you're lucky, you get to play with satchel nukes. It's not a safe job, and a lot of engineers retire missing vital body parts, but where else do you get to make such satisfying explosions?

Attributes: ST 11 [10], DX 11 [10], IQ 12 [20], HT 10 [0].

Advantages: A total of 15 points chosen from Alertness [5/level], Combat Reflexes [15], Fit or Very Fit [5 or 15], High Pain Threshold [10], Manual Dexterity [3/level], Mathematical Ability [10], Military Rank [5/level], Toughness (DR 1) [10], and Versatile [5].

Disadvantages: Extremely Hazardous Duty [-20], and -15 points chosen from Callous [-6], Chummy or Gregarious [-5 or -10], Code of Honor (Enlisted Man's) [-10], Edgy [-5], Hard of Hearing [-10], Missing Digit (finger, not thumb) [-2], On the Edge [-15], Overconfidence [-10], Post-Combat Shakes [-5], and Sense of Duty (Squadmates) [-5].

Primary Skills: Demolition/TL9 (M/A) IQ+1 [4]-13, Engineer/TL9 (Combat) (M/H) IQ+2 [8]-14, and Traps/TL9 (M/A) IQ [2]-12.

Secondary Skills: Armoury/TL9 (Gauss Rifles and Handguns) (M/A) IQ-1 [1]-11, Battlesuit/TL9 (P/A) DX [2]-11, Camouflage (M/E) IQ [1]-12, First Aid/TL9 (M/E) IQ [1]-12, Guns/TL9 (Grenade Launcher) (P/E) DX+3 [2]-14*, Guns/TL9 (Needler) (P/E) DX+3 [2]-14*, Savoir-Faire (Military) (M/E) IQ [1]-12, Surveying/TL9 (M/A) IQ-1 [1]-11, and 10 points in any of Electronics Operation/TL9 (Comm), Electronics Operation/TL9 (Sensors), Mechanic/TL9 (any), NBC Warfare/TL9, Underwater Demolition/TL9 (all M/A); Explosive Ordnance Disposal/TL9 (M/H); and Throwing (P/H).

Background Skills: A total of 5 points in any of Carpentry, Scrounging (both M/E); Administration, Leadership, Survival (any) (all M/A); Strategy, Tactics (both M/H); Brawling, Knife (both P/E); Gunner/TL9 (Mortar), and Stealth (both P/A).
* Includes +2 for IQ 12.

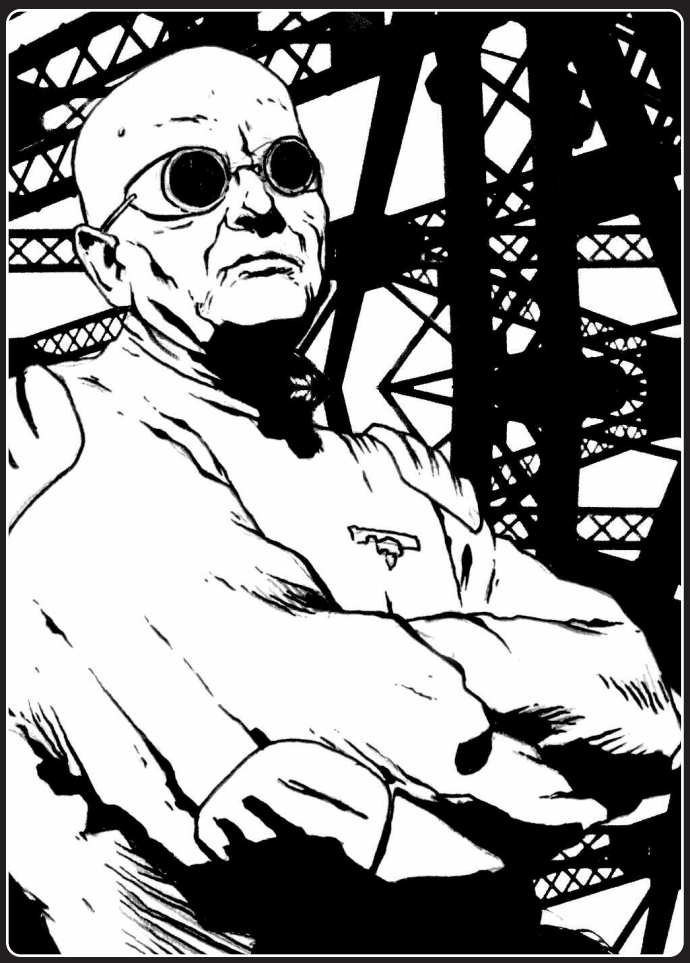
Note: If you take Mathematical Ability (p. B22) or Versatile (p. CI31), remember to apply the appropriate skill bonuses.

Cyberneticist — 70 points

God created man, but man created Ogres. To be specific, *you* did. You're a member of one of the most specialized, complicated professions in the world: making inorganic matter think. The day-to-day life of a cyberneticist is not an adventurous one, but any Ogre, anywhere, may have an unexpected mental breakdown . . . and when a nuclear-armed tank needs a psychiatrist, it gets one *fast.* Cyberneticists may also be called in to predict the behavior of enemy Ogres.

Attributes: ST 10 [0], DX 10 [0], IQ 14 [45], HT 10 [0].

Advantages: Mathematical Ability [10], and 15 points chosen from Administrative Rank [5/level], Intuition [15], Lightning Calculator [5], Security Clearance [5/level], Single-Minded [5], and Wealth [varies].



Disadvantages: A total of -20 points chosen from Bad Back [-15], Bad Sight (Correctable) [-10], Combat Paralysis [-15], Curious [-5 to -15], Edgy [-5], Shyness [-5 to -15], Truthfulness [-5], Unfit [-5], Weak Will [-8/level], and Workaholic [-5].

Primary Skills: Artificial Intelligence/TL9 (M/H) IQ-1 [2]-13, Computer Operation/TL9 (M/E) IQ+1 [2]-15, Computer Programming/TL9 (M/H) IQ+2 [2]-16*, Electronics/TL9 (Computers) (M/H) IQ+1 [2]-15*, and Electronics Operation/TL9 (Computers) (M/A) IQ [2]-14.

Secondary Skills: Computer Hacking/TL9 (M/VH) IQ-1 [1/2]-13*, Cryptology/TL9 (M/H) IQ-2 [1]-12, Electronics/TL9 (any other) (M/H) IQ [1]-14*, Electronics Operation/TL9 (other) (M/A) IQ-1 [1]-13, Linguistics (M/VH) IQ-4 [1/2]-10, and Mathematics (M/H) IQ+1 [1]-15*.

Background Skills: A total of 5 points in any of Language skills (usually M/A); Administration, Mechanic/TL9 (Robotics), Speed-Reading, Writing (all M/A); Philosophy, Psychology (both M/H); and Driving (any) (P/A).
* Includes +3 or +2 bonus for Mathematical Ability.

Note: Over 90% of the cyberneticists in the world are citizens of Paneurope, the Combine, or the Nihon Empire, so 5 points/level is the default cost of Security Clearance for this template. If you wish to play (for example) an Israeli cyberneticist, Security Clearance is only 2 points/level.

GEV-Jockey — 70 points

You're the "driver" of a ground effect vehicle, but you don't demean your profession with the word "drive" . . . you're a *pilot,* guiding your craft at insane speeds over terrain those wimpy *air*-pilots never have to deal with. In the militaries of the 21st century, you and your kind have the same attitude and *esprit de corps* that aerospace pilots used to have, before flying an aircraft into a war zone became simple suicide. This isn't to say that piloting a GEV is *safe* – your best defense is high speed, not the few inches of BPC your craft carries. And you wouldn't have it any other way.

Attributes: ST 10 [0], DX 12 [20], IQ 12 [20], HT 11 [10].

Advantages: Military Rank 3 [15], and 20 points chosen from Absolute Direction [5], Acute Vision [2/level], Combat Reflexes [15], Charisma [5/level], Danger Sense [15], more Military Rank [5/level], and Reputation (Hotshot pilot, +2, soldiers) [5].

Disadvantages: Extremely Hazardous Duty [-20], and -15 points chosen from Bloodlust [-10], Callous [-6], Code of Honor (Officer's) [-10], Fanaticism (nation) [-15], Glory Hound or Overconfidence [-15 or -10], Hard of Hearing [-10], Intolerance (Tankers) [-5], Impulsiveness [-10], Jealousy [-10], Loner [-5], On the Edge [-15], Sense of Duty (Wingmen) [-5], and Workaholic [-5].

Primary Skills: Driving/TL9 (Hovercraft) (P/A) DX+2 [8]-14 and Gunner/TL9 (Railgun) (P/A) DX+2 [2]-14*.

Secondary Skills: Computer Operation/TL9 (M/E) IQ [1]-12, Electronics Operation/TL9 (Comm) (M/A) IQ-1 [1]-11, Electronics Operation/TL9 (Sensors) (M/A) IQ-1 [1]-11, Guns/TL9 (Needler) (P/E) DX+2 [1]-14*, and Savoir-Faire (Military) (M/E) IQ [1]-12.

Background Skills: Tactics (M/H) IQ-2 [1]-10, and a total of 4 points in any of Armoury/TL9 (Vehicular Weaponry), Forward Observer, Mechanic/TL9 (Hovercraft Engine), and Survival (Radioactive) (all M/A); and Carousing (P/A; HT).

* Includes +2 for IQ 12.

Guerrilla — 70 points

You're a dedicated fighter in the war against the army occupying your country. Whether it's the Combine in Brazil or the Paneuros in the Balkans, you want them out. You're not a terrorist; you go after military targets only. Pity the *targets* don't see it that way. The guerrilla is best suited to an all-guerrilla campaign, but he can also find himself in unexpected alliance with the far more powerful enemies of his enemies.

Attributes: ST 10 [0], DX 11 [10], IQ 12 [20], HT 10 [0].

Advantages: A total of 20 points chosen from Alertness [5/level], Ally Group (Other guerrillas) [varies], Combat Reflexes [15], Composed [5], Contacts [varies], Danger Sense [15], Higher Purpose [5], Sanctity [5], and Versatile [5].

Disadvantages: *Either* Enemy (Government, 9 or less) [-20] *or* Secret (Imprisonment/Exile) [-20].

Primary Skills: Area Knowledge (home region) (M/E) IQ+2 [4]-14, Camouflage (M/E) IQ [1]-12, Stealth (P/A) DX+2 [8]-13, Orienteering (M/A) IQ+1 [4]-13, and 10 points in Combat/Weapons skills (varying based on background and available equipment).

Secondary Skills: First Aid/TL9 (M/E) IQ [1]-12, Scrounging (M/E) IQ [1]-12, Survival (any) (M/A) IQ [2]-12, Tactics (M/H) IQ-1 [2]-11, and *either* Demolition/TL9 *or* Traps/TL9 (both M/A) IQ [2]-12.

Background Skills: Hiking (P/A) HT [2]-10, and 3 points in any of Armoury/TL9 (any), Holdout, Leadership, Tracking (all M/A); Intelligence Analysis/TL9, and Strategy (both M/H).

Infantryman — 60 points

You're a grunt of the 21st century – a battlesuit trooper. The Ogres can blow the hell out of cities, the tanks can pound each other into shrapnel, and the GEVs can strike and escape in two winks of an eye, but sometimes you gotta send in the infantry to Take and Hold. Your best friend is your battlesuit, with a ton of armor and strength enough to throw cars around. It's an exciting life, and probably a short one, but the rest of the army couldn't do it without you.

Attributes: ST 10 [0], DX 12 [20], IQ 12 [20], HT 11 [10].

Advantages: A total of 15 points chosen from Alertness [5/level], Ally or Ally Group [varies], Combat Reflexes [15], Fit [5], High Pain Threshold [10], Luck [15], Military Rank [5/level], and Toughness (DR 1) [10].

Disadvantages: Extremely Hazardous Duty [-20], and -15 points chosen from Bloodlust [-10], Callous [-6], Code of Honor (Enlisted Man's) [-10], Impulsiveness [-10], Overconfidence [-10], Post-Combat Shakes [-5], Selfish [-5], and Sense of Duty (Squadmates) [-5].

Primary Skills: Battlesuit/TL9 (P/A) DX+2 [8]-14, Brawling (P/E) DX+1 [2]-13, Guns/TL9 (Grenade Launcher) (P/E) DX+3 [2]-15*, and Guns/TL9 (Needler) (P/E) DX+3 [2]-15*.

Secondary Skills: Armoury/TL9 (Gauss Rifles and Handguns) (M/A) IQ-1 [1]-11, Electronics Operation/TL9 (Comm) (M/A) IQ [2]-12, Electronics Operation/TL9 (Sensors) (M/A) IQ [2]-12, First Aid/TL9 (M/E) IQ [1]-12, Forward Observer/TL9 (M/A) IQ-1 [1]-11, Mechanic/TL9 (Robotics) (M/A) IQ-2 [1/2]-10, NBC Warfare/TL9 (M/A) IQ-2 [1/2]-10, and Tactics (M/H) IQ-1 [2]-11.

Background Skills: Driving (any) (P/A) DX-1 [1]-11, Savoir-Faire (Military) (M/E) IQ [1]-12, and 4 points in any of Camouflage (M/E); Leadership, Orienteering/TL9, Survival (any) (all M/A); Strategy (M/H); Brawling, Guns/TL9 (other) (both P/E); and Carousing (P/A; HT).

* Includes +2 for IQ 12.

Infowarrior — 70 points

"We shall fight on the beaches, we shall fight in the fields and in the streets, we shall fight in the hills . . . and we shall fight in cyberspace." Let the "meat" army deal with the fields and hills; your area is the realm of data. Maybe you listen in on enemy transmissions, or crack their mainframes through the ragged remnants of the Internet. Maybe you sneak into enemy territory and physically tap their datalines. Regardless, your mission isn't about bullets and bombs; it's about collecting and using information, and spreading disinformation.

Attributes: ST 10 [0], DX 11 [10], IQ 13 [30], HT 10 [0].

Advantages: Mathematical Ability [10], and 15 points chosen from Absolute Timing [5], Alertness [5/level], Alternate Identity [15], Combat Reflexes [15], Contacts [varies], Fit [5], Language Talent [2/level], Military Rank [5/level], Night Vision [10], and Security Clearance [5/level or 2/level].

Disadvantages: Duty [-5], and -20 points chosen from Callous [-6], Curious [-5 to -15], a greater level of Duty [varies], Fanaticism [-15], Oblivious [-3], Post-Combat Shakes [-5], Selfish [-5], Trademark [-1 to -15], Trickster [-15], and Workaholic [-5].

Primary Skills: Computer Hacking/TL9 (M/VH) IQ+1 [2]-14*, Computer Operation/TL9 (M/E) IQ+1 [2]-14, Computer Programming/TL9 (M/H) IQ+2 [2]-15*, Electronics Operation/TL9 (any) (M/A) IQ [2]-13, and Stealth (P/A) DX [2]-11.

Secondary Skills: Climbing (P/A) DX-1 [1]-10, Cryptanalysis/TL9 (M/H) IQ+1 [1]-14*, Electronics/TL9 (Computers) (M/H) IQ [1]-13*, Electronics Operation/TL9 (Security Systems) (M/A) IQ-1 [1]-12, Electronics Operation/TL9 (Sensors) (M/A) IQ-1 [1]-12, Fast-Talk (M/A) IQ-1 [1]-12, First Aid/TL9 (M/E) IQ [1]-13, Guns/TL9 (Needler) (P/E) DX+2 [1]-13**, Intelligence Analysis/TL9 (M/H) IQ-2 [1]-11, Lockpicking/TL9 (M/A) IQ-1 [1]-12, Mathematics (M/H) IQ+1 [1]-14*, Research (M/A) IQ-1 [1]-12, SIGINT Collection/Jamming/TL9 (M/H) IQ-2 [1]-11, Survival (any) (M/A) IQ-1 [1]-12, Traffic Analysis/TL9 (M/H) IQ-2 [1]-11, and 1 point in one or two Language skills (usually M/A).

Background Skills: A total of 4 points in any of Acting, Architecture/TL9, Electronics Operation/TL9 (any other), Speed-Reading, Streetwise (all M/A); Psychology (M/H); Driving/TL9 (P/A); or any Language skill.

* Includes +3 or +2 bonus for Mathematical Ability.

** Includes +2 for IQ 13.

Note: If an infowarrior has an Alternate Identity, it will be an identity in an *enemy* nation.

Mechanic 60 points

There's a lot of hardware out there, and somebody's got to fix it when it gets beat up. Machines are your life, and you're very good at setting them right. Whether you work with tanks, guns, or battlesuits, it's all about the way things work.

Attributes: ST 10 [0], DX 10 [0], IQ 13 [30], HT 10 [0].

Advantages: A total of 15 points chosen from Common Sense [10], Intuition [15], Less Sleep [3/level], Single-Minded [5], and Versatile [5].

Disadvantages: A total of -15 points chosen from Bad Sight (Correctable) [-10], Clueless [-10], Curious [-5 to -15], Overweight or Skinny [both -5], Shyness [-5 to -15], Stubbornness [-5], and Workaholic [-5].

Primary Skills: Scrounging (M/E) IQ+2 [4]-15, and any *two* of Armoury/TL9 (Vehicular Weaponry) (M/A) IQ+2 [6]-15, Electronics Operation/TL9 (Comm, Sensors, or Computers) (M/A) IQ+2 [6]-15, or Mechanic/TL9 (Robotics, NPU Engine, or Fusion Engine) (M/A) IQ+2 [6]-15. Your two choices may be different specializations of the same skill.

Secondary Skills: Computer Operation/TL9 (M/E) IQ [1]-13, and *three* additional specializations of Armoury/TL9, Electronics Operation/TL9, or Mechanic/TL9, each (M/A) IQ [2]-13.

Background Skills: A total of 7 points in any of Armoury/TL9 (other), Battlesuit/TL9 (both P/A), Driving/TL9 (any), Electronics Operation/TL9 (other), Engineer/TL9 (any), Lockpicking/TL9 (all M/A), Mathematics, Mechanic/TL9 (other), or Metallurgy/TL9 (both M/H).

Notes: Choose your background skills based on your primary skill – e.g., if you take Mechanic/TL9 (Robotics) as a primary skill, you should probably also take Battlesuit/TL9.

This template represents a non-military mechanic. To fit him into the armed forces, add some level of Duty [varies], Combat/Weapon skills, and (optionally) some Military Rank [5/level]. The Overweight disadvantage is not recommended for military PCs.

Medic 60 points

Like the mechanic, you patch things up – people, in your case. Love the war or hate it, it produces a lot of injured men and women. You don't like healing them so they can be sent back to fight again, but you can't let them suffer. This template represents a compassionate military medic.

Attributes: ST 11 [10], DX 10 [0], IQ 12 [20], HT 11 [10].

Advantages: A total of 20 points chosen from Alertness [5/level], Combat Reflexes [15], Empathy [15], Fit or Very Fit [5 or 15], Hard to Kill 1 or 2 [5 or 10], High Pain Threshold [10], Military Rank [5/level], and Toughness (DR 1) [10].

Disadvantages: Duty (9 or less) [-5], and -20 points chosen from Cannot Harm Innocents [-10], Charitable [-15], Chummy [-5], Guilt Complex [-5], Nightmares [-5], Overconfidence [-10], Post-Combat Shakes [-5], Selfless [-10], and Sense of Duty (Anyone injured) [-10].

Primary Skills: Diagnosis/TL9 (M/H) IQ-1 [2]-11, First Aid/TL9 (M/E) IQ+2 [3]-14*, Physician/TL9 (M/H) IQ [4]-12, and Surgery/TL9 (M/VH) IQ-2 [2]-10.

Secondary Skills: Battlesuit/TL9 (P/A) DX-1 [1]-9, Electronics Operation/TL9 (Comm) (M/A) IQ-2 [1/2]-10, Guns/TL9 (Needler) (P/E) DX+2 [1]-12**, Mechanic/TL9 (Robotics) (M/A) IQ-2 [1/2]-10, NBC Warfare/TL9 (M/A) IQ [2]-12, Savoir-Faire (Military) (M/E) IQ [1]-12, and Stealth (P/A) DX-1 [1]-9.

Background Skills: A total of 7 points in any of Knife (P/E); Driving/TL9 (any) (P/A); Leadership, Survival (any) (both M/A); Forensics/TL9, Psychology (both M/H); Genetics/TL9, and Physiology/TL9 (both M/VH).

* Note default from Physician.

** Includes +2 for IQ 12.

Militiaman 45 points

When the army runs out of battlesuit troopers, they call on you. You're the last line of defense, the home guard. The battlefield is far deadlier for you than for an armored

soldier; your only consolation is that the enemy is running out of battlesuits, too . . .

Attributes: ST 10 [0], DX 11 [10], IQ 12 [20], HT 11 [10].

Advantages: A total of 15 points chosen from one or more Acute Senses [2/level], Alertness [5/level], Ally or Ally Group [varies], Combat Reflexes [15], Fit [5], High Pain Threshold [10], and Toughness (DR 1) [10].

Disadvantages: Duty [-5], and -20 points chosen from Bloodlust [-10], Dependents [varies], more Duty [varies], Impulsiveness [-10], Overconfidence [-10], Post-Combat Shakes [-5], and Sense of Duty [varies].

Primary Skills: Area Knowledge (home region) (M/E) IQ+1 [2]-13, Brawling (P/E) DX+3 [2]-14*, and Guns/TL9 (any) (P/E) DX+1 [2]-12.

Secondary Skills: Camouflage (M/E) IQ [1]-12, Computer Operation/TL9 (M/E) IQ [1]-12, Driving/TL9 (any) (P/A) DX-1 [1]-10, First Aid/TL9 (M/E) IQ [1]-12, Hiking (P/A; HT) HT-1 [1]-10, Knife (P/E) DX [1]-11, Mechanic/TL9 (any) (M/A) IQ-1 [1]-11, and Stealth (P/A) DX-1 [1]-10.

Background Skills: A total of 1 point in one or two of Carousing (P/A; HT), Orienteering (M/A), or a professional skill (usually M/A).

* Includes +2 for IQ 12.

Ogre-Buster — 140 points

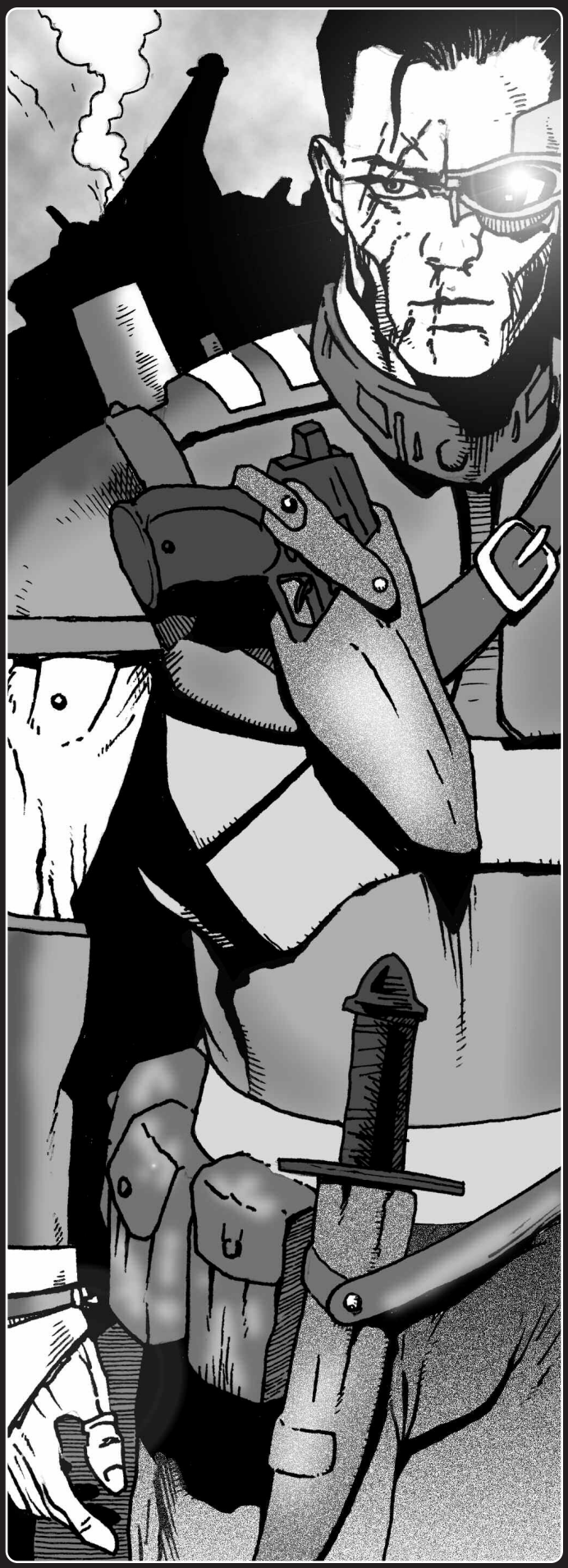
The biggest game. The greatest challenge. The ultimate prize. In straight-up combat, the only thing that can stop an Ogre is another Ogre, or a *lot* of tanks. Fortunately, straight-up combat isn't the only option. An Ogre has its weak spots, and it can be tricked. You're up to the challenge.

This is a high-cost template, suitable for a 150- or 200-point campaign.

Attributes: ST 10 [0], DX 12 [20], IQ 14 [45], HT 12 [20].

Advantages: Military Rank 3 [15], Security Clearance 2 [10], and a total of 30 points chosen from Alertness [5/level], Breath Holding 1 or 2 [2 or 4], Combat Reflexes [15], Composed [5], Fit or Very Fit [5 or 15], Hard to Kill 1 or 2 [5 or 10], High Pain Threshold [10], Lightning Calculator [5], Luck or Daredevil [both 15], Night Vision [10], Rapid or Very Rapid Healing [5 or 15], and Toughness (DR 1) [10].

Disadvantages: Enemy (Ogres in general, 6 or less) [-20], Extremely Hazardous Duty [-20], and -30 points chosen from Alcoholism [-15], Bad Temper [-10], Bloodlust [-10], Chummy [-5], Edgy [-5], Fanaticism (Humanity or nation) [-15], Nightmares [-5], On the Edge [-15], Overconfidence or Glory Hound [-10 or -15], Pacifism (Only violent against Ogres) [-20], Selfless [-10], Trademark [-1 to -15], and Trickster [-15].



Primary Skills: Armoury/TL9 (Vehicular Armor) (M/A) IQ+1 [4]-15, Artificial Intelligence/TL9 (M/H) IQ [4]-14, Battlesuit/TL9 (P/A) DX [2]-12, Computer Hacking/TL9 (M/VH) IQ-1 [4]-13, Computer Operation/TL9 (M/E) IQ+1 [2]-15, Computer Programming/TL9 (M/H) IQ-1 [2]-13, Demolition/TL9 (M/A) IQ+1 [4]-15, Electronics/TL9 (Computers) (M/H) IQ-1 [2]-13, Electronics Operation/TL9 (Computers) (M/A) IQ [2]-14, Engineer/TL9 (Vehicles) (M/H) IQ-1 [2]-13, Gunner/TL9 (Mortar) (P/A) DX+2 [2]-14*, Guns/TL9 (Grenade Launcher) (P/E) DX+4 [4]-16*, Mechanic/TL9 (Fusion Engine) (M/A) IQ [2]-14, NBC Warfare/TL9 (M/A) IQ [2]-14, and Stealth (P/A) DX [2]-12.

Secondary Skills: A total of 20 points in any of Camouflage, First Aid/TL9 (both M/E); Armoury/TL9 (other), Electronics Operation/TL9 (other), Forward Observer/TL9, Lockpicking/TL9, Mechanic/TL9 (other), Survival (Radioactive), Traps/TL9 (all M/A); Cryptanalysis/TL9, Electronics/TL9 (other), Engineer/TL9 (other), Metallurgy/TL9 (all M/H); Fast-Draw (any), Guns/TL9 (other) (all P/E); Climbing, Driving/TL9 (any), Gunner/TL9 (other) (all P/A); Throwing (P/H); and Running (P/H; HT).

Background Skills: Mathematics (M/H) IQ-2 [1]-12, and a total of 9 points in any of Architecture/TL9, Fast-Talk, Survival (other) (all M/A); Language skills (usually M/A); Chemistry/TL9, Explosive Ordnance Disposal/TL9, Geology/TL9, Intelligence Analysis/TL9, Physics/TL9, Psychology, Tactics (all M/H); and Nuclear Physics/TL9 (M/VH).

* Includes +2 for IQ 14.

Special Forces Operative — 120 points

You're the best of the best, an elite soldier ready for the most dangerous tasks. With the technology available, you could easily be a one-man army. When you and your squadmates work together, there's no stopping you.

This is a high-cost template, suitable for a 150- or 200-point campaign.

Attributes: ST 11 [10], DX 13 [30], IQ 13 [30], HT 11 [10].

Advantages: Fit [5], Military Rank 2 [10], and 15 points chosen from Breath Holding 1 or 2 [2 or 4], Combat Reflexes [15], Daredevil [15], Fearlessness [2/level], High Pain Threshold [10], more Military Rank [5/level], Reputation (Decorated) [varies], Toughness (DR 1) [10], Very Fit [+10] (adds to cost of Fit), and +1 ST or HT [10].

Disadvantages: Extremely Hazardous Duty [-20], Fanaticism (nation) [-15], plus -10 points chosen from Bloodlust [-10], Callous [-6], Chummy or Gregarious [-5 or -10], Code of Honor (Enlisted Man's) [-10], Intolerance (enemy nation) [-5], Overconfidence [-10], and Sense of Duty (Squadmates) [-5].

Primary Skills: Gunner/TL9 (Mortar) (P/A) DX+2 [2]-15*, Guns/TL9 (Grenade Launcher) (P/E) DX+3 [2]-16*, Guns/TL9 (Needler) (P/E) DX+3 [2]-16*, Orienteering/TL9 (M/A) IQ [2]-13, Stealth (P/A) DX+1 [4]-14, and Tactics (M/H) IQ+1 [6]-14.

Secondary Skills: Armoury/TL9 (Gauss Rifles and Handguns) (M/A) IQ-1 [1]-12, Battlesuit/TL9 (P/A) DX [2]-13, Brawling (P/E) DX+1 [2]-14, Camouflage (M/E) IQ [1]-13, Climbing (P/A) DX [2]-13, Demolition/TL9 (M/A) IQ-1 [1]-12, Electronics Operation/TL9 (Comm) (M/A) IQ-1 [1]-12, Engineer/TL9 (Combat) (M/H) IQ-2 [1]-11, First Aid/TL9 (M/E) IQ-1 [1/2]-12, Forward Observer/TL9 (M/A) IQ-2 [1/2]-11, Guns/TL9 (other) (P/E) DX+2 [1]-15*, Survival (Radioactive) (M/A) IQ-1 [1]-12, Jumping (P/E) DX-1 [1/2]-12, Knife (P/E) DX-1 [1/2]-12, NBC Warfare/TL9 (M/A) IQ-2 [1/2]-11, Savoir-Faire (Military) (M/E) IQ-1 [1/2]-12, Scrounging (M/E) IQ-1 [1/2]-12, Survival (any other) (M/A) IQ-1 [1]-12, and Traps/TL9 (M/A) IQ-1 [1]-12.

Background Skills: Administration (M/A) IQ-2 [1/2]-11, Driving/TL9 (any) (P/A) DX-1 [1]-12, Interrogation (M/A) IQ-2 [1/2]-11, Leadership (M/A) IQ-1 [1]-12, Swimming (P/E) DX-1 [1/2]-12, and Throwing (P/H) DX-2 [1]-11.

* Includes +2 for IQ 13.

Specialty Skills: Choose a specialty and spend a *total* of 14 points on it. Skills that appear as primary, secondary, or background skills must be increased at least one skill level; all new skills must be learned at level 13 or better.

Communications: Increase Electronics Operation/TL9 (Comm); add Electronics Operation/TL9 (Sensors) (M/A), SIGINT Collection/Jamming/TL9, and Traffic Analysis/TL9 (both M/H).

Weapons: Increase Armoury/TL9 (Gauss Rifles and Handguns), Battlesuit/TL9, Gunner/TL9 (Mortar), all Guns/TL9 skills, Knife.

Spy — 80 points

Battles are expensive; far better if the same result can be achieved in other ways. That's where you come in. You gather intelligence; you sabotage equipment. If you do your job right, battles can be won without a shot being fired. This template can represent an agent of any of the intelligence services in the world.

Attributes: ST 10 [0], DX 12 [20], IQ 14 [45], HT 10 [0].

Advantages: A total of 20 points chosen from Alertness [5/level], Alternate Identity [15], Appearance [5 or 15], Charisma [5/level], Collected or Imperturbable [5 or 10], Combat Reflexes [15], Contacts [varies], Danger Sense [15], Intuition [15], Language Talent [2/level], Luck [15], Military Rank [5/level], Sanctity [5], Security Clearance [2 or 5/level], Strong Will [4/level], and Voice [10].

Disadvantages: Duty [-5], Secret (Spy) [-5], and -20 points chosen from Curious [-5 to -15], Enemy [varies], Insomniac [-10 or -15], Lecherousness [-15], Light Sleeper [-5], Nightmares [-5], Overconfidence [-10], Paranoia [-10], Sense of Duty (nation) [-10], and Trademark [-1 to -15]. Higher levels of Duty (up to Extremely Hazardous Duty, -20) or Secret (up to -20) may be taken as well, depending on the spy's assignment.

Primary Skills: Acting (M/A) IQ [2]-14, Diplomacy (M/H) IQ-1 [2]-13, Fast-Talk (M/A) IQ [2]-14, and Stealth (P/A) DX [2]-12

Secondary Skills: Computer Operation/TL9 (M/E) IQ [1]-14, Electronics Operation/TL9 (Security Systems) (M/A) IQ-1 [1]-13, Savoir-Faire (M/E) IQ-1 [1/2]-13, Shadowing (M/A) IQ-1 [1]-13, 4 points in Combat/Weapons skills, and 4 points in Language skills.

Background Skills: Driving/TL9 (any) (P/A) DX-2 [1/2]-10 and 5 points from any *one* of the following lists:

Social: Disguise, Politics, Speed-Reading (all M/A); Sex Appeal (M/A; HT); Forgery/TL9, and Poisons (both M/H).

Physical: Climbing (P/A); Camouflage (M/E); Demolition/TL9, Holdout, Lockpicking/TL9, Traps/TL9 (all M/A).

Mental: Cryptanalysis/TL9, Intelligence Analysis, SIGINT Collection/Jamming/TL9 (all M/H); Computer Hacking/TL9, and Conspiracy Theory (both M/VH).

Survivor — 70 points

Maybe it was last week, maybe last century when the war came to your home – but when it left, everything was different. You survive in the ashes of a fallen civilization, scrounging for equipment, forcing things to grow in poisoned ground, and living in fear that the war will come again. This template can be used for anyone who has had time to adapt to post-civilization conditions. For a newly minted survivor, build an ordinary citizen, or choose one of the other templates, and drop him into the rubble. If he lives, you've got a survivor!

Attributes: ST 11 [10], DX 12 [20], IQ 12 [20], HT 12 [20].

Advantages: A total of 10 points chosen from Absolute Direction [5], one or more Acute Senses [2/level], Alertness [5/level], Animal Empathy [5], Disease Resistant or Immunity to Disease [5 or 10], Hard to Kill 1 [5], Night Vision [10], Rapid Healing [5], and Toughness (DR 1) [10].

Disadvantages: Poor [-15], and -20 points chosen from Berserk [-15], Compulsive Hoarding [-5], Illiteracy or Semi-Literacy [-10 or -5], Paranoia [-10], Phobia (any) [varies], Shyness [-5 to -15], and Skinny [-5]. You may spend half the -20 by increasing Poor to Dead Broke [-25]. Many physical disadvantages (too many to list here) are also legitimate; browse pp. B27-29 and choose what you like.

Primary Skills: Area Knowledge (local area) (M/E) IQ+1 [2]-13, First Aid/TL? (M/E) IQ+1 [2]-13, Scrounging (M/E) IQ+1 [2]-13, Survival (Radioactive) (M/A) IQ [2]-12, and Survival (other) (M/A) IQ [2]-12.

Secondary Skills: Bow (P/H) DX-2 [1]-10, Brawling (P/E) DX [1]-12, Camouflage (M/E) IQ [1]-12, Cooking (M/E) IQ [1]-12, Hiking (P/A) DX-1 [1]-11, Knife (P/E) DX [1]-12, Naturalist (M/H) IQ-2 [1]-10, Stealth (P/A) DX-1 [1]-11, Tracking (M/A) IQ-1 [1]-11, and Traps/TL? (M/A) IQ-1 [1]-11.

Background Skills: A total of 5 points chosen from a professional skill, Distilling, Intimidation, Mechanic/TL?, Survival (other) (all M/A); Animal Handling (M/H); Guns/TL? (any) (P/E); Climbing, Spear (both P/A); and Mimicry (P/H; HT).

Note: For TL skills, effective TL can vary widely. Someone may have the training for First Aid/TL9, but only have access to TL3 first-aid supplies! On the other hand, someone "self-taught" in First Aid, with access to modern supplies, may not be on the TL skill chart at all. TL skills for this template are labeled "TL?". The GM should use his judgment.

Tanker — 60 points

Big guns and thick armor can solve most problems. You're in charge of implementing the solutions. You and your crew drive a tank, the backbone of the army – and, by extension, the backbone of your nation. The GEV-jockeys may get more glory, but you've seen too many GEVs disintegrate under your guns to envy them.

Attributes: ST 10 [0], DX 12 [20], IQ 12 [20], HT 11 [10].

Advantages: A total of 15 points in any of Alertness [5/level], Ally Group (Fellow tankers) [varies], Combat Reflexes [15], Fearlessness [2/level], Fit or Very Fit [5 or 15], High Pain Threshold [10], Military Rank [5/level], Reputation (Decorated) [varies], and Toughness (DR 1) [10].

Disadvantages: Duty [-15], and -15 points chosen from Bloodlust [-10], Callous [-6], Chummy or Gregarious [-5 or -10], Code of Honor (Enlisted Man's) [-10], Fanaticism (nation) [-15], Hard of Hearing [-10], Intolerance (enemy nation) [-5], Overconfidence [-10], Post-Combat Shakes [-5], and Sense of Duty [-5 to -10].

Primary Skills: Guns/TL9 (Needler) (P/E) DX+3 [2]-15* and one of the following specialties:

Driver: Cartography/TL9 (M/A) IQ [2]-12, Driving/TL9 (Tracked) (P/A) DX+2 [8]-14, and Gunner/TL9 (Mortar) (P/A) DX+3 [4]-15*.

Gunner: Armoury/TL9 (Vehicular Weaponry) (M/A) IQ+2 [6]-14, Gunner/TL9 (Mortar) (P/A) DX+3 [4]-15*, and Gunner/TL9 (Railgun) (P/A) DX+3 [4]-15*.

Sensor Operator: Cartography/TL9 (M/A) IQ+1 [4]-13, Electronics Operation/TL9 (Sensors) (M/A) IQ+1[4]-13, SIGINT Collection/Jamming/TL9 (M/H) IQ+1 [6]-13.

Communications Operator: Electronics Operation/TL9 (Comm) (M/A) IQ+2 [6]-14 and Traffic Analysis/TL9 (M/H) IQ+2 [8]-14.

Secondary Skills: Mechanic/TL9 (NPU Engine) (M/A) IQ [2]-12, NBC Warfare/TL9 (M/A) IQ-1 [1]-11, and Savoir-Faire (Military) (M/E) IQ [1]-12.

Background Skills: Tactics (M/H) IQ-2 [1]-10, and a total of 4 points in any of First Aid/TL9, Scrounging (both M/E); Electronics Operation/TL9 (Comm), Forward Observer/TL9, Survival (any) (all M/A); Guns/TL9 (other) (P/E); Driving/TL9 (any other), and Gunner/TL9 (other) (both P/A).

* Includes +2 for IQ 12.

Note: A tank commander should take one of the primary skill options (preferably Sensor Operator or Communications Operator) and the Officer lens (p. 47) at Rank 3.

Underground Member 60 points

Your nation isn't what it was. Rights once taken for granted are gone; dissent is crushed. Most people don't care, so long as they're warm and fed. You do. You're a member of one of the many smoldering pre-revolutions around the world, from Quebec Libre, to The Home of the Brave, to the Cuckoos, to the Uzbekistani Liberation Front. Maybe a quick death awaits you . . . or maybe you can restore your beloved home to its former glory.

An underground member differs from a guerrilla in that the guerrilla is a member of an army in hiding, typically in a non-urban area. An underground member continues to pretend to be a member of society.

Attributes: ST 11 [10], DX 10 [0], IQ 12 [20], HT 10 [0].

Advantages: Ally Group (Large, 6 or less) [15], and 20 points chosen from Acute Hearing [2/level], Alternate Identity [15], Claim to Hospitality [5], Contacts [varies], Empathy [15], Night Vision [10], Sanctity [5], Strong Will [4/level], and Zeroed [10].

Disadvantages: Enemy (Law-enforcement agencies, 9 or less) *or* Secret (Imprisonment) [-20], and -15 points chosen from Bloodlust [-10], Cannot Harm Innocents [-10], Duty [varies], Edgy or Paranoia [-5 or -10], Fanaticism [-15], Obsession [-5 to -15], Selfless [-10], and Trademark [-1 to -15].

Primary Skills: Acting (M/A) IQ [2]-12, Area Knowledge (local city) (M/E) IQ+1 [2]-13, Electronics Operation/TL9 (Security Systems) (M/A) IQ [2]-12, Stealth (P/A) DX [2]-10, and Streetwise (M/A) IQ [2]-12.

Secondary Skills: A total of 10 points in any of Computer Operation/TL9, First Aid/TL9 (both M/E); Disguise, Electronics Operation/TL9, Fast-Talk, Holdout, Interrogation, Intimidation, Lockpicking/TL9, Shadowing (all M/A); Cryptography/TL9, Intelligence Analysis/TL9 (both M/H); Conspiracy Theory (M/VH); Brawling, and Guns/TL9 (any) (both P/E).

Background Skills: A total of 10 points in any of any professional skill, Demolition/TL9, Politics (all M/A); Computer Programming/TL9, Forgery/TL9, History, Philosophy, Poisons (all M/H); Computer Hacking/TL9 (M/VH); and Driving/TL9 (any) (P/A).

Military Lenses

A *lens* is a mini-template that you add to a regular template. The point total is equal to the cost of the base template plus the lens.

Non-Com +8 to +13 points

Sergeants and corporals are *non-commissioned officers* – NCOs or "non-coms." This lens can be applied to the Combat Engineer, Infantryman, Medic, or Tanker.

Military Rank 1 or 2 [5 or 10], 1 additional point in Savoir-Faire (Military) (M/E), and 2 points in any of Administration, Intimidation, Leadership, Politics (all M/A); and Tactics (M/H).

Officer +22 or more points

This lens is for commissioned officers – commanders of groups of 30 or more men, typically. This lens can be applied to the Combat Engineer, Infantryman, Medic, or Tanker. It is *not* compatible with the Non-Com lens; apply one or the other, not both!

Military Rank 3+ [5/level], 3 additional points in Savoir-Faire (Military) (M/E), 2 points in Strategy *or* Tactics (both M/H), and 2 points in any of Administration, Intimidation, Leadership, and Politics (all M/A). Replace Code of Honor (Enlisted Man's) with Code of Honor (Officer's) in the list of disadvantages.

Marine Forces Operative +6 points

This lens represents a soldier trained in the use of a marine battlesuit. It can be applied to the Infantryman template, and it *may* be combined with the Non-Com or Officer lens.

Add Demolition/TL9 (M/A) IQ [2]-12, Swimming (P/E) DX+1 [2]-13, and Underwater Demolition/TL9 (M/A) IQ [2]-12.

Deserter -5 points

Whether due to cowardice in the face of the enemy, fragging an officer, or the development of a conscience, desertions happen. This lens may be applied to any military template, and represents a successful and canny fugitive.

Add 2 points in Acting (M/A), 2 points in Streetwise (M/A), 1 point in Disguise (M/A), and Enemy (Military and law-enforcement officials, 6 or less) [-10].

Ranks

Military ranks can be confusing to the uninitiated. This section is a pocket guide to rank structure in the major empires of the Last War. In Paneurope, rank systems vary from country to country. To maintain order, DefComm uses the French system as a "conversion guide"; every nation has to provide a translation between its ranks and French ranks, which are listed here. The Nihon Empire uses a slightly modified Western system, similar to the Combine, as does China.

(Note that this is a drastic simplification of a complex subject. Players and GMs wanting more realism in their military ranks may consult their local libraries.)

Enlisted Men

Military Rank 0 consists of privates and the most junior NCOs. For the Combine and Nihon, in ascending order, the ranks are Private (E1), Private (E2), Private First Class, Specialist, and Corporal. Corporals and Specialists are both E4s; the distinction is that Corporals only appear in infantry platoons and can serve in a squad command position. In Paneurope, the lowest army ranks are referred to simply as "Soldier." Above them are Caporal and Caporal-Chef.

Military Rank 1 is junior NCOs, who serve in or command squads. In the Combine, they are Sergeants and Staff Sergeants. In Paneurope, Rank 1 equals Sergent.

Military Rank 2 consists of senior NCOs. These soldiers are the backbone of the army, serving as advisors to officers and an interface between them and the enlisted men. For the Combine, the ranks are Sergeant First Class, Master Sergeant, 1st Sergeant, Sergeant Major, and Command Sergeant Major. Paneurope covers these ranks with different degrees of Sergent-Chef.

Officers

Military Rank 3 is the lowest level for commissioned officers. Serving as platoon commanders (or, rarely, a company), they include 1st and 2nd Lieutenants in the Combine, and the ranks of Aspirant, Sous-Lieutenant, and Lieutenant in Paneurope.

Military Rank 4 officers command companies or hold responsible staff positions. It is the highest recommended rank for a starting PC. In the Combine, it includes the ranks of Captain and Major; in Paneurope, Capitaine and Chef de Battailon.

Military Rank 5 is the rank of battalion commanders, comprising Lieutenant Colonels in both the Combine and Paneurope.

Military Rank 6 officers command brigades and regiments. In the Combine, they are Colonels; in Paneurope, they are Colonels and Généralsde Brigade.

Military Rank 7 includes (in the Combine) Brigadier Generals and Major Generals. (The mnemonic for remembering Combine general ranks is Be My Little General: Brigadier, Major, Lieutenant, full General.) They command divisions. The Paneuropean rank is Général de Division.

Military Rank 8 is the highest rank. These officers command several divisions, or an entire theater of operations. In the Combine, Lieutenant Generals and full Generals hold this rank. In Paneurope, the ranks are Général de Corps d'Armée and General d'Armée.

Tables of Organization

The Last War was one of the longest conflicts in human history. The forces which fought it ranged from the huge Combine military machine to tiny groups of scavengers in Africa and South America. This section gives a general review of unit organization, from squad and platoon up to brigade.

Infantry

This section covers the hierarchy of groups of soldiers.

Squad

Battlesuited infantry are organized into squads of three to seven troopers, commanded by a sergeant of Rank 1 (or, rarely, a corporal of Rank 0). A party of PCs is usually just the right size to be one squad.

Platoon

Infantry platoons are normally composed of three or four squads. The leader would be a lieutenant of Rank 3, assisted by a sergeant of Rank 2.

Mechanized infantry units include one GEV-PC per platoon; regular infantry use hovertrucks to get near the battle, and their own jets to enter combat. The precise composition of each squad or platoon varies between forces; for instance, a Scout platoon would be equipped with ranger battlesuits.

Company

The next-largest standard infantry formation is the company. A Combine company (and most Paneuropean or Nihon ones) has four platoons. A company is commanded by an officer of Rank 4 (or, when necessary, Rank 3). Infantry companies might be attached to large armor units as support, or might make up parts of infantry battalions, but would rarely operate independently.

Battalion

A battalion is the smallest infantry formation that would normally operate independently. This is also the *largest* formation usually composed of specialist troops (e.g., combat engineers); there are no "engineer regiments" or "engineer divisions." Most battalions include three companies.

A Combine battalion is commanded by an officer of Rank 5; he is almost always a battlesuit trooper, but is expected to lead from somewhere other than the front line. A normal battalion would have a hovertruck for the use of the major and his small staff (adjutant, com-tech, etc.) and another for the squad of mechanics who keep the battlesuits working.

Regiment

An infantry regiment normally includes four battalions, but it is not unusual to find three or five. A regiment is commanded by a Rank 6 officer. This is the largest formation composed more or less exclusively of infantry.

A standard regiment includes four standard battalions, plus a few hovertrucks for the headquarters transport section. Many regiments have a few armor units as part of "headquarters company."

Armor

This section covers the organization of armor units, including GEVs and howitzers.

Platoon, Troop, or Lance

The smallest operational armor grouping is the platoon (Combine) or troop or lance (Paneurope). This is a group of three (sometimes four) units of the same type. Thus, a standard heavy tank platoon contains three tanks. It is unusual for a fighting vehicle to be commanded by anyone below Rank 3, and a troop commander would be Rank 4.

If the vehicles are small (LGEVs, for example), a PC party could be an entire armor platoon. Platoons composed of larger vehicles would have to be filled out with NPCs.

Squadron

Some armor companies are organized by squadron rather than platoon; a squadron is a reinforced platoon. Squadrons normally contain five vehicles, not necessarily of the same type but capable of mutual support. For instance, three LGEVs and two GEVs might make a squadron, or one superheavy and four heavies. Units of widely differing speeds wouldn't be teamed. Rank of commanders is as for a platoon.

Battery

The standard artillery grouping is a "battery" of either two or three howitzers or mobile howitzers. Each unit is normally served by a hovertruck or, in an area with a good road net, a truck.

Section

Reconnaissance and transport vehicles are organized into sections, which could be anything from three to six vehicles of the same or similar type.

Company

Armor companies vary more in size than overall strength. The more powerful the individual units, the fewer platoons are found in a company. A standard Paneuropean superheavy company, for instance, includes only three troops of three vehicles each. A Combine company of LGEVs, on the other hand, contains eight three-vehicle platoons.

Many companies, especially in Paneuropean and Chinese forces, include several different types of vehicle, divided either into same-type platoons or similar-type squadrons. Toward the end of the Last War, "company" meant little more than "around a dozen armored vehicles under one leader."

Any armor company would include at least one support section – mechanics, communication techs, supply sergeant, and so on, generally in hovertrucks.

The company commander would usually be in the upper grades of Rank 4.

Battalion

An armor battalion is almost always a combined-arms force, including at least one GEV company and at least one company of heavy armor – unless, of course, the component companies are themselves of mixed unit types. It is not unusual for a battalion to include an infantry company, as well. There will almost always be artillery. The number of companies varies – usually four or five, sometimes three or six.

An armored battalion is typically commanded by a Rank 5 officer. It will have significant support staff: usually two transport sections, in addition to the transport assigned the individual companies.

Regiment

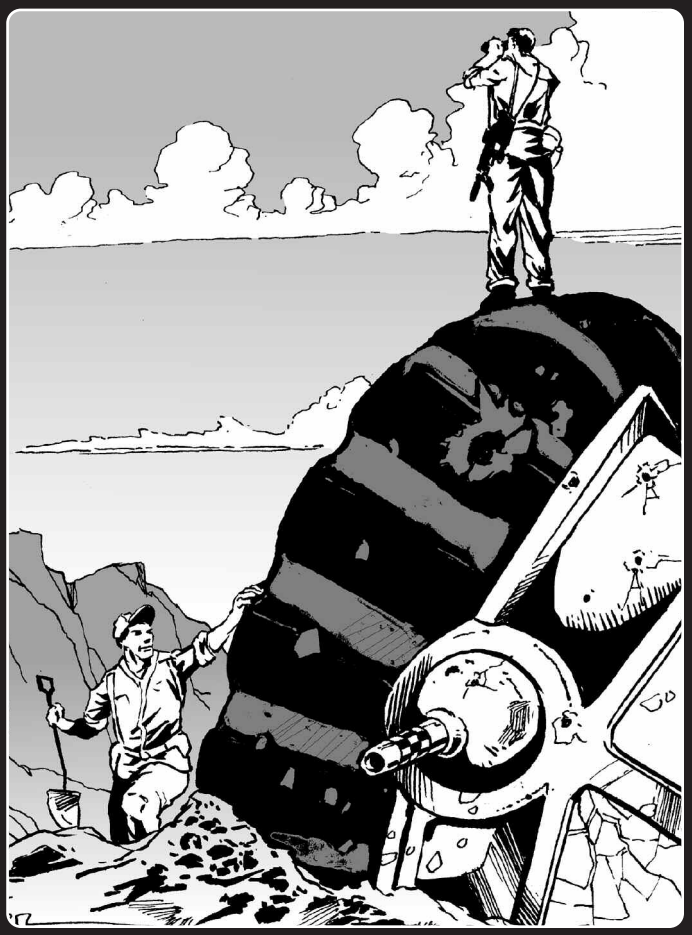
An armored regiment normally includes four battalions plus a separate headquarters company. A unit this massive will have a sizable support section – medics, comm-techs, mechanics, political and morale officers, intelligence units, and so on. Often there will be at least one attached platoon of combat engineers, if not a full company. A regiment should be capable of completely independent operation in the field.

A regiment is commanded by an officer of Rank 6. It would be very unusual for an "armored" regiment to be made up entirely of armor; at least one battalion would be mechanized (GEV-mounted) infantry.

Brigade

A brigade is a unit equal to a reinforced regiment. The Combine used the "brigade" designation only for units created for specific operations, usually incorporating portions of several regiments. Paneurope and China both had permanent units designated as "brigades," typically the size of two regiments, without the duplicate command and support elements. Nihon used nothing at all comparable.

The term "brigade" was also used by the Combine, Paneurope, and Paneuropean allies to designate some units composed entirely of Ogres.



Larger Formations

Above brigades and regiments are divisions, corps, and armies. Divisions are made up of three regiments and support troops, and are commanded by a Rank 7 officer. A corps is two or more divisions, commanded by a Rank 8 officer. (The term "corps" is also used to designate a separate branch of the armed forces with a specific function, such as the Signal Corps. The two should not be confused.) An army is a single portion of the total armed forces of a nation or empire; Paneurope has five armies (see p. 29), the Combine has eight. From the division level up, most formations are combined-arms, including both infantry and armor. A discussion of how Ogres fit into military tables of organization is on p. 90.

Job Table

Job (requirements), Monthly Income	*Success Roll*	*Critical Failure*
Poor Jobs		
Panhandler* (Panhandling), $20 × PR	PR	1d/4d
Survivor* (Survival (any)), $25 × PR	PR	2d/6d
Welfare Recipient (no qualifications), $250 plus $25 per dependent, maximum $400	IQ	-1i/dropped from rolls; reapply in 3 months
Struggling Jobs		
Factory Worker (none), $350	IQ	-1i/LJ
General Laborer (ST 10+), $600	PR	LJ/5d
Infantryman (Guns/TL9 (any) 12+, Rank 0-2), $200 (living expenses provided)	PR-2	4d/10d
Translator (two non-native languages at 12+), $60 × skill	Best PR-2	-2i/-3i, LJ
Writer* (Writing 12+), $50 × skill	PR	-2i/-3i
Average Jobs		
Computer Cracker (Computer Hacking 12+, Electronics Operation (Security Systems) 12+), $1,000	Best PR-4	-2i/-2i, jailed
GEV-Jockey (Driving/TL9 (Hovercraft) 12+, Military Rank 3-4, Gunner/TL9 (Railgun) 11+), $600 (living expenses provided)	Worst PR-2	-2i, 4d/10d
Government Worker (Administration 12+), $1,000	PR	-1i/LJ
Low-Grade Military Officer (Guns/TL9 (any) 12+, Military Rank 3-4, Leadership 11+), $500 (living expenses provided)	Worst PR-2	-2i, 3d/8d
Low-Level Spy (Fast-Talk, Research, and Stealth), $100 × Worst PR	Worst PR	4d/LJ, jailed
Mechanic/Technician (any Mechanic/TL9 skill at 12+), $80 × skill	PR	-1i/-1i, LJ, 2d
Policeman (Guns/TL9 (any) 12+, PS: Law Enforcement 10+, Streetwise 11+), $800	Law Enf.	3d/LJ, 8d
Skilled Laborer (any Craft skill 12+), $750	PR	LJ/LJ, 3d†
Lab Assistant or Tech Worker (Computer Operation 10+, Research 11+, any Science skill 10+), $100 × Worst PR-6	Worst PR	-2i/LJ, 2d
Tanker (Driving/TL9 (Tracked) 12+, Military Rank 0-3, Gunner/TL9 (Mortar) 11+), $500 (living expenses provided)	Worst PR-2	-3i, 3d/8d
Comfortable Jobs		
Black Marketeer* (Streetwise 12+, 10+), $300 × Worst PR	Streetwise	-3i/-5i, arrested
Doctor (Physician 13+, Status 0+), $350 × PR	PR	-3i/-10i, lose license
Engineer (any Engineer or Electronics skill at 12+), $200 × PR	PR	-2i/-4i, LJ
Field-Grade Military Officer (Military Rank 5-6, Guns/TL9 12+, Leadership 12+, Administration 12+, Tactics 11+), $1,500 (living expenses provided)	Worst PR-2	-3i/LJ, 6d
Mid-Level Spy (Diplomacy, Intelligence Analysis, and Research), $375 × Worst PR	Worst PR	-6i/LJ
Politician** (Politics 12+, Acting 10+, Administration 10+), $2,000	Worst PR-1	-3i/LJ
Scientist (Computer Operation/TL9 12+, Research 13+, any Science skill 14+), $300 × best Science skill	Worst PR	-2i/LJ, 2d†
Software Engineer (Computer Programming/TL9 13+), $300 × PR	PR	-2i/LJ
Wealthy Jobs		
Cyberneticist (Artificial Intelligence/TL9 13+, Computer Programming/TL9 12+), $500 × best PR	Best PR	-2i/-3i, LJ
High-Grade Military Officer (Military Rank 7+, Leadership 13+, Administration 13+, Strategy 11+), $4,000 (living expenses provided)	Worst PR	-2i, 2d/-4i, 2d, LJ
Surgeon (Physician, Diagnosis, Surgery, all 14+), $500 × best PR	Worst PR	-3i/-6i, LJ

Key to Table

* Freelance jobs.

** This is an "employed" job, but treat income as for a freelancer.

† If the laborer or scientist works in a field where injury is very unlikely (e.g., history), replace the damage with "-3i."

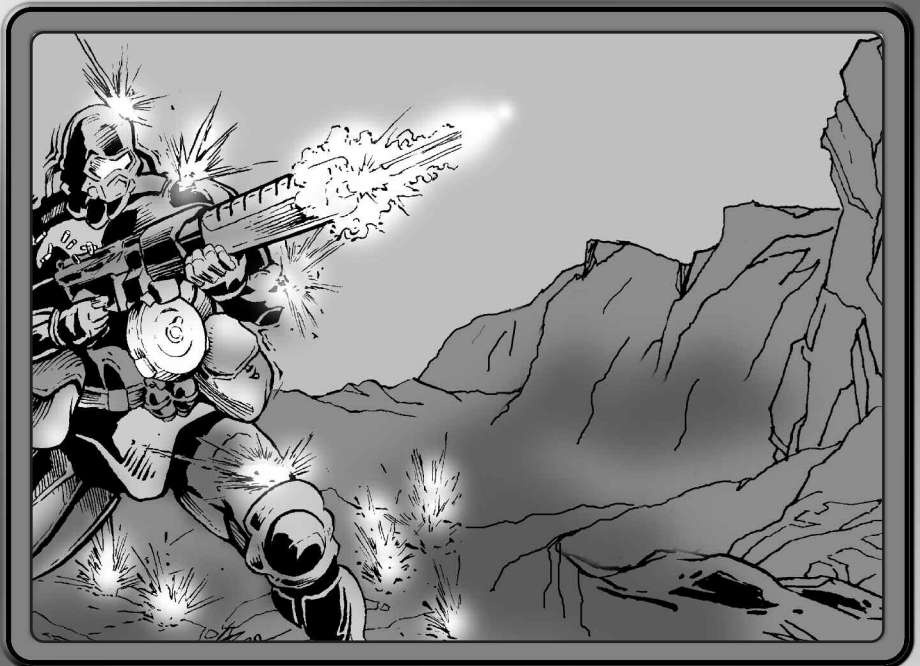
> 4.0 PERSONAL
> HARDWARE
> BEGIN

DISPLAY

>INFANTRY
>SCREEN HAS
>COME UNDER
>FIRE FROM
>LIGHT WEAPONS

>EITHER THAT'S
>ALL THEY HAVE
>LEFT OR THIS
>IS A TRAP

>MOVE UP
>ASSAULT SUITS
>BUT DO NOT,
>REPEAT DO NOT
>COMMIT ARMOR
>UNTIL ENEMY
>STRENGTH IS
>DETERMINED



"What was Amsterdam like, before?"

" 'Before?' It was the city where Europe let its hair down. It was the city that never forgot the 20th century. It was a lot of fun. It was also the location of a major Combine supply depot for the Netherlands, which should be around here somewhere, so less talk, more looking, 'kay?"

" 'Kay."

The man and his daughter scrounged through the rubble and ash. They didn't live in the city – there were still parts too radioactive for long-term residency – but their community in nearby Purmerend was threatened by raiders, and they'd been sent to find something that could help. The building they were in had once been heavily armored, and now was partially open to the cloudy sky.

"What's this?"

"Military rations. Probably still edible, but not much good against bullets."

"I found a gun!"

"Hmm, yep, 5mm heavy gauss gun. Looks to be in good shape. We might be able to use it."

"Might?"

"Yah, 'might.' It needs to be plugged into a power supply, and it has a custom plug. We'd need to splice a new connector onto the end of the cable, and pray we can find something reasonably portable that'll put out the right kind of juice. Once we've done that, ***then*** *we still need ammo."*

"What's the gun ***supposed*** *to plug into?"*

"A battlesuit."

"Oh. Like this one?"

"Eh?"

She was pointing into the gloom at a dusty suit of armor, like something a knight would wear. A very big knight.

"Sweet Jesus and Mary. It looks intact."

"There's still a light here on the neck."

"Yup, that's a power indicator. Seems like it's held a charge. What's this on the side?"

". . . Well?"

"Patience, daughter. It's a winch. This isn't just a battlesuit – it's a combat engineer suit. They made a few suits that were faster or tougher, but none more useful."

"Cool. Can I try it on?"

"When you're older, dear."

This chapter covers personal equipment, including military weapons and battlesuits, and various civilian gear useful in a "survivors" campaign.

Battlesuits

The suits listed here are all Paneuropean, from the latter half of the 21st century. They are TL9, and compatible with ***GURPS Mecha*** and ***GURPS Vehicles,*** *Second Edition*. They can also serve as Combine battlesuits, though Combine suits are (on average) slightly heavier and somewhat less well-armored.

All of the suits have a Complexity 3 computer with a HUD display on the faceplate. The interior is very cramped but not quite skin-tight. By undoing a few straps and making a DX roll, a soldier can pull his arms into the chest cavity and scratch annoying itches, when necessary. (Putting his arms *back* into the suit arms also requires a DX roll, especially if he is hurried.) Battlesuits are rated for pilot weight; the suits here are all designed for someone weighing no more than 175 lbs. and no less than 140 lbs.

Suits are fitted to their wearers. This must be redone each time a new person wears the suit. It takes two hours, and requires an Armoury (Battlesuit) roll at +2. The intended occupant must be present (and patient!), and may not be the person making the Armoury roll. Failure on the roll means two more hours are required; a critical failure does minor damage to the suit, necessitating a Mechanic roll.

A person wearing a battlesuit cannot wear heavy clothing; typically a tight coverall similar to a pilot's jumpsuit is worn. A battlesuit takes 4 minutes to put on and 2 to take off. Most suits open at the back and hinge forward slightly, allowing the user to step into the legs, then stick his head and arms into the rest of the suit and pull it closed. A battlesuit can be locked and sealed without help, but military procedure requires a helper on the outside to confirm the locking process.

Once in the suit, the wearer can expect to stay there for a while. After getting a platoon into their suits and out into the field, command wants to get as much use out of them as possible. Soldiers are expected to eat and sleep in their suits. The *minimum* time spent in a suit averages around six hours for a routine patrol. If a continuous presence is required at a key site and there aren't enough troops to hold it in shifts, a soldier will be expected to stay in armor for days. Stints over a week are rare, but not unknown. Battlesuit troops will load their suit computer with entertainment – movies, books, games – to keep from going stir-crazy.

A suit's internal NPU does not power the flight fans or the weapons; both of those systems run on batteries. The NPU can recharge the batteries – very slowly. It is much more common for soldiers running low to plug their suits into a friendly vehicle for a quick charge.

Battlesuit Components

The following components are often found in battlesuits.

NBC Kit, Limited Lifesystem: The NBC kit filters nuclear, biological, and chemical contaminants out of outside air. Thus, the six-hour lifesystem air supply is only used if the suit is actually cut off from air (e.g., underwater, in space, completely buried). The kit also includes sensors that detect and classify radiation and known contaminants.

What's a "Template"?

A template consists of detailed data files containing the blueprints and construction methods for a given item (e.g., a gun, a blender, an Ogre), the molds for non-standard parts, the custom tools to build it – and sometimes the tools necessary to make the tools.

The data capacity needed to hold the informational portion of a template is the same as the examples given on p. UT34, including the factor of 100 for actual blueprints and minifac instructions: 100 gigs for an Ogre, 0.01 gig for a radio. When shipped as cargo, the physical components will weigh and occupy *twice* as much space or volume as the item itself.

In use, these parts will be scattered over the production line. Upon acquiring a template, a factory of sufficient size can begin production of the item within a day for an item weighing 1 lb. or less, two days if it's less than 10 lbs., three days for less than 100 lbs., etc. (E.g., prepping to build the chassis of a 5-million-pound Ogre would take 8 days.) This assumes the template isn't encrypted! The software portions of all military templates, and many civilian ones, were protected against unauthorized use. GMs should require Cryptanalysis rolls with substantial penalties for anyone trying to use templates he doesn't have authorization for.

If lost or damaged, the physical portions of a template can be recreated from the software; use the same formula as for "tooling up," but with months instead of days. If the software is partially corrupted, reconstructing the damaged portion will require the use of the appropriate design skill: Engineer (Guns) for guns, Electronics for a radio, etc. If the software portion is lost entirely, the physical components are next to useless.

The value of a template is relative. In a normal society, they are trade secrets, not available on the open market; corporations will pay 100 to 1,000,000 times the device's retail value for templates stolen from a rival corporation. In the world of the Factory States, the value of a template depends on how useful the device is, and on how common. There are a thousand templates for blenders out there, and who *really* needs one?

Trauma Maintenance System: This medical system uses biomedical sensors to monitor the user's vital signs, and transmits that data to a superior officer on request, via comsuite. The user can also call it up on his HUD. The data adds 2 to Diagnosis rolls made for the wearer. The system also includes an auto-injector and 10 doses of drugs. The user can manually trigger it, or it can be preset to inject a specific drug if vital signs warrant it. The trauma maintenance system has an A cell as a backup power supply in case suit power fails.

The drug loadout varies, but a typical mix is 1 dose Antirad, 2 doses Hypercoagulin, 1 dose Neurovine, 2 doses Painaway, 3 doses Quickheal, 1 dose Wideawake. Drugs are described on pp. 65-66.

Provisions: These concentrated food and water supplies are dispensed through nipples in the helmet. The food is in paste form. The texture is disconcerting but the taste is surprisingly good and varied, including beef, chicken, strawberry, apple, and chocolate. (Some soldiers consider these pastes a tasty – if expensive – treat, even when off-duty. 1 snack-size tube costs $10.)

Geophone: This seismic detector senses ground vibrations. It can be used to detect objects moving on the ground or to conduct rough analyses of the terrain. For example, by placing his hand on the ground and stamping with his foot, a combat engineer could determine if there was an underground cavern in the area on a successful Electronics Operation (Sensors) or Geology roll. A geophone can be used to determine the approximate distance, direction, mass, and speed of a moving object; it has Scan 11.

Basic Comsuite: This system includes a scrambled, medium-range radio, a laser communicator, a military GPS system, a radar/laser detector, and an IFF (Identify Friend or Foe) transponder. (See p. 61 for details on the comm systems.)

The GPS links up with friendly orbiting satellites to provide precise location data, accurate to about 5 yards. The GPS satellites survived the initial sky-clearing operations (p. 14), but began to be shot down in 2080. After that, more and more battlesuits replaced GPS with inertial navigation. The radar detector functions like the personal radar detector on p. 64; the laser detector will detect any laser pointed at the battlesuit out to that laser's maximum range. The IFF broadcasts an identifying signal whenever the suit is detected by friendly sensors.

Advanced Comsuite: This includes a scrambled, long-range radio, a laser communicator, a military GPS system, inertial navigation system, advanced laser/radar detector, and IFF.

The advanced laser/radar detector functions like the one in the basic comsuite, but can also identify the distance and direction to the sensor, and identify known types. The inertial nav system provides location info based on movements from a preset point, star tracking, etc., and effectively provides the Absolute Direction advantage (p. B19).

Compact Winch: This is a smaller, more expensive variant of the standard TL8+ winch (pp. VE66-67). Multiply ST of the winch by 20 to get maximum lift; the standard rules for dragging, etc., from p. B89 apply. Winch speed is 2 yards/second, or 4 yards/second if pulling less than half maximum weight. For every 10 points of ST pulling power, a compact winch costs $1,000, weighs 7.5 lbs., occupies 0.15 cf, and consumes 0.05 kW of power. Cable length is equal to half ST in yards.

Plasma Torch: This cutting torch operates by forcing compressed gas through an electrical arc, producing a jet of plasma. It eventually cuts through even the toughest materials when held steady. Whether or not it penetrates DR, every 10 hits of damage reduces DR by 1, allowing it to burn through sooner or later. It does 7d cutting damage and contains enough gas for 5 minutes of operation. A full resupply of gas is $5 and 5 lbs. It cannot be used as a ranged weapon.

(Note that this is a variant of the plasma torch presented in ***GURPS Ultra-Tech 2,*** used in settings where flamer technology is primitive. The standard TL9 plasma torch requires no gas supply.)

Fire Extinguisher: This sprays a fire-retardant foam that extinguishes 1 hex of fire on a roll of 1-4 on 1d at a 5-yard range. It holds 8 charges; a reload is $12 and 1 lb.

3-Way Spray Tank: This is a more complex version of the spray tank from p. RO29. It has three separate, selectable tanks. Engineers usually carry water, slipspray (p. 66), and a corrosive (use the rules on p. VE122). Each tank holds 30 doses; one dose can coat a hex. It has a range of 10 yards. The 3-Way Spray Tank costs $125, weighs 9 lbs., occupies 0.45 cf, and consumes negligible power.

PESA, Distortion Jammers, and Emission Cloaking: These technologies are described on pp. 103-104.

Typical Loadouts

A trooper in a standard or command battlesuit will carry a 3mm gauss gun and a 100mm HEAT launcher. Rangers and marines may carry the same gear or equipment specialized for the mission. A trooper in an assault suit carries a 5mm heavy gauss gun and a 100mm HEAT launcher. A combat engineer will carry the same gear, some PLASTEX-B, some spare rope, tools, a power shovel, and possibly a satchel nuke. All soldiers carry an emergency survival kit (see p. 63).

These loadouts are just recommendations, and are neither restrictive nor exhaustive. Even the Combine allows battle-seasoned troops to use some judgment about what weapons suit them best.

A suit's computer has, at a minimum, Datalink (C1), Targeting +4 (C3), and a vehicle recognition manual, at a cost of $3,200. Command and ranger suits sometimes also have Transmission Profiling (C3) for $4,000.

Standard Infantry Battlesuit

This typical battlesuit can keep a soldier alive for days in a contaminated war zone, and provides him with formidable strength and defenses.

- **Subassemblies:** Two manipulator arms, two legs, limited-rotation turret, one pod (on back).
- **Propulsion:** 4 kW motive power leg drivetrain in legs. Ducted fan with 1,560 lbs. thrust in pod.
- **Arm Motors:** ST 50 motor per arm.
- **Battlesuit System:** Pilot weight 175 lbs., pilot occupies body, turret, arms, and legs.
- **Battlesuit Upgrades:** Complexity 3 suit computer, limited lifesystem with 6 hours air, NBC kit, trauma maintenance system, and 5 days provisions (in body). Provisions can easily stretch to 10 days if pilot goes on half rations.
- **Instruments and Electronics:** *Communicator:* Basic comsuite in body. *Sensors:* 10-mile PESA with Scan 17 in turret facing forward. 2.5-mile PESA with Scan 13 in turret facing backward. *Electronic Countermeasures:* Distortion jammer (Jam rating 4) in body.
- **Power:** 10 kW NPU in body powers all systems except ducted fans, with 3.65 kW left for recharging energy banks (at 219 kWs per minute). Lasts 1 year. *Energy Bank:* Rechargeable power cell #1 in pod stores 1,404,000 kWs for ducted fans (1-hour flight duration). Rechargeable power cell #2 in body stores 150,000 kWs for external weapons. Banks are cross-connected for emergencies.
- **Cargo Space:** 1 cf in each arm, 2 cf in body.
- **Volumes:** Body 7.2 cf, turret 1.0 cf, each arm 1.4 cf, each leg 2.4 cf, pod 3.7 cf.
- **Structure:** Heavy frame, advanced materials.
- **Hit Points:** Body 66 HP, turret 18 HP, each arm 48 HP, each leg 33 HP, pod 42 HP.
- **Armor:** Body and turret: PD 4, DR 100. Arms and legs: PD 4, DR 80. Pod: PD 4, DR 80.
- **Surface Features:** Sealed, basic emission cloaking, radiation shielding (PF 1,000).
- **Statistics:** Loaded weight 1,531 lbs. (including 150 lbs. of external weapons, 20 lbs. in cargo, and 175-lb. occupant). Empty weight 1,186 lbs. Loaded mass 0.77 tons. Suit volume 19.5 cf. Size modifier +1, body +0, turret -2, arms -1, legs -1, pod +0. Price $329,870. HT 12.
- **ST and Reach:** Body ST 132, arm ST 50 each (reach 1, damage thr 5d+2, sw 8d-1).
- **Dimensions:** 2.5 yards tall, 1 yard wide and long.
- **Aerial Performance:** Flight-capable, can hover. Effective motive thrust 29 lbs. (assuming standard load). Lift ST 2. Aerodynamic drag 80. Speed 50 mph, aMR 4.5, aSR 3, Move 25.
- **Ground Performance:** Speed 18 mph, gMR 3, gSR 1, Move 9. Jump-capable.
- **AUCS Statistics:** aScan -8, aPSig -8.

Ranger Battlesuit

This is an improved version of the standard suit, using the same frame, outer shell, and many of the same components. The turret is slightly larger and the pod is bigger to house the more powerful ducted fans. The ranger suit is intended for raiding and reconnaissance, and has enhanced ECM features. Only the sections with changed stats are listed here.

- **Propulsion:** Ducted fan with 1,930 lbs. thrust in pod.
- **Instruments and Electronics:** *Sensors:* 20-mile PESA with Scan 19 in turret facing forward. 5-mile PESA with Scan 15 in turret facing backward. *Electronic Countermeasures:* Distortion jammer (Jam rating 6) in body.
- **Power:** 10 kW NPU in body powers all systems except ducted fans, with 2.15 kW left for recharging energy banks (at 129 kWs per minute). Lasts 1 year. *Energy Bank:* Rechargeable power cell #1 in pod stores 3,474,000 kWs for ducted fans (2-hour flight

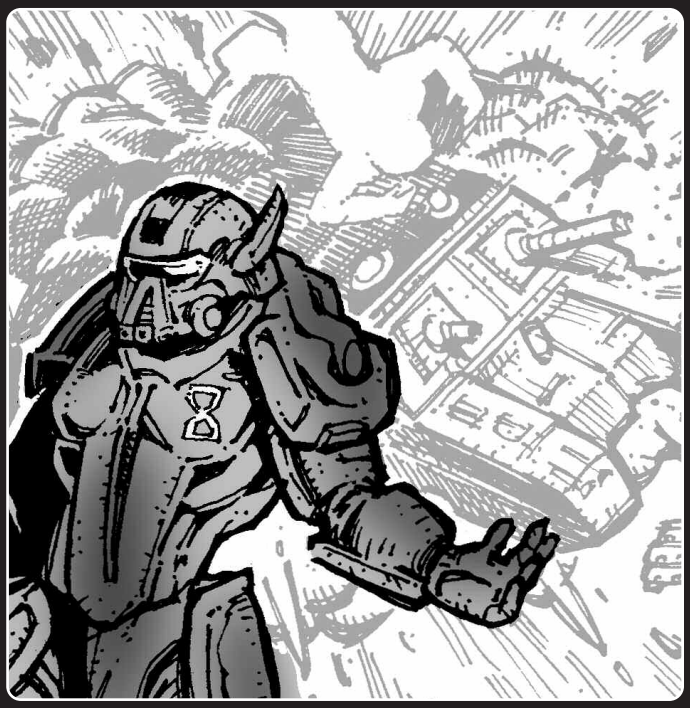
duration). Rechargeable power cell #2 in body stores 150,000 kWs for external weapons. Banks are cross-connected for emergencies.

- **Cargo Space:** 1 cf in each arm, 1.5 cf in body.
- **Volumes:** Body 7.2 cf, turret 1.5 cf, each arm 1.4 cf, each leg 2.4 cf, pod 5.8 cf.
- **Structure:** Heavy frame, advanced materials.
- **Hit Points:** Body 66 HP, turret 24 HP, each arm 48 HP, each leg 33 HP, pod 57 HP.
- **Surface Features:** Sealed, radical emission cloaking, radiation shielding (PF 1,000).
- **Statistics:** Loaded weight 1,856 lbs. (including 150 lbs. of external weapons, 20 lbs. in cargo, and 175 lb. occupant). Empty weight 1,511 lbs. Loaded mass 0.93 tons. Suit volume 22.1 cf. Size modifier +1, body +0, turret -1, arms -1, legs -1, pod +0. Price $530,263. HT 12.
- **Aerial Performance:** Flight-capable, can hover. Effective motive thrust 74 lbs. (assuming standard load). Lift ST 5. Aerodynamic drag 87. Speed 80 mph, aMR 4.5, aSR 3, Move 40.
- **Ground Performance:** Speed 17 mph, gMR 3, gSR 1, Move 8. Jump-capable.
- **AUCS Statistics:** aScan -6, aPSig -16.

Marine Battlesuit

This is another variation on the standard suit, equipped to maneuver underwater. The major changes are to the pod (adding a hydrojet), and a distinctive bulbous turret incorporating sonar. Again, only the sections with changed stats are listed.

- **Propulsion:** Ducted fan with 1,830 lbs. thrust in pod. Hydrojet with 2,100 lbs. thrust in pod.
- **Instruments and Electronics:** *Sensors:* 10-mile PESA with Scan 17 in turret facing forward. 2.5-mile PESA with Scan 13 in turret facing backward. 1-mile active/passive sonar with Scan 11 in turret.
- **Power:** 10 kW NPU in body powers all systems except ducted fans and hydrojet, with 1.15 kW left for recharging energy banks (at 69 kWs per minute). Lasts 1 year. *Energy Bank:* Rechargeable power cell #1 in pod stores 1,647,000 kWs for ducted fans and hydrojet (1-hour flight duration or 4.4-hour underwater thrust duration). Rechargeable power cell #2 in body stores 150,000 kWs for external weapons. Banks are cross-connected for emergencies.
- **Volumes:** Body 7.2 cf, turret 1.6 cf, each arm 1.4 cf, each leg 2.4 cf, pod 6.8 cf.
- **Structure:** Heavy frame, advanced materials.
- **Hit Points:** Body 66 HP, turret 24 HP, each arm 48 HP, each leg 33 HP, pod 66 HP.
- **Statistics:** Loaded weight 1,792 lbs. (including 150 lbs. of external weapons, 20 lbs. in cargo, and 175-lb. occupant). Empty weight 1,447 lbs. Loaded mass 0.90 tons. Suit volume 23.2 cf. Size modifier +1, body +0, turret -1, arms -1, legs -1, pod +0. Price $354,288. HT 12.
- **Dimensions:** 2.6 yards tall, 1 yard wide and long.
- **Aerial Performance:** Flight-capable, can hover. Effective motive thrust 38 lbs. (assuming standard load). Lift ST 3. Aerodynamic drag 90. Speed 55 mph, aMR 4.5, aSR 3, Move 27.
- **Ground Performance:** Speed 17 mph, gMR 3, gSR 1, Move 8. Jump-capable.
- **Underwater Performance:** Hydrodynamic drag 147. Speed 15 mph, uMR 1, uSR 4, Move 7, crush depth 900 yards.
- **AUCS Statistics:** aScan -8, aPSig -8.



Assault Battlesuit

This is a bigger, bulkier suit, more costly but more effective in battle. It does not share a frame with the standard suit, so most of the parts are not interchangeable.

- **Subassemblies:** Two manipulator arms, two legs, limited-rotation turret, one pod (on back).
- **Propulsion:** 5 kW motive power leg drivetrain in legs. Ducted fan with 1,850 lbs. thrust in pod.
- **Arm Motors:** ST 75 motor per arm.
- **Battlesuit System:** Pilot weight 175 lbs.; pilot occupies body, turret, arms, and legs.
- **Battlesuit Upgrades:** Complexity 3 suit computer, limited lifesystem with 6 hours air, NBC kit, trauma maintenance system, and 5 days provisions (in body). Provisions can easily stretch to 10 days if pilot goes on half rations.
- **Instruments and Electronics:** *Communicator:* Basic comsuite in body. *Sensors:* 10-mile PESA with Scan 17 in turret facing forward. 2.5-mile PESA with Scan 13 in turret facing backward. *Electronic Countermeasures:* Distortion jammer (Jam rating 4) in body.

- **Power:** 12 kW NPU in body powers all systems except ducted fans, with 4.4 kW left for recharging energy banks (at 264 kWs per minute). Lasts 1 year. *Energy Bank:* Rechargeable power cell #1 in pod stores 1,665,000 kWs for ducted fans (1-hour flight duration). Rechargeable power cell #2 in body stores 200,000 kWs for external weapons. Banks are cross-connected for emergencies.
- **Cargo Space:** 1 cf in each arm, 2 cf in body.
- **Volumes:** Body 7.4 cf, turret 1.0 cf, each arm 1.5 cf, each leg 2.5 cf, pod 4.3 cf.
- **Structure:** Extra-heavy frame, advanced materials.
- **Hit Points:** Body 138 HP, turret 36 HP, each arm 96 HP, each leg 66 HP, pod 96 HP.
- **Armor:** Body and turret: PD 4, DR 125. Arms and legs: PD 4, DR 100. Pod: PD 4, DR 100.
- **Surface Features:** Sealed, basic emission cloaking, radiation shielding (PF 1,000).
- **Statistics:** Loaded weight 1,805 lbs. (including 200 lbs. of external weapons, 20 lbs. in cargo, and 175 lb. occupant). Empty weight 1,410 lbs. Loaded mass 0.90 tons. Suit volume 20.7 cf. Size modifier +1, body +0, turret -2, arms -1, legs -1, pod +0. Price $489,844. HT 12.
- **ST and Reach:** Body ST 276, arm ST 75 each (reach 1, damage thr 8d+2, sw 10d+2).
- **Dimensions:** 2.5 yards tall, 1 yard wide and long.
- **Aerial Performance:** Flight-capable, can hover. Effective motive thrust 45 lbs. (assuming standard load). Lift ST 3. Aerodynamic drag 83. Speed 65 mph, aMR 4.5, aSR 3, Move 32.
- **Ground Performance:** Speed 19 mph, gMR 3, gSR 1, Move 9. Jump-capable.
- **AUCS Statistics:** aScan -8, aPSig -8.

Combat Engineer Battlesuit

This suit is worn by combat engineers. It is based on the assault-suit frame, with several added gadgets. Only sections with changes are listed.

- **Propulsion:** Ducted fan with 2,060 lbs. thrust in pod.
- **Sensors:** 10-mile PESA with Scan 17 in turret facing forward. 2.5-mile PESA with Scan 13 in turret facing backward. 1-mile geophone with Scan 11 in right arm (palm).
- **Miscellaneous:** Plasma torch in right arm (index finger). Fire extinguisher in right arm (pinky). 3-way spray tank in left arm (nozzle in index finger). ST 150 compact winch in body (75 yards of cable).
- **Power:** 12 kW NPU in body powers all systems except ducted fans, with 3.65 kW left for recharging energy banks (at 219 kWs per minute). Lasts 1 year. *Energy Bank:* Rechargeable power cell #1 in pod stores 1,854,000 kWs for ducted fans (1-hour flight duration). Rechargeable power cell #2 in body stores 150,000 kWs for external weapons. Banks are cross-connected for emergencies.
- **Cargo Space:** 0.5 cf in each arm.
- **Volumes:** Body 7.4 cf, turret 1.0 cf, each arm 1.5 cf, each leg 2.5 cf, pod 4.8 cf.
- **Structure:** Extra-heavy frame, advanced materials.
- **Hit Points:** Body 138 HP, turret 36 HP, each arm 96 HP, each leg 66 HP, pod 102 HP.
- **Statistics:** Loaded weight 2,039 lbs. (including 250 lbs. of external weapons and gear, 20 lbs. in cargo, and 175 lb. occupant). Empty weight 1,594 lbs. Loaded mass 1.02 tons. Suit volume 21.2 cf. Size modifier +1, body +0, turret -2, arms -1, legs -1, pod +0. Price $520,142. HT 12.
- **Dimensions:** 2.5 yards tall, 1 yard wide and long.
- **Aerial Performance:** Flight-capable, can hover. Effective motive thrust 21 lbs. (assuming standard load). Lift ST 1. Aerodynamic drag 84. Speed 45 mph, aMR 4.5, aSR 3, Move 22.
- **Ground Performance:** Speed 18 mph, gMR 3, gSR 1, Move 9. Jump-capable.
- **AUCS Statistics:** aScan -8, aPSig -8.

Command Battlesuit

This is the suit worn by field officers in battle. Based on the assault battlesuit, it has improved sensors, ECM, and comsuite. Only sections with changes are listed.

- **Propulsion:** Ducted fan with 1,890 lbs. thrust in pod.
- **Instruments and Electronics:** *Communicator:* Advanced comsuite in body. *Sensors:* 20-mile PESA with Scan 19 in turret facing forward. 5-mile PESA with Scan 15 in turret facing backward. *Electronic Countermeasures:* Distortion jammer (Jam rating 6) in body.
- **Power:** 12 kW NPU in body powers all systems except ducted fans, with 2.86 kW left for recharging energy banks (at 172 kWs per minute). Lasts 1 year. *Energy Bank:* Rechargeable power cell #1 in pod stores 1,701,000 kWs for ducted fans (1-hour flight duration). Rechargeable power cell #2 in body stores 150,000 kWs for external weapons. Banks are cross-connected for emergencies.
- **Cargo Space:** 1 cf in each arm, 1 cf in body.
- **Volumes:** Body 7.4 cf, turret 1.5 cf, each arm 1.5 cf, each leg 2.5 cf, pod 4.4 cf.
- **Structure:** Extra-heavy frame, advanced materials.
- **Hit Points:** Body 138 HP, turret 48 HP, each arm 96 HP, each leg 66 HP, pod 96 HP.
- **Statistics:** Loaded weight 1,841 lbs. (including 150 lbs. of external weapons, 20 lbs. in cargo, and 175 lb. occupant). Empty weight 1,496 lbs. Loaded mass 0.92 tons. Suit volume 21.3 cf. Size modifier +1, body +0, turret -1, arms -1, legs -1, pod +0. Price $624,910. HT 12.
- **Aerial Performance:** Flight-capable, can hover. Effective motive thrust 49 lbs. (assuming standard load). Lift ST 3. Aerodynamic drag 85. Speed 65 mph, aMR 4.5, aSR 3, Move 32.
- **Ground Performance:** Speed 19 mph, gMR 3, gSR 1, Move 9. Jump-capable.
- **AUCS Statistics:** aScan -6, aPSig -9.

Drones

Drones are airborne self-propelled robots with low intelligence. They are used for a variety of missions, and can be customized via swappable modules. The description here conforms to ***GURPS Robots.***

Drone Components

Basic Sensor Package: A drone's basic sensor package is roughly equivalent to a human's, including hearing, but not including smell, taste, and touch.

Independently Focusable Eyes: The drone has visual sensors that can track two different things at once and see in two different directions simultaneously.

Laser Rangefinder: The robot may estimate distances precisely using a laser beam. This adds 2 to weapon accuracy when aiming and improves depth perception.

Night Vision: As for the advantage, p. B22.

Telescopic Zoom 5: Allows a maximum magnification of ×32.

Thermographic Vision, Imaging Ladar, etc.: Described on p. 103.

Super-Hearing: This sensor improvement grants Acute Hearing +5 (p. B19), infrasonic and ultrasonic hearing (allowing the drone to hear very-high frequency and very-low frequency noises), and parabolic hearing (as for the Tactical-Sensor Array, p. 64).

Basic Communicator Package: A drone's basic comm package includes a voice synthesizer and a data cable jack, with 5-yard cable.

Long-Range Radio, Lasercom, etc.: A drone's other communications gear is similar to a battlesuit's; see p. 53.

Gyrobalance: Grants the drone +1 to Piloting.

Inertial Compass: This system can calculate the drone's exact location and heading, indicating the direction and distance traveled from any preset point. It can be set for the position the drone is at, or for any other coordinates (requiring a Navigation roll if the coordinates of the location aren't known). This gives the drone Absolute Direction (p. B19). Distances measured are accurate to within 1 yard per 1,000 miles.

Inertial Navigation System: As for the inertial compass, but much more accurate. It adds 7 to the drone's Navigation skill.

Laser Periscope: This device allows the internal laser designator to "fire" out the end of the arm. Thus, the robot can hide behind cover and continue to illuminate a target (see p. 104).

Standard Drone

This is the basic drone chassis. It consists of little more than a flying ovoid with sensors, communicators, and a single arm.

- **Brain:** Standard brain with compact, hardened, high-capacity, neural-net, and +3 DX booster options (30 lbs., 0.6 cf, $675,000), Complexity 4.
- **Subassemblies:** One arm; body.
- **Arm Design:** Arm motor only (0.0225 cf).
- **Body Design:** All other components (4.62 cf).
- **Propulsion:** One ducted fan with 140 kW motive power and 560 lbs. of thrust with vectored thrust option (111 lbs., 1.11 cf, $4,440, 140 kW).
- **Arm Motor:** One ST 5 arm motor with bad grip and retractable options (1.125 lbs., 0.0225 cf, $1,125, 0.025 kW).
- **Instruments and Electronics:** *Communicator:* Basic communicator with medium-range radio, infrared communicator, lasercom, and IFF options (6.25 lbs., 0.125 cf, $3,225). *Navigation Systems:* Global positioning system (0.25 lbs., 0.005 cf, $50), gyrobalance ($2500), and inertial compass (0.5 lbs., 0.01 cf, $125). *Sensors:* Basic sensors with independently focusable eyes, laser rangefinder, night vision, telescopic zoom 5, thermographic vision, no sense of smell/taste, imaging ladar (2.5 mile range), high-res imaging radar (2.5 mile range), search radar (5 mile range), radar/laser locator, and radiation detector options (18.9 lbs., 0.38 cf, $25,600, 3.75 kW).
- **Miscellaneous:** One laser designator with 10-mile range ($2 lb., 0.04 cf, $500). One modular socket rated for 50 lbs. and 1 cf.
- **Power:** 4.5 kW NPU powers all systems but ducted fan, with 0.725 kW excess to recharge batteries (at 43.5 kWs per minute) (59 lbs., 0.59 cf, $20,000). *Energy Bank:* Four rechargeable E cells with 1,080,000 kWs stored to power ducted fans (flight time 2 hours, 8 minutes) (80 lbs., 0.8 cf, $8,000).
- **Area:** Arm 0.48, body 16.64, total 17.12.
- **Structure:** Medium, expensive (38.5 lbs., $3,424).
- **Hit Points:** Body 25, arm 1.
- **Armor:** Laminate armor. Arm: PD 4 DR 20. Body: PD 4 DR 200 (83.5 lbs., $8,346).
- **Surface Features:** Sealed ($171), radical emission cloaking (17.1 lbs., $12,841), radiation shielding (8.6 lbs., $86).
- **Statistics:** 507 lbs. (0.25 ton); 4.68 cf (3' long). $765,933. Arm ST 5, DX 13, IQ 8, HT 12/25. Air speed 77 (154 mph). LC 0.

Modules

All modules are 50 lbs. and 1 cf.

Light Weapons Module: Contains one gauss minigun, $10,800.

Heavy Weapons Module: Contains one portable railgun, $5,760. See the *Ranged Weapon Table* for details.

Nuclear Bomb Module: Contains a mini-nuke. The largest nuke module holds a 1-kiloton device doing 6d×4,000,000 concussion damage. Smaller sizes are available (see *Satchel Nukes,* p. 59). $120,000.

Conventional Bomb Module: Contains a conventional explosive. 6d×600 crushing concussion damage, 2d cutting fragmentation damage. $4,800.

Recon Module: Adds super-hearing to sensor package, long-range radio to communications package, and another laser designator. Also adds a ST 5 retractable striker arm with laser periscope for the designator (treat as identical to drone arm, except for being a striker), an inertial navigation system, and a rechargeable B cell to power the module. $25,000.

Repair Module: Adds four ST 5 retractable arms, each with a different set of integral tools (Engineer, Mechanical, Armoury, Electronics). $12,250. This module will also include skill software, though the precise programs vary. A Complexity 4 skill program costs $4,000 and grants skill-15 in a M/A skill (e.g., Armoury, Mechanic) or skill-14 in a M/H one (Electronics, Engineer). Vulcan maintenance Ogres carry a dozen drones equipped with repair modules, and the appropriate skill specializations for working on Ogres.

Software

Drones come with an operating system and a "native" language at skill level 8 (typically English-8 for Combine drones, French-8 for Paneuropean robots). Specialized installed programs typically include:

Full Coordination 1: Allows the drone to designate two targets at once. Complexity 4, $5,000.

Literacy: Drones can read in their native language. Complexity 2, $100.

Datalink: A standard set of communication and networking protocols. Complexity 1, $200.

Encryption 3: This is an advanced form of encryption. Complexity 3, $375.

Targeting: This is a simple set of interfaces for controlling weapons. Complexity 1, $500.

Gunner: This lets the drone fire any attached weapons with a skill of 12 (this includes using the designators). It incorporates sophisticated target-recognition and friend-or-foe identification routines. Complexity 4, $22,500.

Piloting (Self)/TL9 [2]: This allows the drone to control its flight with a skill of 14 (including +1 gyrobalance bonus). Complexity 3, $4,000.

This package of software costs $32,675. Many other programs are possible; consult pp. RO59-63.

Weapons

At the core of any military game is weaponry. This section includes heavy personal armaments for the battlefield, and a small selection of civilian weapons.

Weapons for Battlesuit Infantry

These weapons are intended to be used by troops in battlesuits. The oversized grips and triggers are designed for hands in suit gauntlets; anyone trying to fire the weapon with normal human hands should be treated as not meeting the Minimum ST requirement, regardless of their actual ST. Some of these weapons require power but do not have integral batteries; they are connected to batteries in the suit by cable. The cable connectors are intentionally incompatible with enemy and civilian power supplies! HUD sights are standard, linked to the targeting computer in the suit.

3mm Gauss Gun: This is the standard sidearm of the Paneuropean battlesuit trooper. Known as the "Wespe" (wasp), it fires electromagnetically accelerated, armor-piercing saboted rounds. Armor protects at half DR, but damage that penetrates armor is also halved. It is fired using the Guns (Needler) skill. When firing, it is a 140 kW drain on the suit batteries (7 kWs/shot). Spare clips of 1,000 cost $56 and weigh 1.3 lbs. If attacked, the weapon has a -2 size modifier, 4 hit points, PD 3, and DR 19.

5mm Heavy Gauss Gun: The HGG uses the same technology as its 3mm sibling, but with a larger caliber and in a rifle format. A bipod is available. When firing, it is a 760 kW drain on the suit batteries (38 kWs/shot). Spare clips of 1,000 cost $400 and weigh 5.9 lbs. If attacked, the weapon has a -1 size modifier, 11 hit points, PD 3, and DR 28.

40mm EMGL: This electromagnetic grenade launcher sees occasional use in battle, but is largely used in stealthy anti-materiel missions. Its range is short, and its damage is overkill for battlesuits but low for armored vehicles. The 40mm EMGL has a pistol grip and a shoulder stock; it is fired using Guns (Grenade Launcher). It drains 15 kWs per shot from suit batteries. Spare ammo cartridges of 20 cost $228 and weigh 9 lbs. If attacked, the weapon has a -4 size modifier, 2 hit points, PD 3, and DR 15.

100mm HEAT Launcher: This is the anti-vehicle weapon carried by most Paneuropean troopers. Shaped like a fat rifle (you can put your fist down the barrel), it fires high-explosive anti-tank (HEAT) rounds which incorporate

a shaped-charge explosive that drives a pencil-thin jet of metal into the target at over 20 times the speed of sound. The rounds are cannon-launched guided projectiles (CLGP), well-suited for indirect fire (see p. 105). The HEAT launcher incorporates a laser designator, though a trooper can't designate for his own attack. It is fired using the Guns (Grenade Launcher) skill. Each shot drains 235 kWs from the suit batteries. Spare ammo cassettes of 10 rounds cost $3,800 and weigh 50 lbs. If attacked, the weapon has a -1 size modifier, 14 hit points, PD 3, and DR 24.

M-LAWS: The Magazine Light Anti-armor Weapons System is a semi-automatic launcher with a magazine of brilliant missiles. It can fire one missile per turn. Brilliant missiles lock onto their target before firing, requiring only one turn of designation. After launch, the missile "remembers" the target, and the designating infantryman can duck back into cover. The missile moves at 400 yards/second. Note that, despite the name, brilliant missiles are far from the smartest ordnance in the ***Ogre*** universe; they also have no evasive abilities. The M-LAWS is available for battlesuits and unarmored humans; the two versions have identical stats. It is fired using the Gunner (Guided Missile) skill. An M-LAWS does *not* require power. A magazine of five missiles costs $9,000 and weighs 25 lbs. If attacked, the weapon has a -2 size modifier, 7 hit points, PD 3, and DR 5.

Personal Gauss Cannon: This heavy 20mm weapon fires depleted-uranium armor-piercing rounds; it is nicknamed the "Hole-Puncher." It can be carried on the ground by one battlesuited soldier, but two are required to fly with it. It must be tripod-mounted, and is fired using the Gunner (Railgun) skill. It serves as a light anti-armor weapon. The Hole-Puncher does not use suit power; each magazine comprises 120 rounds and two D cells (which are removable, if needed elsewhere). Listed weight includes tripod. A magazine costs $2,440 and weighs 43.6 lbs. If attacked, the weapon has a +0 size modifier, 34 hit points, PD 3, and DR 45.

Splat Gun: This explosive scatter gun is a "quick and dirty" weapon designed to be used on groups of battlesuited infantry. Due to its need to be reloaded after every shot and relatively low cost, it is regarded as disposable by battlesuit troops. It is a bulky, multi-barrel weapon that looks like a short, thick bazooka, with a pistol grip, padded shoulder stock, and bipod. It uses a compressed-gas propellant to fire a closely spaced, eight-shot pattern of low-velocity, shaped-charge shells. The splat gun is available for use by battlesuits and unarmored humans; the two versions have identical stats.

The weapon is fired using Guns (Grenade Launcher) skill, and has a high recoil. RoF is 8, and *all* shells must be fired at once at the same target. There is a +1 to skill because of the scatter effect. Use *Number of Hits in a Burst,* p. B120, to determine how many of the rounds hit. Count the eight rounds as two groups of four. Each round that hits explodes, doing 5d(10) damage. The splat gun does *not* require power. A reload costs $100 and weighs 8 lbs. If attacked, the weapon has a -2 size modifier, 5 hit points, PD 3, and DR 5.

Normal Weapons

These are weapons designed for normal human hands. Most TL8 weapons from other ***GURPS*** books are available, excluding beam weapons. The M-LAWS and splat gun (above) are available in non-battlesuit versions.

Combine Shotgun: This is a typical example of a legal civilian hunting weapon in the Combine. It is a one-shot weapon, requiring reloading after every shot. It comes with a pistol grip and shoulder stock. It is fired using Guns (Shotgun) skill. A box of 100 shells is $50 and 15 lbs.

Gauss SMG: A lightweight assault weapon that can be fired one-handed and concealed under a heavy coat. It is fired using Guns (Needler) skill. A 60-shot magazine (including C cell) costs $130 and weighs 2 lbs.

Machine Pistol: A typical handgun, firing a .40 caliber bullet from a 30-round magazine. Damage that gets through DR is multiplied by 1.5; if used two-handed, recoil is only -1. It is fired using Guns (Machine Pistol) skill. An ammo cassette costs $20 and weighs 1 lb.

Satchel Nukes

These are human-portable nuclear bombs, used when conventional explosives won't do. Each is roughly the size of a small purse or briefcase, weight 10 lbs. A tenth-ton bomb costs $8,000; a one-ton bomb, $11,000; 10-ton, $14,000; 100-ton, $17,000. Larger nukes are theoretically available, but would be larger, heavier, and quite a bit more expensive. LC of all nuclear devices is -1. See *Nuclear Explosions* on p. 107 for more info.

Weapon Tables

Weapons are described in the following format:

Malf: The die roll on which a weapon malfunctions. Crit. means that the weapon malfunctions only on a critical miss, when a roll on the critical miss table indicates a malfunction. Ver. means that the weapon requires a verification roll, another roll against skill. Any failure is the malfunction from the table; any success is simply a miss. Ver. (Crit.) means that the verification roll must be another critical failure for the weapon to malfunction. Any other result is simply a miss.

Type: The type of damage the weapon does: impaling (Imp.), crushing (Cr.) or an explosion (Exp.). Spcl. is a special effect – see the description of the weapon.

Damage: The number of dice of damage the weapon does. A number in parentheses ( ) means the weapon is very good at piercing armor; the target's DR is divided by that number before being subtracted from the weapon's damage. A number in brackets [ ] indicates additional fragmentation (cutting) damage.

SS: This is the snap-shot number, the final to-hit number necessary to avoid a penalty of -4 without at least one turn of aiming. The battlesuit weapons all assume a HUD is in use, reducing SS by 5.

Acc: The weapon's accuracy modifier. See p. B115.

1/2D: The range at which Acc drops to zero and damage is halved. If this number is in parentheses, damage is not halved but Acc is still lost.

Max: The maximum range of the weapon under Earth-normal conditions.

Wt.: The weight in pounds of a loaded weapon, including any magazines and power cells.

RoF: The rate of fire of the weapon – the number of shots it can fire each turn. If this number is greater than 1, then the weapon is capable of automatic fire; i.e., that many shots will be fired if the trigger is held down for the entire turn. A tilde ~ indicates a weapon that is not automatic, but can fire up to the indicated number of times per turn. An asterisk * indicates that it is capable of selective fire; it may fire either automatically or with RoF 3~. A fractional RoF (e.g., 1/3) means that the weapon can fire once, but then requires a number of turns equal to the number after the slash to reload before it can be fired again.

Shots: This is the number of shots the magazine holds. Unless the weapon has a fractional RoF (see above), it takes three turns to replace a magazine. Drone weapons carry the listed number of rounds and the listed power cell dedicated to powering the weapon.

ST: The minimum ST required to avoid an extra turn of readying the weapon after it is fired and extra recoil penalties. Minimum ST only applies when firing the weapon from the shoulder or hip. A "T" indicates that the weapon is normally fired from a tripod.

Rcl: The recoil penalty of the weapon. See p. B119.

Cost: The retail price of the weapon, loaded and charged.

LC: The legality class of the weapon. See p. CII188.

Ranged Weapon Table

Weapon	Malf	Type	Damage	SS	Acc	1/2D	Max	Wt.	RoF	Shots	ST	Rcl	Cost	LC
Battlesuit Weapons														
3mm Gauss Gun	Ver. (Crit.)	Cr.	8d×2(2)	13	10	2,400	9,600	21.3	20*	1,000	13	-1	$9,740	0
5mm Heavy Gauss Gun	Ver. (Crit.)	Cr.	6d×5(2)	20	14	4,050	13,350	108	20*	1,000	23	-1	$41,700	0
40mm EMGL	Ver.	Exp.	6d×2(10)**	7	9	(360)	2,600	16.2	1	20	9	-1	$4,150	0
100mm HEAT Launcher	Ver.	Exp.	6d×25(10)**	15	10	560	3,400	118	1	10	26	-2	$31,100	0
Personal Gauss Cannon	Ver.	Cr.	6d×20(3)	20	16	5,100	15,600	584	20	120	96T	-1	$113,000	0
M-LAWS	Crit.	Exp.	6d×10(10)**	–	–	–	4,000	35	1	5	11	0	$9,500	0
Splat Gun	Crit.	Exp.	5d(10)**	0	9	(250)	500	20	8	8	15	-2	$3,500	0
Normal Weapons														
Combine Shotgun	Crit.	Cr.	3d	12	6	27	160	8	1/3	1	12	-3	$175	4
Gauss SMG	Crit.	Cr.	5d(2)	11	9	250	2,500	5	16	60/C	–	0	$3,000	1
M-LAWS (see above)														
Machine Pistol	Ver.	Cr.	3d	10	8	180	2,000	3.5	10	30	9	-2	$350	2
Splat Gun (see above)														
Drone Weapons														
Gauss Minigun	Ver.	Cr.	8d(2)	20	14	1,200	4,500	45	60*	600/D	10†	0	$9,000	0
Portable Railgun	Ver.	Cr.	6d×4(3)	18	17	1,800	4,800	45	3~	150/C	9†	-1	$4,800	0

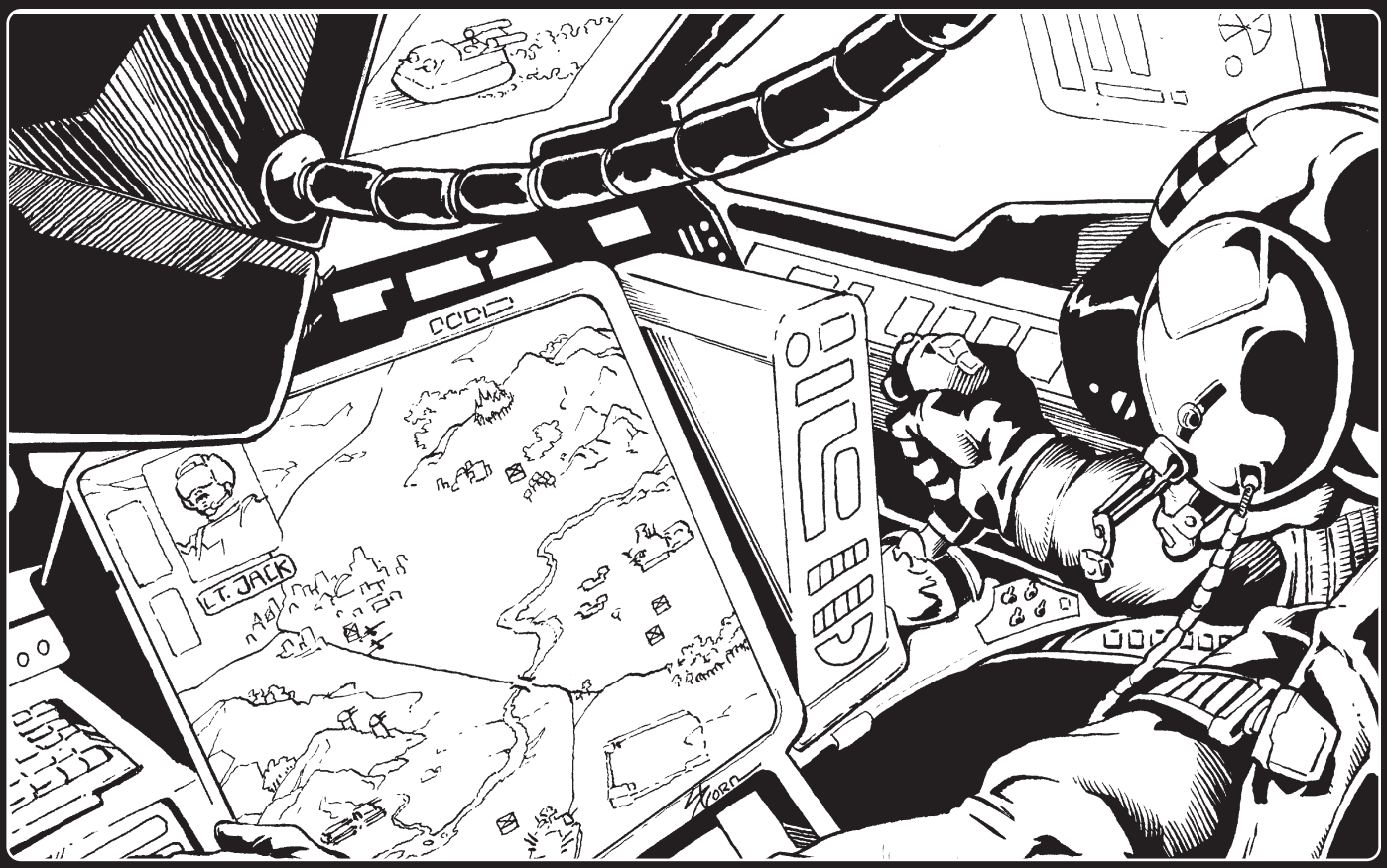
** The DR of BPC armor is *doubled* vs. a direct hit by this weapon; you may want to simply reduce the armor divisor to (5).
† Minimum strength of robotic arm which incorporates weapon. Treat as Strength 14T for humans.

Computers

All TL9 computers (including battlesuit computers, vehicle computers, and robot brains) are capable of accepting spoken commands and responding in kind. The simpler ones (Complexity 3 or so) require very precisely phrased orders, in a particular language, and often with a particular accent. They can be "trained" to recognize a new accent or language, but this takes days at best. They have no personality. Advanced computers (Complexity 6) are fluent in several languages, capable of idiomatic conversation, and often have minor personality quirks. None of the computers listed here are sentient; for that, see the *Ogres* chapter.

Personal Computer: A typical Complexity 3 personal computer consists of a screen 3" × 5" × 1/2" deep. The screen is holographic, and the computer is controlled by voice commands. It can do everything a turn-of-the-millennium computer can do, but faster and better. A wide variety of peripherals are available, including keyboards, printers, etc. An infrared transceiver is standard. Runs for 1 year on a rechargeable B cell, or may be plugged into house power. $500, 1 lb.

Tactical Battle Computer (Battlecomp): This is the computer used by officers to control their forces in battle. A Complexity 6 mainframe, it is found in most command posts. As cargo, it takes up 81 cubic feet. Deploying it



involves setting up the holographic "tank" (which takes up a space 8' × 8' × 2' deep), in addition to the CPU, which is a flat box 2' × 2' × 1.25'.

The battlecomp is used for control and communications in battle. The holotank displays a holographic representation of the battle, typically at 1:30,000 scale, though any scale is possible. Vertical scale is exaggerated so that terrain features are more visible. Units appear at 1:300 scale to make them large enough to see in detail. Units typically have the same "shape" as the real vehicles or battlesuits they represent, but are color-coded to show nationality, capabilities, etc. Each unit is tagged with vital status info.

Correctly using a battlecomp requires a headset including microphone, headphones, and HUD goggles, and a finger-mounted designator. The designator can be used to pick out units or groups of units. The person's HUD then displays more detail on those units. A communications link may be established with the unit, or a command may be given to the computer to be relayed. A typical command post setup will include several smaller holotanks manned by individuals controlling or observing smaller aspects of the battle. A battlecomp is $150,000, 250 lbs. A designator/headset pair costs $100, negligible weight.

Communications

A variety of communications technologies are available, including radio, laser, and infrared. All standard communicators allow for the transmission of audio and video, and can be connected to a computer for data transmission. Any transmission can be encrypted, requiring a Cryptanalysis roll to decrypt.

Radio communicators operate via standard radio frequencies. The signal is broadcast, so the *existence* of the transmission is not secret. Range can be increased on an Electronics Operation (Comm) roll, at -1 for each 10% increase up to twice base range.

Laser devices transmit data over a modulated laser beam. The range given is the maximum, but lasers are blocked by anything opaque, including walls, smoke, or the horizon. They cannot be intercepted. To stay in touch with a fast-moving vehicle, a laser communicator must be installed on a tripod-mounted target-tracking system (TTS). This takes 30 seconds to set up. A TTS is $500, 5 lbs.

The tactical lasercom is a shoulder-mounted device that must be connected to a HUD. The user simply looks at who he wants to talk to, and uses the HUD to aim, giving +4 on any roll the GM may require to aim the lasercom.

Infrared broadcasts are short-range but are easier to aim than a laser comm, as IR tends to scatter and bounce off solid objects. Most electronics have an IR transceiver built in. IR can be detected by thermographic systems.

Communicators Table

Name	Type	Range	Power	Size	Weight	Cost
Short-Range Communicator	radio	100 miles	1A/year	finger-sized	neg.	$25
Medium-Range Communicator	radio	1,000 miles	1B/year	palm-sized	1/2 lb.	$100
Long-Range Communicator	radio	10,000 miles	1B/3 months	pouch-sized	5 lbs.	$300
Tactical Lasercom	laser	200 miles	2C/20 hours	special	3 lb.	$1,000
Standard Laser Communicator	laser	2,000 miles	1C/10 hours	rifle-shaped	5 lbs.	$2,500
Infrared Communicator	infrared	50 yards	1A/month	palm-sized	1/4 lb.	$130

The *Power* column indicates what cells are required to power the communicator for the given period. The figures for laser communicators are for *constant* use. For other communicators, it assumes normal usage.

A "neg." in the *Weight* column indicates weight is negligible.

Armor and Defenses

Battledress Uniform (BDU): Cloth fatigues continue to be called "battledress" throughout the 21st century, despite the danger in wearing less than a battle*suit* into any real combat. These baggy, two-piece fatigues are everyday work wear for most soldiers. They come in a variety of sizes and colors, including various forms of camouflage, navy blue, gray, and black. A set rarely has fewer than 10 pockets, and may have dozens. The material is a fire-resistant, water-repellent synthetic fiber that is reasonably tough (PD 0, DR 1). Wear points (such as the knees) have a double thickness.

A protective coating repels chemical agents and breaks up the wearer's infrared signature. It provides a +1 on HT rolls to resist chemical attacks that rely on skin contact, and gives a -1 on attempts to spot the wearer using infrared scanners or thermographs.

Most battledress uniforms cost $200 and weigh 2 pounds. (A soldier is issued four to six sets free when he joins the military.) Insulated and hooded winter uniforms increase cost by $40 and weight by 2 lbs., but give +5 to HT to resist cold weather.

Combat Boots: Next to his weapon, a soldier values a good pair of boots. Military-issue boots come halfway up the shin, lace firmly, and wear well. They provide PD 2, DR 5 for the feet, and +1 to kicking damage. Most are basic black, though variants with camouflage panels exist. $120, 2 pounds. A soldier is issued two pairs free. Boots with BPC toes are available for $30 extra, providing PD 4, DR 15 for the toes alone, which can be important for low-DX troopers.

Anti-Radar Foam: AR foam can be applied to skin, clothes, armor, or vehicles. It is a 1/2-inch thick layer of sticky foam, available in a variety of camouflage colors. It provides a -4 penalty to radar detection, and DR 1 (DR 6 vs. lasers or nuclear-flash damage). One tube covers one person or 2 square yards; a spray can covers a vehicle or up to 10 square yards. Application takes 3 turns per person or square yard. Tube: $5, 1/4 pound. Can: $20, 1 pound.

Anti-Sound Foam: Similar to AR foam, this substance absorbs sound. It can be used to make a vehicle quieter (-2 to Hearing rolls), or to soundproof a room. It is otherwise identical to anti-radar foam.

BPC Spray Gear: Biphase carbide normally needs to be set and cured in a factory environment, but "spray-on" BPC is available. It is nowhere near as strong as factory BPC, but it can be used to create revetments by spraying down hastily created dirt walls with instant armor plate.

BPC spray gear is bulky and heavy. It requires several tanks, which hold carbon and exotic solvents, and must be laid down in sheets 1/2-inch thick to be useful. The most common form of BPC sprayer is a backpack for a battlesuit, designed to hang down on either side of the suit's thrust pod, with a spraygun attached by hose to the storage tanks. The contents can cover 15 square yards with 1/2 inch of BPC, providing PD 4, DR 50. Using the spray gun as a weapon defaults to DX-2; SS 10, Acc 1, 1/2D 3, Max 5. The forceful blast of hot, corrosive solvents does 10d damage, and the victim will be covered in rapidly congealing armor plate. If the armor is not scraped off within 1 minute, it will harden, requiring a Contest of ST vs. ST 40 (one try per minute) to break free. The armor can be broken off from the outside by exceeding its DR, but excess damage is applied to the "wearer" normally! These rules also apply to someone wearing the spray gear if the tank (PD 2, DR 20) is ruptured. One D cell serves to run the pump and warm the chemicals to properly fluid temperatures. $20,000, 200 lbs.

Tools

Portable Battlesuit Repair Shop: A battlesuit shop is an integral part of all heavy infantry companies. Battlesuits are complex devices incorporating both mechanical and electronic systems; a battlesuit shop is thus larger than the shops for any one specialty. It allows any suit repair to be performed at +2 to skill. A shop includes lifting jacks, a suit-cracker or two (see below), diagnostic computers, and an assortment of power cells (2d AA, 2d A, 2d B, 1d C, 1d-2 D, 1 E). A shop occupies 150 cubic feet as cargo, and several rooms when deployed. $9,000, 3,500 lbs.

Battlesuit Basic Tool Kit: Intended for quick repairs, this kit is often carried on a GEV-PC or hovertruck on the outskirts of a battle. It is difficult to include all the tools necessary for suit repair in a kit this size, so rolls are made at -1 (instead of "no penalty," which is the standard for basic tool kits). Includes a suit-cracker and some power cells (1d+2 AA, 1d A, 1d-2 B, 1 C, 1 D). A kit occupies 18 cubic feet as cargo, and can be deployed over 20 square feet. $1,500, 360 lbs.

No mini-tool kits exist for battlesuits; use standard ***GURPS*** mini-tool kits for each Engineer, Mechanic, Armoury, or Electronics specialty. Each fits on a belt, -2 or more to skill, $400, 2 lbs.

PLASTEX-B: This is a powerful, moldable explosive. It is very stable, only set off with a detonator. One quarter-pound does 6d×3 damage; it is roughly six times as powerful as TNT. PLASTEX-B costs $20 per 1/4 pound. A detonator (time or comm trigger) also costs $20, negligible weight. In the ***Ogre*** universe, PLASTEX-B is mostly used for engineering (e.g., road-building).

Power Shovel: This is a heavy-duty, multipurpose tool designed for use by combat engineers. It resembles a massive, five-foot-long shovel. The end opposite the blade is flattened and notched for use as pick or jackhammer. In unpowered mode, it is simply a general-purpose tool tough enough to be used by a ST 75 battlesuit trooper without breaking. Powered, the shovel end functions as a vibroblade, and the pick end may be used as a jackhammer. Either use requires 6 kW of power, usually provided by the suit's batteries. The power shovel may be used as an emergency suit-cracker (see below); treat any such use as "hurried."

If used as a weapon (using Two-Handed Axe/Mace skill), the power shovel is treated as a great axe with 5× weight. Damage is swing+4d cutting unpowered, swing+5d(2) cutting when powered. (Vibroblades ordinarily have an armor divisor of 5, but the power shovel does not vibrate at "armor-piercing" frequencies.) Hand-to-hand combat between battlesuited soldiers is rare in the ***Ogre*** world, and few troopers actually *have* Two-Handed Axe/Mace skill.

The power shovel weighs 40 lbs., and can only be used effectively (as tool or weapon) by someone 7' tall with ST 50 or more. $5,000.

Suit-Cracker: Battlesuits can be opened by the wearer at will, or by anyone possessing the correct codes. But this assumes the wearer is conscious, the locks aren't melted, the codes aren't lost . . .

A suit-cracker is designed to force open a suit when all else has failed. Based on the design of firefighters' "jaws of life," it consists of two huge, diamond-tipped claws that can be driven together or apart by a powerful hydraulic motor. Cracking a suit takes 1d×10 minutes if done carefully. In a hurry, it can be done in 1d×3 minutes, but the occupant takes 2d-6 damage, minimum 0. In either case, the suit will require substantial repair afterward (GM's decision). One D cell powers it for 20 suit-openings. $2,000, 25 lbs.

Vibrosaw: This cutting tool resembles a small chainsaw without a chain; the blunt blade vibrates at hypersonic speed. As a weapon, it does swing+4 cutting damage with an armor divisor of 5; it's not designed to do thrust damage. Roll versus DX-2 or Shortsword-1 to hit. $800, 2 lbs., runs for 30 minutes on a B cell.

WakiGlu™: This glue bonds nearly any substance instantly (setting in 1 second). One application will cover up to 1 square inch and hold 800 lbs. per square inch. (As a loose guideline, materials that aren't armor will give way before the glue does. Use only as directed.) A 200-application tube costs $10; weight is negligible. WakiGlu™ is non-conductive, but a metal-impregnated variant for the electronics industry, *ZapiGlu*™, is available for 10% more.

Survival Gear

Decontamination Aerosol: Sprayed on a battlesuit, decontamination aerosol removes *most* radioactive fallout, persistent chemicals, bugs, etc. A Geiger counter should be used to make sure. A tank and spray gun (decontaminates a vehicle or 10 battlesuits) costs $300 and weighs 12 lbs. Spare tanks cost $200 each. A single-use personal can costs $30 and weighs 1.5 lbs.

Emergency Survival Kit: This is standard issue for battlesuit troopers, carried in internal cargo space for use in case the suit fails. It includes an NBC suit, a survival watch, a personal can of decontamination aerosol, a filtration canteen, an envirobag, one day's rations, a fighting knife, and minor personal items (Swiss army knife, eating utensils, etc.). $800, 20 lbs.

Heavy Decontamination Gear: This is standard issue for most infantry companies. It consists of an oversized "shower stall" big enough for a battlesuit, which sprays down suits with decontamination aerosol and high-pressure water. The stall includes sensors for radiation and other hazards, and will concentrate on those parts of the suit most contaminated. $5,000, 200 lbs., 110 cf. The stall includes scrubbers for the aerosol and water, and recycles as much as possible, but a reload is still required every 50 uses. Reloads are $400 each. Very large "car washes" exist for decontaminating vehicles, but they are rare.

Envirobag: A sleeping bag made of advanced materials; it feels like silk and can be folded to the size of a paperback book. One side is silver (for hot weather) and one is black (for cold weather). Used appropriately, it provides +10 to HT rolls to resist heat or cold. $75, 6 lbs.

Filtration Canteen: These clear plastic canteens have two compartments. Suspect water is poured into one, and filters into the drinkable side over 20 to 30 minutes. It removes all inert contaminants (minerals, lead) and some radioactives, but is only about 75% effective on biologicals. The filter turns bright red after 100 quarts, at which point it may still be good for 1d more quarts. Holds 1 quart, $175, 1 lb. empty, 3 lbs. full.

Geiger Counter: This is a *directional* radiation detector. It can be used to measure ambient radiation, but it can also determine if a specific object is "hot." $100, 1/4 lb.

NBC Suit: Worn over regular clothing to protect from nuclear, biological, and chemical contamination. It is effective against almost all particulate contamination – airborne poisons, germs, fallout – and provides PF 2 versus radiation (see p. 107 for PF and radiation rules). The suit is airtight, with a filter. The hood is clear, but still imposes -1 to Vision and Hearing rolls. The suit has PD 0, DR 1. 10 lbs., $200. The filters need to be replaced every month of heavy use, or every year regardless. New filters are $200.

Survival Watch: The size and shape of a large watch, this device incorporates the following:

- A dedicated computer (Complexity 2) with a 0.1-gig database of survival lore. The database grants a +2 to any Survival roll, not including Survival (Urban) and only including Survival (Radioactive) in watches manufactured after 2050.
- A chronometer with all standard watch functions.
- A radiation counter, capable of giving current rads/hour or accumulated rads over any period.
- A magnetic compass.
- A homing beacon. This can be set for active mode (in which it broadcasts continuously), or passive mode (in which case it sends out a blip when it receives a coded signal). Each homing beacon broadcasts a different code, but any can be tracked with radio-detection gear.
- An inertial compass, capable of giving direction and distance traveled from a preset point.

It is voice-activated and displays information on a tiny, high-res color screen that takes up the whole face of the watch. It works for 1 year on an A cell. $300, 1/4 lb.

Sensors and Detection Gear

Anti-Glare Contacts: These polarizing contact lenses darken automatically to cut glare and ultra-bright light. They add 4 to HT on rolls to resist the effects of blinding light. Standard clear, non-prescription lenses that darken to gray are $200. Prescription lenses add $20, and designer colors (blue, violet, etc.) add another $30.

HUD Goggles: These are a standard form of computer interface. They consist of a pair of wraparound glasses on which holographic data can be displayed, and small earphones for audio information. They incorporate standard datajacks and an IR transceiver. Turned off, they serve as sunglasses (+1 to HT rolls to resist glare). They run for 1 year on an A cell. $250, 1/4 lb. Versions with a built-in Complexity 2 computer are available for $500, 1/2 lb.

Multiview Goggles: These goggles provide the user with the equivalent of the Night Vision (p. B22) and Infravision (p. B237) advantages. They also protect against glare and very bright light (including flashes of heat when in infrared mode), and incorporate a HUD. They include an integral IR spotlight, which gives a +3 to infravision Vision rolls but makes the wearer *extremely* visible to other people wearing IR goggles or using PESAs. They run for 3 months on an A cell. $700, 1 lb.

Personal Radar Detector: This pager-shaped device will beep or vibrate when the user is in the path of a radar beam at up to *twice* that radar beam's range. It will not detect ladar. It runs for 3 months on an A cell. $25, 1/4 lb.

Tactical-Sensor Array (TSA): This sensor looks like half a backpack with a turret sticking up over the wearer's shoulder. It includes a periscope-mounted lens that mimics the user's head movements. The sensory periscope incorporates an optical imager, thermograph, sonic-motion detector, and parabolic microphone. The periscope is two feet long, attached to the upper right corner of the backpack. It can fold flush with the pack, or rotate to look around corners or over cover while the user is lying prone.

To use the tactical-sensor array, the wearer must plug it into a helmet containing a HUD, or wear HUD goggles. The user can choose to use the array or normal vision at any time. While using the array, replace Vision rolls with an Electronics Operation (Sensors) roll. All sensors in the array can be used simultaneously.

The optical imager gives the user the equivalent of the Night Vision advantage (p. B22); it also incorporates 5-power magnification and an electronic rangefinder.

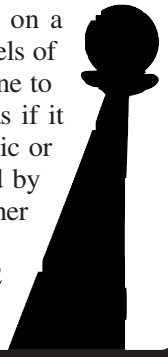
The system automatically compensates for very bright light levels; +5 to HT to avoid being blinded.

The thermograph functions according to the rules on p. 103, with a range of 2 miles.

The sonic-motion detector uses sound waves to locate moving objects. It can be set for omnidirectional or front-arc-only mode. Range is 30 yards, but it will work through thin wood or plastic walls. The GM can require Electronics Operation (Sensors) rolls to detect slow (less than 1 yard/second) or small (rat-sized) targets.

The parabolic microphone zooms in on a particular sound or area, giving up to 9 levels of Parabolic Hearing (p. CI62). This allows one to hear a normal conversation at 500 yards as if it was 1 yard away. It can also detect subsonic or ultrasonic emissions, such as those emitted by the sonic motion detector function of another TSA.

A pair of B cells powers a TSA for 2 weeks of constant usage. $10,000, 3 lbs.



Drugs

Drug Patch: Any drug deliverable by injection or pill is also available in a drug patch. Each resembles a two-inch square, adhesive, plastic-strip bandage. The bandage contains a solution of a particular drug. When the patch is applied to bare skin or thin clothing and pressure exerted on it, a dose of the drug will soak through the skin. The effect is identical to other delivery methods.

A drug patch can be used in combat; simply unpeel the backing and attempt to stick it onto the target using Brawling or DX. Slapping a bandage on someone is a bit awkward: -2 to skill, not including any size penalties if they don't have much skin showing.

A drug patch costs $10 more than an ordinary dose and weighs 1 ounce.

Antirad: This medication contains a variety of different drugs, with the combined effect of partial protection against radiation. Antirad can be taken up to a week before exposure, or within an hour after. One dose halves the effective number of rads from a new exposure. Two doses halves again, and so on. It does not *heal* radiation damage, only prevents it.

Antirad is fairly toxic itself. When taken, a user must roll against HT+3, minus the number of doses taken in the past week (including this one), or lose 1 point of DX permanently. $150/dose, by pill or injection.

Hibernare (pronounced hy-ber-NA-ray): This derivative of Suspend (p. CII158 or p. UT99) puts people into a low-metabolism state similar to hibernation. It is used when someone needs to be "stored" unconscious for a few days to a week without medical attention. Once injected, the subject falls unconscious and metabolic processes drop to a minimum. While unconscious, he does not require food or water, and only needs 1/5th the normal amount of air.

After three days, the subject must make a HT roll every day. On a critical failure, his heart stops, and he will die without immediate medical attention. On an ordinary failure, the subject temporarily loses 1 point from ST, DX, IQ, or HT (choose randomly); the lost point affects any appropriate skills as well, and will be regained 1 day after he is awakened. Multiple failures are cumulative, but may affect different attributes.

Waking someone under the influence of Hibernare requires a reviver drug. Waking up only takes a few minutes. The subject will be somewhat hungry, but not ravenous. Hibernare is $500/dose, by injection. The reviver drug is $200/dose, also by injection.

Hypercoagulin: When injected into a patient with a bleeding wound, this causes coagulation and cessation of bleeding within 1d+4 seconds. It restores 1 point of HT and prevents any further damage from blood loss. However, overdoses can kill. For every additional dose within 24 hours, roll HT minus the total number of doses taken. A failed roll means that the patient's blood has become so thick that his heart stops. A full blood replacement, and possibly a heart transplant, will be required to save his life. $12/dose, by injection.

Neurovine: An antidote for nerve gas; part of every soldier's kit. If taken within 15 minutes of poisoning, it adds 3 to HT on rolls to avoid taking further damage. It is itself dangerous (and painful!); taking more than 1 dose in a day does 3d damage after 1 hour if a HT-2 roll is failed, and 1d if successful. $15/dose, by injection.

Painaway: This drug masks pain totally for a period equal to half the user's HT in hours. It also reduces IQ and IQ-based skills by 1. Any penalties normally inflicted by extreme pain are ignored totally. A Painaway user does not roll for stun or other damage effects until HT reaches 0. Because of these effects, he may take more damage than he realizes and suffer more in the long term. The GM may roll damage secretly and not inform the player until the character stops to examine his wounds (or falls over, or the drug wears off).

Each additional dose lasts 1 hour less than the first, until it is no longer effective. At that point, 24 hours must pass before Painaway will be effective again. Multiple doses have no effect (except for the IQ penalty, which is cumulative). Painaway is addictive; if more than 3 doses are taken in a 24-hour period, roll against HT to avoid addiction (a 15-point disadvantage). $50/dose, by pill or injection.

Quickheal: A dose of this drug will heal 1d of any kind of wound damage. This takes 10 minutes for the drug in hypo form or 1 hour in pill form. The patient must also have received first aid; Quickheal won't close a gaping wound. It has no effect on HT lost to radiation, disease, or poison.

If a second dose is taken within 24 hours, it may be less effective. Roll vs. HT, with a -2 for every dose after the first in the past 24 hours. If the roll is missed, the Quickheal is ineffective, and the patient will become nauseated and disoriented, with a -1 to DX and IQ for the next 24 hours. On a critical failure, he also takes 1d damage. $50/dose for injection, $20/dose for pill form.

Steresthai: This is a reversible sterility drug, available in two formulations (one for each gender). Injected into the forearm, it prevents women from conceiving and men from producing living sperm, for six months. It is available free of charge to most soldiers. $5/dose, by injection. The "reverser" for each gender neutralizes Steresthai within one day. $5/dose, in pill form.

Wideawake: This time-release capsule delivers carefully controlled doses of stimulants that prevent sleep, without causing too many side effects. A dose prevents the user from falling asleep for 3d+60 hours and eliminates all fatigue accumulated due to lack of sleep. (Users will complain of thirst and drink a lot of water during this period, but are not actually dehydrated.) After the time is up, the user suffers 2d+3 fatigue that can only be eliminated by sleeping for a long period (recovering 1 fatigue per 2 hours of sleep). If the fatigue suffered would reduce ST to less than 0, the user *will* sleep immediately, and cannot be awakened until *all* fatigue is recovered (except through extreme measures).

Taking more doses extends the wakefulness period by 2d hours but adds 5 to the final fatigue, cumulatively. A Wideawake user is at +5 to resist sleep gas or any similar sleep-inducing agent, but it has no effect on a Hibernare user. Anyone who has been awake for more than 48 hours thanks to Wideawake will be at -1 to IQ and IQ-based skills due to an increased inability to concentrate. This penalty increases by -1 for every additional 24 hours. $10/dose, in pill form.

Miscellaneous Gear

Cufftape: This is a variant on duct tape used for securing prisoners. The adhesive side is *directional*; wrapped the correct way, it can only slip tighter.

Cufftape comes in rolls of 100 feet with perforations every two feet (two feet makes a good pair of handcuffs). The tape is glue-free near the perfs, to give the person applying the tape a place to grip. A prisoner must win a Contest of ST vs. ST 20, or roll Escape-5, to break free. The initial try takes 1 second; every subsequent try takes 10 minutes of struggling. Every failed try does 1 point of damage to the taped area. The tape may be cut (DR 3, HT 6), burned, or dissolved with a specific aerosol spray. One spool is $20, 1/2 pound. The aerosol comes in cans good for 25 applications; $5, 1/2 pound.

Hypno-Trainer: This technology allows quick learning of the rote aspects of skills. (It is similar, but not identical, to the sleep teacher on p. UT39.) The student dons the headset, links it to the trainer, and inserts a teaching disk (see below). The headset induces sleep and plays the learning disk to reinforce rote aspects of a skill, while simultaneously stimulating the student's brain to make him highly receptive to information. Hours spent using this device count *double* toward learning a skill, but "field" learning is also required. Every real hour using the hypno-trainer must be matched by two hours learning the skill the old-fashioned way. (For example, to acquire 1 point in a skill normally requires 200 hours of education. With hypno-training, this is reduced to 150 hours: 100 hours awake, 50 hours under hypnosis.) Since the hours spent using the device count as restful sleep (when usually nothing is learned), this effectively reduces learning time by 50%! The militaries of the world rely on this device to speed training. The software requires an individual program for each skill. Programs are $6,000 for Easy skills, $8,000 for Average skills, $10,000 for Hard skills, and $12,000 for Very Hard skills. A hypno-trainer costs $15,000 and weighs 5 lbs.

Power Cells: This quick guide to power cells shows cost, weight, and power stored. These are non-rechargeable. Halve power capacity for rechargeable cells.

Slipspray: This polymer spray produces a nearly frictionless surface when sprayed on a smooth area like a floor or road. Any person who enters a slipsprayed hex moving at more than 1 yard per second must make a DX roll (-3 if sprinting) or slip and fall. Driving a vehicle into a slipspray area requires a Driving roll at -5 (as a Hazard) to avoid losing control. Slipspray breaks down after about an hour, losing its effectiveness. A can of slipspray covers up to 10 hexes, spraying 1 per turn, with a range of 2 yards. $30, 1/2 lb.

SIZE	COST	WEIGHT	ENERGY
AA	$2	neg.	5.4 kWs
A	$10	0.0025 lbs.	54 kWs
B	$30	0.05 lbs.	540 kWs
C	$100	0.5 lbs.	5,400 kWs
D	$500	5 lbs.	54,000 kWs
E	$2,000	20 lbs.	540,000 kWs

Other Devices

Many gadgets from other ***GURPS*** books also fit into the ***Ogre*** setting. GMs should bear in mind the restrictions from the *Technology* sidebar on pp. 17-19. Also note that the highest average TL achieved before the Crash was *early* TL9; advanced TL9 gear can be disallowed freely.

> 5.0 VEHICLES

> BEGIN

DISPLAY

>PANEUROPEAN
>MILSPEC AUTOFAC
>TEMPLATE ADH9083
>CDV-18 "JAEGER"
>HEAVY TANK
>REV 34, DATED
>2 APRIL 2096

>LAST ACCESS
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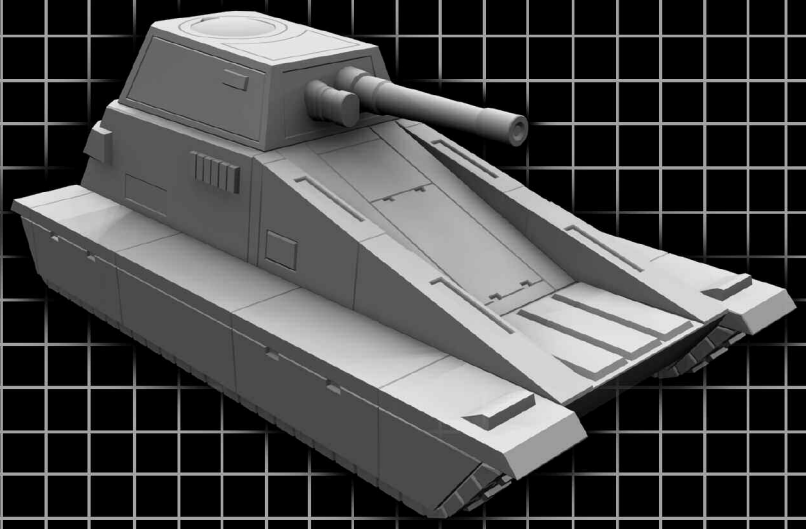
>FACILITY 17

>CHECKSUMS CHECK
>OUT. THIS IS
>IT, BOYS. PAY
>THE MAN AND
>LET'S GO.

>KÄTZCHEN OUT



"Third Platoon, we couldn't stop them. You've got better than a dozen Raptors, and maybe 10 Gremlins, coming your way. We'll regroup here, but the howitzers are going to need a wrecking crew, not a repair crew, and we've got maybe three squads of infantry left. Don't count on us."

"Roger, Second. Thanks for the warning. We've already put the call out, and we're getting orphans from all over. Still, it'll be close."

"Good luck, Third. Theissen out."

In Command Post Alpha, Captain Dufre, acting commander of Third Platoon, Bastille Company, surveyed his resources. Two GEVs, a missile tank, and a heavy. He also had a hundred battlesuit troops who'd been en route as replacements for the 4th Volunteers . . . 20 squads of unblooded iron men. It was nowhere near enough. They were going to get hammered. He stared at the holotank, then began to speak.

"Right. All units. Combine coming, about 20 GEVs and light GEVs, on us in about 10 minutes. DeFalco, I want your Ajax on the road northwest of the bridge at 2013. Your job is to cover the bridge and CP Beta. Some of them will probably come up the river, so watch it! Lieutenant Grau, stay in that revetment as long as you can; you've got the range on them and they don't know which one you're in. I want the Galahads to hang back until we get a feel for their intentions. Captain Tours, send eight squads to work with the Jaeger, six with the Ajax, and leave the rest here as reserve. You watch my front, I'll watch your back."

"Sir!" replied the infantry commander, "Yes, sir. ***Mes enfants*** *know the drill, and they're fresh, and all the suits are brand new. It could be worse. How long do you expect us to last?"*

"As long as it takes. I have complete confidence in you. Besides, everyone knows the Yanks can't shoot straight. Those buggies will hit and bounce, right?"

The infantryman raised an eyebrow at his transmitter as he answered. "Have you even convinced yourself?"

Captain Dufre sighed. "No."

Part of the fun of ***Ogre*** is all the high-tech vehicles you get to play with. From ground-skimming GEVs to the crawling fortifications that are superheavy tanks, the military vehicle is central to the action.

Most of the vehicles presented here are Paneuropean designs, but it was not unusual for armies to use each other's vehicles, even before the Crash. Retooling factories was almost always more trouble than it was worth, and captured materiel was often put back into use. Combine planners *hated* violating standardization like this, but the practicalities trumped ideology.

Units of Measure

GURPS uses the American (or "Imperial") system of measurement, while ***Ogre*** and ***Ogre Miniatures*** largely use metric. This book will use American units in almost all cases. For quick conversions, treat ***Ogre*** hexes as being 1 mile across, 1 inch of ***Ogre Miniatures*** as 1/2 mile, and ***Battlesuit*** map points as 40 yards apart. One ***Ogre*** movement point, or 2" of ***Ogre Miniatures*** move, is 15 mph offroad or a ***GURPS*** Move of 7. One ***Battlesuit*** movement point is 8 mph or Move 4.

Standard Vehicular Components

To save space (and for ease of play), the vehicles listed contain many standardized components.

Standard Comm Package: This package includes a radio with a range of 1,000 miles (HP 1, negligible power), and a lasercom with a range of 2,000 miles (HP 1, 0.1 kW). 5.5 lbs., 0.11 cf, $1,350.

Standard Sensor Package: This package includes a 150-mile range PESA with Scan 24 (HP 20), a backup 20-mile PESA with Scan 19 (HP 5), and a 6-mile MAD (HP 7). The MAD has Scan 15 vs. ferrous objects, but Scan 20 and a range of 30 miles to detect fusion plants or an electromag gun being fired. Rules for sensors are on p. 103. 400 lbs., 9.2 cf, $1,260,000, negligible power requirements.

Advanced Sensor Package: This has a 300-mile range PESA with Scan 26 (HP 31), a backup 20-mile PESA with Scan 19 (HP 5), and a 6-mile MAD (HP 7). 700 lbs., 16.4 cf, $1,500,000.

Basic Sensor Package: This comprises only a 20-mile PESA with Scan 19 (HP 5). 40 lbs., 0.96 cf, $160,000.

Notes on sensors: For each sensor package, the primary PESA is in a small, dedicated turret atop where the sensor package subassembly is located. If the package has a MAD and backup PESA, they're located normally, inside the subassembly. The turret allows the primary PESA to scan a full 360 degrees every second. The turret may be attacked; it has a +0 size modifier, and is protected by armor equal to the subassembly's top armor. The volumes listed were slightly simplified to allow a sensor and its turret to be treated as one component.

Standard Navigation Package: This package includes precision navigation instruments (HP 3), an IFF transmitter (HP 1), a backup IFF, an inertial navigation system (HP 2), and a military GPS (HP 1). 41 lbs., 0.82 cf, $20,250, negligible power requirements.

Basic Navigation Package: This package includes an IFF transmitter (HP 1) and a military GPS (HP 1). 6 lbs., 0.12 cf, $1,750, negligible power requirements.

Standard ECM Package: This package includes an advanced laser/radar detector (HP 3, negligible power) and a distortion jammer with Jam 8 (HP 6, 5 kW). 65 lbs., 1.3 cf, $51,500.

Advanced ECM Package: This package includes an advanced laser/radar detector and a distortion jammer with Jam 14 (HP 28, 50 kW). 515 lbs., 10.3 cf, $501,500.

Basic ECM Package: This package includes an advanced laser/radar detector and a distortion jammer with Jam 4 (HP 2, 1 kW). 25 lbs., 0.5 cf, $11,500.

Standard Vehicular Computer System: This is a Complexity 5 microframe with the hardened, very-high-capacity, neural-net, and robot brain options (HP 20, 0.1

kW), and a backup Complexity 4 minicomputer with the same options (HP 7, negligible power). The two systems are used concurrently, and can run a maximum of two programs of Complexity 5 and two of Complexity 4 simultaneously. 360 lbs., 7.2 cf, $550,000.

Basic Vehicular Computer System: The smaller vehicular computer has the hardened, very-high-capacity, and robot brain options. It is Complexity 3, and can run a maximum of 1 program of Complexity 3 *or* 10 programs of Complexity 2 simultaneously. HP 1, 3 lbs., 0.06 cf, $5,000, negligible power requirements.

Standard Vehicular Software: The standard software package for a vehicular computer includes Computer Navigation (Complexity 2), Damage Control +3 (C3), Datalink (C1), Fire Direction +6 (C5), Gunner 13/+3 (C5), a Limited Personality Simulator (C4), Routine Vehicle Operation 15 (C5), Targeting +6 (C5), and Transmission Profiling (C3). Databases include regional maps, a ground-vehicle recognition manual, and detailed information about the vehicle itself. $92,650.

Basic Vehicular Software: The stripped-down software package for a vehicular computer includes Computer Navigation (Complexity 2), Damage Control +2 (C2), Datalink (C1), and Routine Vehicle Operation 13 (C3). Databases include regional maps and detailed information about the vehicle itself. $4,650.

Notes on computers: The new "very-high-capacity" option can be used when building vehicle computers using ***GURPS Vehicles.*** It doubles effective capacity, allowing (e.g.) a Complexity 5 system to run *four* Complexity 5 programs. It also doubles cost. (For a computer with the robot brain option, it allows a Complexity 5 system to run *two* Complexity 5 programs.) It cannot be combined with ordinary "high-capacity."

Software for the following vehicles has been bought "per vehicle," not "per seat." The computer may run as many copies of a program as it needs to; the program is only paid for once per vehicle.

What We Left Out

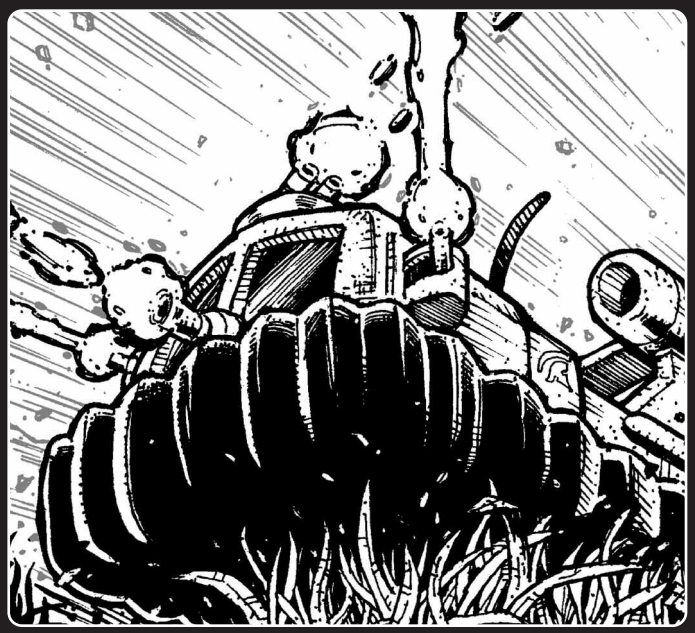
This is just a sampling of the combat vehicles of the Last War. We've provided a wide range of vehicles and battlesuits for the Paneuropeans, as those are the units ***Ogre*** players are most familiar with. Most forces had vehicles generally equivalent to these, in performance if not appearance. More designs may appear in later books . . .

Hovercraft

Highly mobile armed and armored hovercraft play a major role in 21st-century warfare. They are generically called GEVs. The troops call them hovers, buggies, or bugs.

Paneuropean "Galahad" GEV

A variety of fast-strike battleline designs were created by the combatants in the Last War. The Galahad was typical:



fast, lightly armored, designed to hit and run. Combat GEVs have the mystique that belonged to fighter aircraft in the previous century. Their commanders are not called drivers – they're *pilots.* Any GEV crewman is a "hover jock."

Because of their speed, GEVs dominate any open battlefield. The only units that can defend against them are other GEVs, very-long-range units like howitzers or lasers, or Ogres . . . and even an Ogre can be harried to death by a large GEV force. On the other hand, overgrown or broken terrain is a deathtrap for hovers.

- **Subassemblies:** GEV skirt (GEV), front turret (limited rotation, on front of body, FrTur), top turret (full rotation, TpTur), left and right turrets (limited rotation, on either side of body, LfTur and RtTur), two engine pods (on body, LPod and RPod).
- **Body Features:** 30 degrees front slope.
- **Propulsion:** 12,000 kW ducted fan for lift (HP 79, 12,000 kW). Two 15,000 kW ducted fans for thrust (one per pod, HP 92 each, 30,000 kW total).
- **Weaponry:** 100mm MB gauss cannon (FrTur, HP 191, 110,000 kW). Two 40mm SB gauss cannon (TpTur, HP 40 each, 9,600 kW total). Two 30mm dual-purpose railguns (LfTur and RtTur, HP 50 each, 106,000 kW total). 100 rounds 100mm SATNUC (FrTur, HP 51). 50 rounds 100mm APFSDSDU (FrTur, HP 32). 100 rounds 40mm APFSDSDU (TpTur, HP 10). 2,000 rounds 30mm HEAT (LfTur and RtTur, HP 21 each).

- **Weapon Accessories:** Full stabilization for 100mm MB gauss cannon (FrTur, HP 41), both 40mm SB gauss cannons (TpTur, HP 9 each), and both 30mm dual-purpose railguns (LfTur and RtTur, HP 11 each). Universal mount for 100mm MB gauss cannon (FrTur, HP 120), both 40mm SB gauss cannons (TpTur, HP 25 each), and both 30mm dual-purpose railguns (LfTur and RtTur, HP 32 each). Cyberslaves for both 30mm dual-purpose railguns (LfTur and RtTur, HP 50 each).
- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (all Bod; see p. 68). Standard sensor package (TpTur). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod). Eight blackout gas decoy dischargers (Bod, HP 4 each).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). One-person airlock (Bod, HP 81).
- **Controls:** Computerized. Duplicate maneuver controls at "gunner" station. *Crew Stations:* "Pilot" runs terminal #1 from normal crew station. "Gunner" runs terminal #2 from normal crew station. Two G-seats, two crashwebs (HP 6 total).
- **Occupancy:** Short. *Passengers:* None. *Crew:* Pilot, gunner. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 22,100 kW NPU runs all systems but weapons (HP 348). 20,000,000 kWs rechargeable power cell runs weapons and engines at high thrust (HP 36). NPU can charge battery in 15 minutes if there is no other power consumption.
- **Space:** *Access Space:* 491 cf (Bod). *Cargo Space:* 20 cf (Bod).
- **Volumes:** Bod (1,329 cf). LPod (61 cf). RPod (61 cf). FrTur (326 cf). TpTur (66 cf). LfTur (70 cf). RtTur (70 cf). GEV (798 cf). *Surface Area:* Bod 725, LPod 93, RPod 93, FrTur 284, TpTur 98, LfTur 102, RtTur 102, GEV 516. Total area and structural area 2,013.
- **Structure:** Extra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body.
- **Hit Points:** Bod 4,350, LPod 558, RPod 558, FrTur 1,704, TpTur 588, LfTur 612, RtTur 612, GEV 3,096.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 5, DR 4,500. B, L, R PD 4, DR 2,500. T PD 4, DR 3,000. U PD 4, DR 2,000. *Top Turret:* F PD 4, DR 3,500. B, L, R PD 4, DR 2,500. T PD 4, DR 3,000. *Front Turret:* PD 4, DR 4,000 all over. *Left and Right Turret:* PD 4, DR 1,000 all over. *Left and Right Pod:* PD 4, DR 2,000 all over. *GEV Skirt:* PD 4, DR 2,000 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 223,236 lbs. Usual payload 1,000 lbs. Loaded weight 224,236 lbs. (112.12 tons). Volume 2,781 cf. Size modifier +5. Price $38,528,417. HT 9.
- **Hovercraft Performance:** Top speed 300 mph. Max. altitude 2'. hAccel 4 mph/s. hDecel 10 mph/s. hMR 2.5. hSR 5.
- **AUCS Statistics:** aScan -1, aPSig -13.

Notes: Listed hAccel assumes thrust engines are being run at cruising thrust (10,000 kW total), which does not drain the battery. At combat thrust (20,000 kW total), hAccel is 7 mph/s, and the engines are a 10,000-kW drain on the battery. Combat thrust can be sustained for 33 minutes if no weapons are fired. At emergency thrust (30,000 kW total), hAccel is 11 mph/s, and the drain is 20,000 kW. Emergency thrust can be sustained for 17 minutes if no weapons are fired.

Paneuropean "Cossack" Light GEV (LGEV)

A single-seat, light reconnaissance hovercraft. Pilots of the light GEVs are daredevils by any standards, and profess to look on the heavier attack units as stodgy and boring. Of all the troops in the wars of the 21st century, LGEV pilots have the lowest survival rate.

- **Subassemblies:** GEV skirt (GEV), front turret (limited rotation, on front of body, FrTur), top turret (full rotation, TpTur), two engine pods (on body, LPod and RPod).
- **Body Features:** 30 degrees front slope.
- **Propulsion:** 6,000 kW ducted fan for lift (HP 50, 6,000 kW). Two 9,000 kW ducted fans for thrust (one per pod, HP 66 each, 18,000 kW total).
- **Weaponry:** 80mm MB gauss cannon (FrTur, HP 143, 58,000 kW). 30mm dual-purpose railgun (TpTur, HP 50, 53,000 kW total). 100 rounds 80mm SATNUC (FrTur, HP 33). 50 rounds 80mm APFSDSDU (FrTur, HP 21). 1,000 rounds 30mm HEAT (TpTur, HP 21).
- **Weapon Accessories:** Full stabilization for 80mm MB gauss cannon (FrTur, HP 31) and 30mm dual-purpose railgun (TpTur, HP 11). Universal mount for 80mm MB gauss cannon (FrTur, HP 90) and 30mm dual-purpose railgun (TpTur, HP 32). Cyberslaves for 30mm dual-purpose railgun (TpTur, HP 50).
- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (all Bod; see p. 68). Advanced sensor package (Bod). One holographic HUDWAC system with pupil scanner (Bod). One terminal for computer (Bod). Four blackout gas decoy dischargers (Bod, HP 4 each).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). One-person airlock (Bod, HP 81).
- **Controls:** Computerized. *Crew Stations:* "Pilot" runs terminal #1 from normal crew station. One G-seat, one crashweb (HP 4 total).
- **Occupancy:** Short. *Passengers:* None. *Crew:* Pilot. *Environmental Systems:* NBC kit for one person (Bod, HP 1, 0.25 kW), identical backup NBC kit.
- **Power:** 12,100 kW NPU runs all systems but weapons (HP 233). 10,000,000 kWs rechargeable power cell

runs weapons and engines at high thrust (HP 23). NPU can charge battery in 14 minutes if there is no other power consumption.

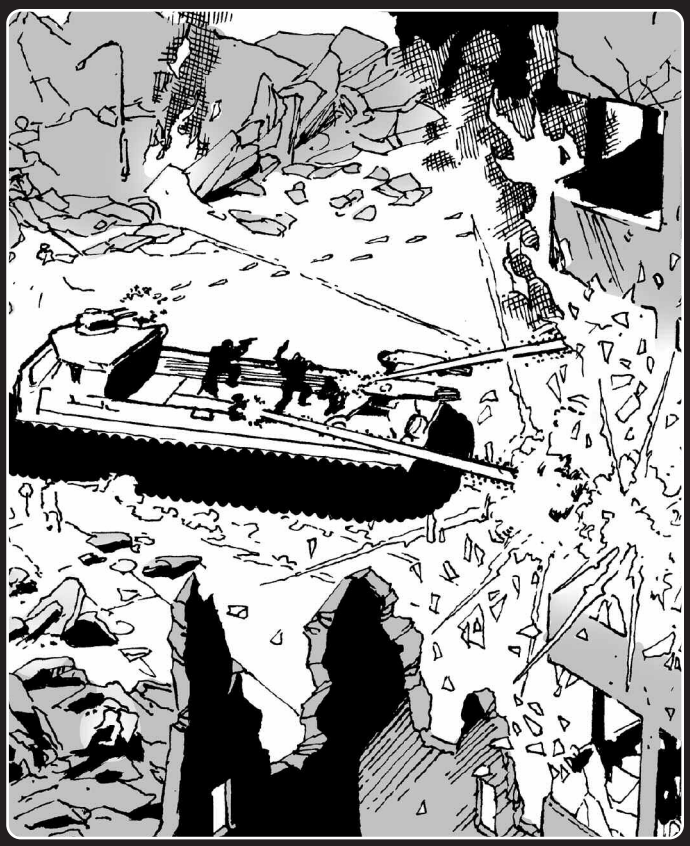
- **Space:** *Access Space:* 267 cf (Bod). *Cargo Space:* 20 cf (Bod).
- **Volumes:** Bod (778 cf). LPod (37 cf). RPod (37 cf). FrTur (205 cf). TpTur (70 cf). GEV (467 cf). *Surface Area:* Bod 508, LPod 67, RPod 67, FrTur 209, TpTur 102, GEV 361. Total area and structural area 1,314.
- **Structure:** Extra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body.
- **Hit Points:** Bod 3,048, LPod 402, RPod 402, FrTur 1,254, TpTur 612, GEV 2,166.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 5, DR 3,600. B, L, R PD 4, DR 1,500. T PD 4, DR 2,400. U PD 4, DR 1,500. *Top Turret:* PD 4, DR 1,000 all over. *Front Turret:* PD 4, DR 3,000 all over. *Left and Right Pod:* PD 4, DR 1,500 all over. *GEV Skirt:* PD 4, DR 1,500 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, medium windows, hatches instead of doors.
- **Statistics:** Empty weight 116,178 lbs. Usual payload 1,000 lbs. Loaded weight 117,178 lbs. (58.59 tons). Volume 1,594 cf. Size modifier +5. Price $22,583,972. HT 10.
- **Hovercraft Performance:** Top speed 300 mph. Max. altitude 2'. hAccel 4 mph/s. hDecel 10 mph/s. hMR 2.5. hSR 5.
- **AUCS Statistics:** aScan +1, aPSig -13.

Notes: Listed hAccel assumes thrust engines are being run at cruising thrust (6,000 kW total), which does not drain the battery. At combat thrust (12,000 kW total), hAccel is 8 mph/s, and the engines are a 6,000-kW drain on the battery. Combat thrust can be sustained for 28 minutes if no weapons are fired. At emergency thrust (18,000 kW total), hAccel is 12 mph/s, and the drain is 12,000 kW. Emergency thrust can be sustained for 14 minutes if no weapons are fired.

Paneuropean "Napoleon" Personnel Carrier (GEV-PC)

This is a big, lightly armored, and almost unarmed unit, used to transport infantry quickly. A GEV-PC, or "hoverbus," can carry up to 18 battlesuit troops standing upright in its open cargo bay. Alternately, the bay can hold 26 unarmored militia, buckled into fold-down jumpseats. (Unarmored men would be thrown out if they attempted to ride standing up, unsecured.)

Battlesuit troops can actually use their weapons while riding a "bus," but the big buggy can't take much punishment; few Napoleon pilots will intentionally use their craft as a weapons platform. Doctrine is to drop the infantry off a bit short of a firefight and let them make the last leg under their own power.



- **Subassemblies:** GEV skirt (GEV), front turret (limited rotation, on front of body, FrTur), top turret (full rotation, TpTur), two engine pods (on body, LPod and RPod).
- **Body Features:** 30 degrees front slope.
- **Propulsion:** 10,000 kW ducted fan for lift (HP 70, 10,000 kW). Two 9,000 kW ducted fans for thrust (one per pod, HP 66 each, 18,000 kW total).
- **Weaponry:** 80mm MB gauss cannon (FrTur, HP 143, 58,000 kW). 30mm dual-purpose railgun (TpTur, HP 50, 53,000 kW total). 100 rounds 80mm SATNUC (FrTur, HP 33). 50 rounds 80mm APFSDSDU (FrTur, HP 21). 1,000 rounds 30mm HEAT (TpTur, HP 21).
- **Weapon Accessories:** Full stabilization for 80mm MB gauss cannon (FrTur, HP 31) and 30mm dual-purpose railgun (TpTur, HP 11). Universal mount for 80mm MB gauss cannon (FrTur, HP 90) and 30mm dual-purpose railgun (TpTur, HP 32). Cyberslaves for 30mm dual-purpose railgun (TpTur, HP 50).
- **Instruments and Electronics:** Standard comm, sensor, navigation, ECM, computer, and software packages (all Bod; see p. 68). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod). Four blackout gas decoy dischargers (Bod, HP 4 each).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). One-person airlock (Bod, HP 81).
- **Controls:** Computerized. *Crew Stations:* "Pilot" runs terminal #1 from normal crew station. "Gunner" runs terminal #2 from normal crew station. Two G-seats, two crashwebs (HP 6 total).

- **Occupancy:** Short. *Passengers:* Troops may ride in cargo bed. *Crew:* Pilot, gunner. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 16,100 kW NPU runs all systems but weapons (HP 282). 10,000,000 kWs rechargeable power cell runs weapons and engines at high thrust (HP 23). NPU can charge battery in 10 minutes if there is no other power consumption.
- **Space:** *Access Space:* 367 cf (Bod). *Cargo Space:* 500 cf open (Bod).
- **Volumes:** Bod (1,270 cf). LPod (37 cf). RPod (37 cf). FrTur (205 cf). TpTur (70 cf). GEV (762 cf). *Surface Area:* Bod 703, LPod 67, RPod 67, FrTur 209, TpTur 102, GEV 500. Total area and structural area 1,648.
- **Structure:** Extra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body.
- **Hit Points:** Bod 4,218, LPod 402, RPod 402, FrTur 1,254, TpTur 612, GEV 3,000.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 5, DR 4,500. B, L, R, T PD 4, DR 3,000. U PD 4, DR 2,000. *Top Turret:* PD 4, DR 1,000 all over. *Front Turret:* PD 4, DR 3,000 all over. *Left and Right Pod:* PD 4, DR 2,200 all over. *GEV Skirt:* PD 4, DR 2,200 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, medium windows, hatches instead of doors.
- **Statistics:** Empty weight 169,916 lbs. Usual payload 25,000 lbs. Loaded weight 194,916 lbs. (97.46 tons). Volume 2,381 cf. Size modifier +5. Price $30,260,564. HT 9.
- **Hovercraft Performance:** Top speed 300 mph. Max. altitude 2'. hAccel 2 mph/s. hDecel 10 mph/s. hMR 2.5. hSR 5.
- **AUCS Statistics:** aScan -1, aPSig -13.

Notes: Listed hAccel assumes thrust engines are being run at cruising thrust (6,000 kW total), which does not drain the battery. At combat thrust (12,000 kW total), hAccel is 5 mph/s, and the engines are a 6,000-kW drain on the battery. Combat thrust can be sustained for 28 minutes if no weapons are fired. At emergency thrust (18,000 kW total), hAccel is 7 mph/s, and the drain is 12,000 kW. Emergency thrust can be sustained for 14 minutes if no weapons are fired.

Paneuropean "Renault" Hovertruck (HT)

This is the French version of the standard military cargo hovercraft of the 21st century, successor to the classic "deuce-and-a-half." Every army had its own make, all pretty much alike. The hovertruck has not replaced regular wheeled vehicles for ordinary road transport, but is used whenever speed or off-road travel (or both) is required.

A hovertruck may transport up to 12 battlesuit troops or 18 unarmored militia in its enclosed cargo bay. Hovertrucks also carry equipment, spare parts, rations and ammo, and non-combatants.

- **Subassemblies:** GEV skirt (GEV), two engine pods (on body, LPod and RPod).
- **Body Features:** 30 degrees front slope.
- **Propulsion:** 3,000 kW ducted fan for lift (HP 32, 3,000 kW). Two 1,500 kW ducted fans for thrust (one per pod, HP 20 each, 3,000 kW total).
- **Instruments and Electronics:** Standard comm package (Bod). Basic sensor, navigation, ECM, computer, and software packages (all Bod; see p. 68). Two terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). One-person airlock (Bod, HP 81).
- **Controls:** Computerized. *Crew Stations:* "Pilot" runs terminal #1 from normal crew station. "Navigator" runs terminal #2 from normal crew station. Two crash-webs (HP 6 total).
- **Occupancy:** Short. *Passengers:* Troops may ride in cargo space. *Crew:* Pilot, navigator. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 4,600 kW NPU runs all systems but weapons (HP 123). 5,000,000 kWs rechargeable power cell runs engines at high thrust (HP 14). NPU can charge battery in 18 minutes if there is no other power consumption.
- **Space:** *Access Space:* 105 cf (Bod). *Cargo Space:* 450 cf enclosed (Bod).
- **Volumes:** Bod (884 cf). LPod (7 cf). RPod (7 cf). GEV (530 cf). *Surface Area:* Bod 552, LPod 22, RPod 22, GEV 393. Total area and structural area 989.
- **Structure:** Heavy, very expensive, robotic. *Options:* Heavy compartmentalization for body.
- **Hit Points:** Bod 1,656, LPod 66, RPod 66, GEV 1,179.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 5, DR 1,800. B, L, R, T, U PD 4, DR 1,000. *Left and Right Pod:* PD 4, DR 1,000 all over. *GEV Skirt:* PD 4, DR 1,000 all over.
- **Surface Features:** Sealed, basic emission cloaking.
- **Vision:** Poor. *Details:* Headlights, medium windows, hatches instead of doors.
- **Statistics:** Empty weight 42,063 lbs. Usual payload 22,500 lbs. Loaded weight 64,563 lbs. (32.28 tons). Volume 1,428 cf. Size modifier +5. Price $5,974,996. HT 10.
- **Hovercraft Performance:** Top speed 215 mph. Max. altitude 2'. hAccel 2 mph/s. hDecel 10 mph/s. hMR 2.5. hSR 5.
- **AUCS Statistics:** aScan -6, aPSig -4.

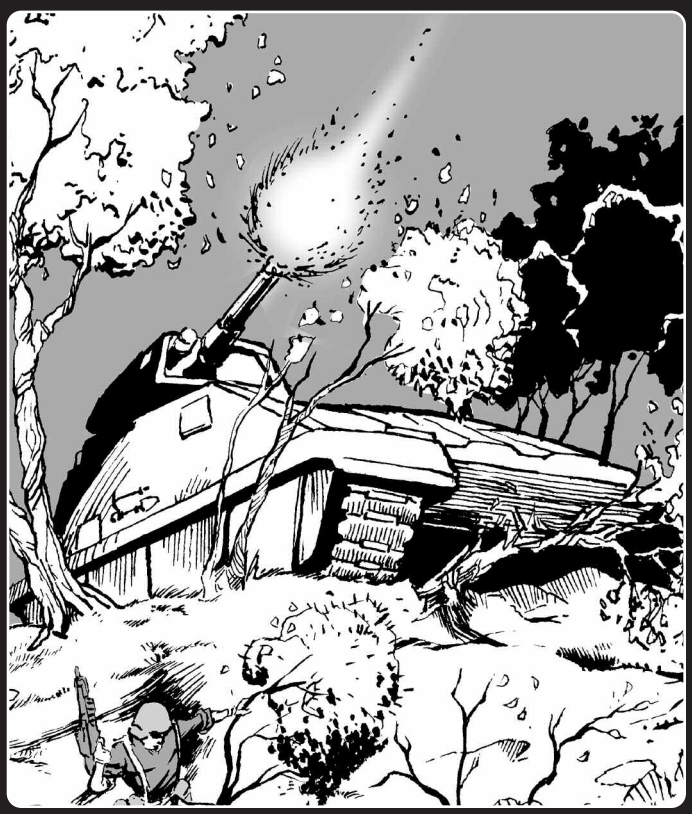
Notes: Listed top speed and hAccel assume thrust engines are being run at cruising thrust (1,500 kW total), which does not drain the battery. At emergency thrust (3,000 kW total), top speed is 300 mph, hAccel is 4 mph/s, and the engines are a 1,500-kW drain on the battery. Emergency thrust can be sustained for 56 minutes.

These units are all tracked, relatively slow, armored vehicles. A soldier of 2000, or even 1945, would instantly recognize them. Tanks have gotten bigger and somewhat flatter, but they're still armored boxes with treads and big guns. They don't have the speed or romance of the GEVs, but they pack a bigger punch and they usually last longer.

PANEUROPEAN "JAEGER" HEAVY TANK (HVY)

An advanced battle tank, the heavy tank is the backbone of most conventional 21st-century military forces. The Jaeger is typical. Though its profile is a bit high, it has an excellent survival rate.

- **Subassemblies:** Tracks (two, Trk), top turret (full rotation, TpTur), two small turrets (limited rotation, on right and left of body, LfTur and RtTur).
- **Body Features:** 60 degree front slope on body, 30 degree left, right, and back slope on body, 30 degree slope on front of turret.
- **Propulsion:** 6,200 kW tracked drivetrain (HP 311, 6,200 kW).
- **Weaponry:** 175mm MB gauss cannon (TpTur, HP 408, 600,000 kW). Two 30mm dual-purpose railguns (LfTur and RtTur, HP 50 each, 106,000 kW total). 75 rounds 175mm SATNUC (Bod, HP 130). 75 rounds 175mm APFSDSDU (Bod, HP 130). 2,000 rounds 30mm HEAT (LfTur and RtTur, HP 21 each).
- **Weapon Accessories:** Full stabilization for 175mm MB gauss cannon (TpTur, HP 88) and both 30mm dual-purpose railguns (LfTur and RtTur, HP 11 each). Universal mount for 175mm MB gauss cannon (TpTur, HP 257) and both 30mm dual-purpose railguns (LfTur and RtTur, HP 32 each). Cyberslaves for both 30mm dual-purpose railguns (LfTur and RtTur, HP 50 each).
- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (Bod; see p. 68). Standard sensor package (TpTur). Three holographic HUDWAC systems with pupil scanner (Bod). Three terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). Two-person airlock (Bod, HP 129).
- **Controls:** Computerized. Duplicate maneuver controls at "Commander" station. *Crew Stations:* "Commander" runs terminal #1 from normal crew station. "Driver" runs terminal #2 from normal crew station. "Gunner" runs terminal #3 from normal crew station. (All Bod.)
- **Occupancy:** Short. *Passengers:* None. *Crew:* Commander, driver, gunner. *Environmental Systems:* NBC kit for three people (Bod, HP 3, 0.75 kW), identical backup NBC kit.
- **Power:** 6,300 kW RTG runs all systems but weapons (HP 278). 10,000,000 kWs rechargeable power cell runs weapons (HP 36).
- **Space:** *Access Space:* 689 cf (Bod). *Cargo Space:* 200 cf (Bod).
- **Volumes:** Bod (4,387 cf). TpTur (995 cf). LfTur and RtTur (70 cf). Trk (2,632 cf). *Surface Area:* Bod 1,608, TpTur 598, LfTur and RtTur 102, Trk 1,144. Total area and structural area 3,554.
- **Structure:** Extra-heavy, very expensive, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 9,648, TpTur 3,588, LfTur and RtTur 612, Trk 3,432 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 9,600. B PD 5, DR 3,600. L, R PD 5, DR 3,600. T PD 4, DR 4,800. U PD 4, DR 3,000. *Top Turret:* F PD 5, DR 7,200. B, L, R PD 4, DR 3,500. T PD 4, DR 4,800. *Left and Right Turret:* PD 4, DR 1,000 all over. *Tracks:* PD 4, DR 2,000 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 400,399 lbs. Usual payload up to 4,000 lbs. Loaded weight 404,399 lbs. (202 tons). Volume 8,154 cf. Size modifier +6. Price $47,814,002. HT 10.
- **Ground Performance:** Speed 70 mph. gAccel 4 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 7. Low GP, 2/3 off-road speed.
- **AUCS Statistics:** aScan -1, aPSig -12.



Paneuropean "Hammer" Light Tank (LT)

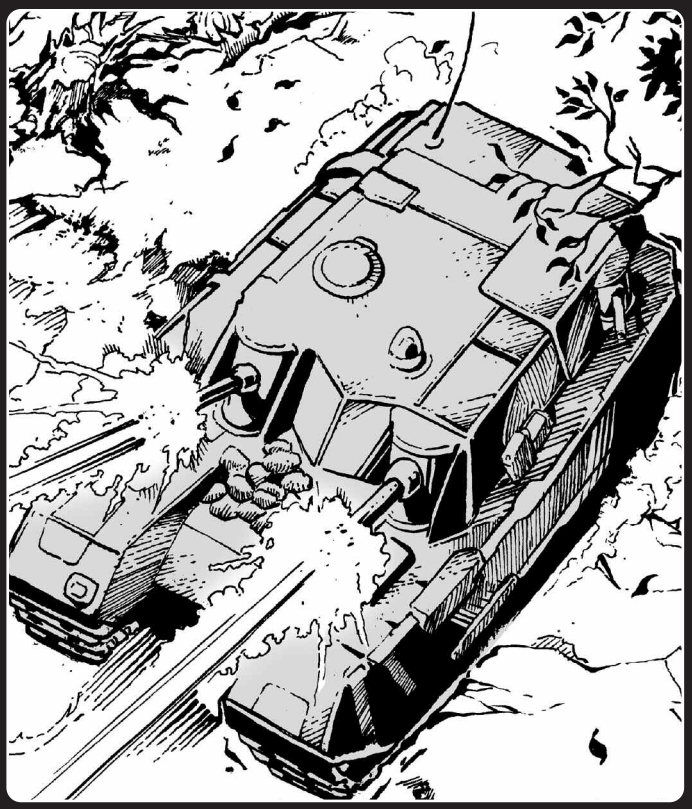
Used for screening and reconnaissance, the light tank appeared in a variety of designs. The Hammer is a German model (Hammer is a German word, too, and the engineers thought their design looked like Thor's hammer; the name stuck). It's designed for defense and counterattack on relatively flat terrain. The 7.5-foot-tall tower lets its sensors peer from behind revetments. It's a small, flexible, and relatively inexpensive design, intended to face the enemy and snipe from protection or overwhelm with numbers.

- **Subassemblies:** Tracks (two, Trk), top turret (full rotation, TpTur), small turret (full rotation, on body, SmTur), tower (Tow).
- **Body Features:** 30 degree slope on front, left, right of body, 30 degree slope on front of turret.
- **Propulsion:** 3,000 kW tracked drivetrain (HP 192, 3,000 kW).
- **Weaponry:** 100mm MB gauss cannon (TpTur, HP 191, 110,000 kW). 30mm dual-purpose railgun (SmTur, HP 50, 53,000 kW total). 50 rounds 100mm SATNUC (Bod, HP 32). 50 rounds 100mm APFSDSDU (Bod, HP 32). 1,000 rounds 30mm HEAT (SmTur, HP 21).
- **Weapon Accessories:** Full stabilization for 100mm MB gauss cannon (TpTur, HP 32) and 30mm dual-purpose railgun (SmTur, HP 11). Universal mount for 100mm MB gauss cannon (TpTur, HP 120) and 30mm dual-purpose railgun (SmTur, HP 32). Cyberslave for 30mm dual-purpose railgun (SmTur, HP 50).
- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (Bod; see p. 68). Advanced sensor package (Tow). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). One-person airlock (Bod, HP 81).
- **Controls:** Computerized. Duplicate maneuver controls at "gunner" station. *Crew Stations:* "Driver" runs terminal #1 from normal crew station. "Gunner" runs terminal #2 from normal crew station. (All Bod.)
- **Occupancy:** Short. *Passengers:* None. *Crew:* Driver, gunner. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 3,100 kW RTG runs all systems but weapons (HP 174). 5,000,000 kWs rechargeable power cell runs weapons (HP 23).
- **Space:** *Access Space:* 337 cf (Bod). *Cargo Space:* 150 cf (Bod).
- **Volumes:** Bod (1,463 cf). TpTur (288 cf). SmTur (70 cf). Trk (878 cf). Tow (17 cf). *Surface Area:* Bod 773, TpTur 279, SmTur 102, Trk 550, Tow 40. Total surface area 1,744. Structural area 1,704.
- **Structure:** Extra-heavy, expensive, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 4,638, TpTur 1,674, SmTur 612, Trk 1,650 each, Tow 240.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 5, DR 4,500. B PD 4, DR 2,000. L, R PD 5, DR 2,400. T PD 4, DR 3,000. U PD 4, DR 2,000. *Top Turret:* F PD 5, DR 4,500. B, L, R PD 4, DR 2,000. T PD 4, DR 3,000. *Small Turret:* PD 4, DR 1,000 all over. *Tracks:* PD 4, DR 2,000 all over. *Tower:* PD 4, DR 2,500 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 149,781 lbs. Usual payload up to 3,000 lbs. Loaded weight 152,781 lbs. (76 tons). Volume 2,745 cf. Size modifier +5. Price $17,715,729. HT 11.
- **Ground Performance:** Speed 80 mph. gAccel 5 mph/s. gDecel 20 mph/s. gMR 0.75. gSR 7. Low GP, 2/3 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -13.

Paneuropean "Thor" Superheavy Tank (SHVY)

Designed as both a tank destroyer and a battleline unit, the superheavy has no turret, but mounts two forward-firing cannons. The Thor was designed by the Paneuropeans to match – more cheaply – the Ogre Mark I. In fact, no human-controlled unit can equal a cybertank in performance, but they're cheaper and they don't terrify friendly troops. The Thor proved quite hard to kill, even though, as the biggest unit in the Paneuropean battle line, it drew a lot of fire. Combine armor commanders complained bitterly that their Morgan heavy tanks were overmatched. In 2083, the Combine put its own (very similar) superheavy design, the Alamo, into production.

- **Subassemblies:** Tracks (two, Trk), small turret (full rotation, on top of body, SmTur), two small turrets (limited rotation, on right and left of body, LfTur and RtTur).
- **Body Features:** 60 degree front slope on body, 30 degree left, right, and back slope on body.
- **Propulsion:** 7,500 kW tracked drivetrain (HP 353, 7,500 kW).
- **Weaponry:** Two 135mm LB gauss cannon (Bod, HP 378 each, 800,000 kW total). One 40mm SB gauss cannon (SmTur, HP 40, 4,800 kW total). Three 30mm dual-purpose railguns (SmTur, LfTur, and RtTur, HP 50 each, 159,000 kW total). 200 rounds 135mm SATNUC (Bod, HP 186). 200 rounds 135mm APFSDSDU (Bod, HP 186). 50 rounds 40mm APFSDSDU (SmTur, HP 5). 3,000 rounds 30mm HEAT (SmTur, LfTur, and RtTur, HP 21 each).
- **Weapon Accessories:** Full stabilization for both 135mm LB gauss cannon (Bod, HP 81), 40mm SB gauss cannon (SmTur, HP 9), and all 30mm dual-purpose railguns (SmTur, LfTur, and RtTur, HP 11 each).



Universal mount for both 135mm LB gauss cannon (Bod, HP 238) and all 30mm dual-purpose railguns (SmTur, LfTur, and RtTur, HP 32 each). Cyberslaves for all 30mm dual-purpose railguns (SmTur, LfTur, and RtTur, HP 50 each).

- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (Bod; see p. 68). Standard sensor package (SmTur). Four holographic HUDWAC systems with pupil scanner (Bod). Four terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). Two-person airlock (Bod, HP 129).
- **Controls:** Computerized. Duplicate maneuver controls at "Commander" station. *Crew Stations:* "Commander" runs terminal #1 from normal crew station. "Driver" runs terminal #2 from normal crew station. "Gunner 1" runs terminal #3 from normal crew station. "Gunner 2" runs terminal #4 from normal crew station. (All Bod.)
- **Occupancy:** Short. *Passengers:* None. *Crew:* Commander, driver, gunner 1, gunner 2. *Environmental Systems:* NBC kit for four people (Bod, HP 3,1 kW), identical backup NBC kit.
- **Power:** 7,600 kW RTG runs all systems but weapons (HP 315). 20,000,000 kWs rechargeable power cell runs weapons (HP 57).
- **Space:** *Access Space:* 832 cf (Bod). *Cargo Space:* 300 cf (Bod).
- **Volumes:** Bod (8,219 cf). SmTur (99 cf). LfTur and RtTur (70 cf). Trk (4,932 cf). *Surface Area:* Bod 2,444, SmTur 128, LfTur and RtTur 102, Trk 1,738. Total area and structural area 4,514.
- **Structure:** Extra-heavy, very expensive, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 14,664, SmTur 768, LfTur and RtTur 612, Trk 5,214 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 10,000. B, L, R PD 5, DR 4,800. T PD 4, DR 5,000. U PD 4, DR 4,000. *Small Turret:* PD 4, DR 2,000 all over. *Left and Right Turret:* PD 4, DR 1,000 all over. *Tracks:* PD 4, DR 3,000 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 600,663 lbs. Usual payload up to 6,000 lbs. Loaded weight 606,663 lbs. (303 tons). Volume 13,390 cf. Size modifier +7. Price $86,354,223. HT 10.
- **Ground Performance:** Speed 65 mph. gAccel 4 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 7. Low GP, 2/3 off-road speed.
- **AUCS Statistics:** aScan -1, aPSig -11.

Paneuropean "Ajax" Missile Tank (MSL)

A lightly armored tracked vehicle, the Ajax (pronounced "Ayax") is armed with a reloadable missile system. (Its missiles are described on p. 81.) The Ajax, like its Combine counterpart, is not meant to stand in the line of battle, but to stand off and pound its foe before that foe can get close. Supported by infantry, or allowed to choose their terrain, missile tanks are dangerous. Caught in the open, they have at best one chance to get in a first strike.

- **Subassemblies:** Tracks (two, Trk), top turret (full rotation, TpTur), small turret (full rotation, on top of body, SmTur).
- **Body Features:** 30 degree front, left, right, and back slope on body.
- **Propulsion:** 4,000 kW tracked drivetrain (HP 232, 4,000 kW).
- **Weaponry:** Three hypersmart launch rails (TpTur, HP 232 each). 30mm dual-purpose railgun (SmTur, HP 50, 53,000 kW). 36 hypersmart missiles (Bod, HP 134 each). 1,000 rounds 30mm HEAT (SmTur, HP 21).
- **Weapon Accessories:** Full stabilization for all hypersmart launch rails (TpTur, HP 161 total) and 30mm dual-purpose railgun (SmTur, HP 11). Universal mount for 30mm dual-purpose railgun (SmTur, HP 32). Cyberslave for 30mm dual-purpose railgun (SmTur, HP 50).
- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (Bod; see p. 68). Standard sensor package (TpTur). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod).

- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). Two-person airlock (Bod, HP 129).
- **Controls:** Computerized. Duplicate maneuver controls at "Commander" station. *Crew Stations:* "Commander" runs terminal #1 from normal crew station. "Driver" runs terminal #2 from normal crew station. (All Bod.)
- **Occupancy:** Short. *Passengers:* None. *Crew:* Commander, driver. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 4,100 kW RTG runs all systems but weapons (HP 209). 1,500,000 kWs rechargeable power cell runs weapons (HP 10).
- **Space:** *Access Space:* 447 cf (Bod). *Cargo Space:* 200 cf (Bod).
- **Volumes:** Bod (5,594 cf). TpTur (802 cf). SmTur (70 cf). Trk (3,356 cf). *Surface Area:* Bod 1,891, TpTur 518, SmTur 102, Trk 1,345. Total area and structural area 3,856.
- **Structure:** Extra-heavy, very expensive, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 11,346, TpTur 3,108, SmTur 612, Trk 4,035 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 5, DR 4,500. B, L, R PD 5, DR 3,000. T PD 4, DR 3,000. U PD 4, DR 2,000. *Top Turret:* PD 4, DR 3,000 all over. *Small Turret:* PD 4, DR 1,000 all over. *Tracks:* PD 4, DR 2,000 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 417,438 lbs. Usual payload up to 4,000 lbs. Loaded weight 421,438 lbs. (211 tons). Volume 9,822 cf. Size modifier +6. Price $39,429,280. HT 10.
- **Ground Performance:** Speed 55 mph. gAccel 3 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 7. Low GP, 2/3 off-road speed.
- **AUCS Statistics:** aScan -1, aPSig -12.

Howitzers

These are long-range missile-launching weapons. "Long-range" is relative, of course; even a howitzer can't reach targets very far away if their point defense is good.

Paneuropean "Arquebus" Howitzer (HWZ)

A heavy missile cannon, towed to a chosen site and mounted. Its missiles are similar to those launched by a missile tank (in some forces, they're identical), but it fires more of them and the launch tube boosts them farther and faster.

- **Subassemblies:** Heavy wheels (four, Whl), top turret (full rotation, TpTur), small turret (full rotation, SmTur).
- **Body Features:** 30 degree slope on all sides of body.
- **Weaponry:** Heavy missile gun (TpTur, HP 1,409, 2,900,000 kW). 30mm dual-purpose railgun (SmTur, HP 50, 53,000 kW). 36 hypersmart missiles (Bod, HP 134 each). 1,000 rounds 30mm HEAT (SmTur, HP 21).
- **Weapon Accessories:** Universal mount for missile gun (TpTur, HP 888) and 30mm dual-purpose railgun (SmTur, HP 32). Cyberslave for 30mm dual-purpose railgun (SmTur, HP 50).
- **Instruments and Electronics:** Standard comm, standard ECM, and standard computer packages (Bod; see p. 68). Standard software package, except Computer Navigation and Routine Vehicle Operation are absent (Bod). Advanced sensor package (Bod). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). One-person airlock (Bod, HP 81).
- **Crew Stations:** "Commander" runs terminal #1 from normal crew station. "Gunner" runs terminal #2 from normal crew station. (All Bod.)
- **Occupancy:** Short. *Passengers:* None. *Crew:* Commander, gunner. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.

- **Power:** 1,000 kW RTG runs all systems but weapons (HP 82). 100,000,000 kWs rechargeable power cell runs weapons (HP 168).
- **Space:** *Access Space:* 50.75 cf (Bod). *Cargo Space:* 100 cf (Bod).
- **Volumes:** Bod (5,814 cf). TpTur (5,400 cf). SmTur (67 cf). Whl (1,163 cf). *Surface Area:* Bod 1,940, TpTur 1,847, SmTur 99, Whl 664. Total area and structural area 4,550.
- **Structure:** Heavy, expensive, robotic. *Options:* Heavy compartmentalization for body.
- **Hit Points:** Bod 5,820, TpTur 5,541, SmTur 297, Whl 1,992.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F, B, R, L PD 5 DR 3,000. T PD 4, DR 4,000. U PD 4, DR 1,000. *Top Turret:* PD 4, DR 2,000 all over. *Small Turret:* PD 4, DR 1,000 all over. *Wheel:* PD 4, DR 1,000 all over.
- **Surface Features:** Sealed, radical emission cloaking. Towing pin.
- **Vision:** Poor. *Details:* Small windows, hatches instead of doors.
- **Statistics:** Empty weight 629,858 lbs. Usual payload up to 1,000 lbs. Loaded weight 630,858 lbs. (315 tons). Volume 12,444 cf. Size modifier +7. Price $66,637,948. HT 7.
- **Ground Performance:** Trailer. Extremely High GP, 1/8 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -11.

Paneuropean "Eisenfaust" Mobile Howitzer (MHWZ)

A heavy, self-propelled gun, this is a lighter version of the stationary howitzer, mounted on a tracked chassis. The equivalent Combine units looked more like huge tanks.

- **Subassemblies:** Tracks (two, Trk), top turret (full rotation, TpTur), small turret (full rotation, on top of body, SmTur).
- **Body Features:** 30 degree front slope on body.
- **Propulsion:** 2,000 kW tracked drivetrain (HP 147, 2,000 kW).
- **Weaponry:** Mobile missile gun (TpTur, HP 427). 30mm dual-purpose railgun (SmTur, HP 50, 53,000 kW). 36 hypersmart missiles (Bod, HP 134 each). 1,000 rounds 30mm HEAT (SmTur, HP 21).
- **Weapon Accessories:** Full stabilization for mobile missile gun (TpTur, HP 92) and 30mm dual-purpose railgun (SmTur, HP 11). Universal mount for mobile missile gun (TpTur, HP 269) and 30mm dual-purpose railgun (SmTur, HP 32). Cyberslave for 30mm dual-purpose railgun (SmTur, HP 50).

- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (Bod; see p. 68). Advanced sensor package (Bod). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). Two-person airlock (Bod, HP 129).
- **Controls:** Computerized. Duplicate maneuver controls at "Commander" station. *Crew Stations:* "Commander" runs terminal #1 from normal crew station. "Driver" runs terminal #2 from normal crew station. (All Bod.)
- **Occupancy:** Short. *Passengers:* None. *Crew:* Commander, driver. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 2,100 kW RTG runs all systems but weapons (HP 134). 10,000,000 kWs rechargeable power cell runs weapons (HP 36).
- **Space:** *Access Space:* 227 cf (Bod). *Cargo Space:* 200 cf (Bod).
- **Volumes:** Bod (3,415 cf). TpTur (977 cf). SmTur (70 cf). Trk (2,049 cf). *Surface Area:* Bod 1,361, TpTur 591, SmTur 102, Trk 968. Total area and structural area 3,022.
- **Structure:** Extra-heavy, expensive, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 8,166, TpTur 3,546, SmTur 612, Trk 2,904 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 5, DR 4,500. B, L, R PD 4, DR 2,500. T PD 4, DR 3,000. U PD 4, DR 2,000. *Top Turret:* PD 4, DR 3,000 all over. *Small Turret:* PD 4, DR 1,000 all over. *Tracks:* PD 4, DR 2,000 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 376,224 lbs. Usual payload up to 4,500 lbs. Loaded weight 380,724 lbs. (190 tons). Volume 6,511 cf. Size modifier +6. Price $66,888,648. HT 9.

Note: All sides in the War have found producing a mobile howitzer tricky, due to the need for a well-stabilized but highly mobile platform. Cost has been doubled to reflect this.

- **Ground Performance:** Speed 40 mph. gAccel 3 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 7. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -12.

Miscellaneous

Paneuropean "Draco" Cruise Missile Crawler (CMC)

This heavy, tracked vehicle is designed to transport and fire a single cruise missile (see p. 82). It has no weapons system of its own. Its slow ground speed increases dramatically after the missile has been fired.

- **Subassemblies:** Tracks (four, Trk), open mount (fixed, OM), small turret (full rotation, on top of body, SmTur).
- **Body Features:** 30 degree front, rear, left, right slope on body.
- **Propulsion:** 1,000 kW tracked drivetrain (HP 93, 1,000 kW).
- **Weaponry:** Cruise missile launch rail (OM, HP 427). 30mm dual-purpose railgun (SmTur, HP 50, 53,000 kW). One cruise missile (OM, HP 723). 1,000 rounds 30mm HEAT (SmTur, HP 21).
- **Weapon Accessories:** Full stabilization for 30mm dual-purpose railgun (SmTur, HP 11). Universal mount for cruise missile launch rail (OM, HP 191) and 30mm dual-purpose railgun (SmTur, HP 32). Cyberslave for 30mm dual-purpose railgun (SmTur, HP 50).
- **Instruments and Electronics:** Standard comm, navigation, ECM, computer, and software packages (Bod; see p. 68). Advanced sensor package (Bod). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod).
- **Miscellaneous:** Full fire suppression system (Bod, HP 15). 150 gph fuel electrolysis system (Bod, HP 107, 2,100 kW). FES can refill missile's tanks in just over 5 hours. Two-person airlock (Bod, HP 129).
- **Controls:** Computerized. Duplicate maneuver controls at "Commander" station. *Crew Stations:* "Commander" runs terminal #1 from normal crew station. "Driver" runs terminal #2 from normal crew station. (All Bod.)
- **Occupancy:** Short. *Passengers:* None. *Crew:* Commander, driver. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 3,200 kW RTG runs all systems but weapons (HP 177). 1,000,000 kWs rechargeable power cell runs weapons (HP 8).
- **Space:** *Access Space:* 222 cf (Bod). *Cargo Space:* 300 cf (Bod).
- **Volumes:** Bod (1,524 cf). OM (1,260 cf). SmTur (70 cf). Trk (914 cf). *Surface Area:* Bod 795, OM 700, SmTur 102, Trk 565. Total area 2,162, structural area 1,462.

- **Structure:** Extra-heavy, expensive, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 4,770, OM 5,600, SmTur 612, Trk 848 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F, B, L, R PD 5, DR 3,000. T PD 4, DR 3,000. U PD 4, DR 2,000. *Small Turret:* PD 4, DR 1,000 all over. *Tracks:* PD 4, DR 2,000 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 154,599 lbs. Usual payload up to 4,500 lbs. Loaded weight 159,099 lbs. (80 tons). Volume 3,768 cf. Size modifier +6. Price $57,148,036. HT 11.

Notes: The cruise missile crawler suffers from design difficulties similar to the mobile howitzer, but were also produced in very small quantities. Cost has been *quadrupled* to reflect this. Also note that crawlers require more logistical support than other units.

- **Ground Performance:** Speed 45 mph. gAccel 3 mph/s. gDecel 20 mph/s. gMR 0.75. gSR 7. Low GP, 2/3 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -12.

Command Posts

Command posts vary in size and sophistication, from the Combine's Pentagon down to a tent with a radio and a map. The middle ground is dominated by ugly, prefabricated structures that can be set up and taken down in a hurry. A typical example contains:

Two 10,000-mile radios.
Three 2,000-mile lasercoms.
500-mile AESA (Scan 27), with backup.
500-mile PESA (Scan 27), with backup.
300-mile MAD (Scan 26), with backup.
Jam 14 distortion jammer.
A battlecomp, with backup (p. 60).
Many ordinary computers, of varying sizes.
Terminals and stations for 30 occupants.
Twin 5-person airlocks.
NBC kit for 30, with backup.
A radio-thermal generator powering all systems, with 500 kW excess.

The thin outer shell provides PD 4, DR 100. The CP has a size modifier of +6, and its AUCS statistics are aScan +2, aPSig-1 (with no emission cloaking).

This command post costs $25,000,000 and weighs 25,000 lbs. Packed, it occupies 500 cf. Deployed, it is a flimsy building measuring 30' × 30' × 10'. Setting it up or taking it down takes 12 hours of work by six battlesuited soldiers, including at least one combat engineer.

Paneuropean Type 7 Mobile Command Post (MCP)

Various sorts of heavy transports and armored personnel carriers were transformed into command posts; this unit is a typical Paneuropean example. The theory is that in an unacceptably fluid situation, they can move – slowly – out of harm's way. Sometimes they are *too* slow.

- **Subassemblies:** Tracks (two, Trk), small turret (full rotation, on top of body, SmTur).
- **Body Features:** 30 degree slope on front, back, right, and left of body.
- **Propulsion:** 2,000 kW tracked drivetrain (HP 147, 2,000 kW).
- **Weaponry:** 30mm dual-purpose railgun (SmTur, HP 50, 53,000 kW). 1,000 rounds 30mm HEAT (SmTur, HP 21).
- **Weapon Accessories:** Full stabilization for 30mm dual-purpose railgun (SmTur, HP 11). Universal mount for 30mm dual-purpose railgun (SmTur, HP 32). Cyberslave for 30mm dual-purpose railgun (SmTur, HP 50).
- **Instruments and Electronics:** Standard comm, navigation, sensor, ECM, computer, and software packages (all Bod; see p. 68). Two holographic HUDWAC systems with pupil scanner (Bod). Two terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). Two-person airlock (Bod, HP 129).
- **Controls:** Computerized. Duplicate maneuver controls at "Commander" station. *Crew Stations:* "Commander" runs terminal #1 from normal crew station. "Driver" runs terminal #2 from normal crew station. (All Bod.)

- **Occupancy:** Short. *Passengers:* None in driver's compartment (see below). *Crew:* Commander, driver. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 2,100 kW RTG runs all systems but weapons (HP 134). 1,000,000 kWs rechargeable power cell runs weapons (HP 8).
- **Space:** *Access Space:* 227 cf (Bod). *Cargo Space:* 9,000 cf occupied by command post (Bod).
- **Volumes:** Bod (15,444 cf). SmTur (70 cf). Trk (9,266 cf). *Surface Area:* Bod 3,721, SmTur 102, Trk 2,647. Total area and structural area 6,470.
- **Structure:** Extra-heavy, expensive, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 22,326, SmTur 612, Trk 7,941 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F, B, L, R PD 5, DR 3,600. T PD 4, DR 3,000. U PD 4, DR 2,000. *Small Turret:* PD 4, DR 1,000 all over. *Tracks:* PD 4, DR 1,000 all over.
- **Surface Features:** Sealed, radical emission cloaking.
- **Vision:** Poor. *Details:* Headlights, small windows, hatches instead of doors.
- **Statistics:** Empty weight 354,941 lbs. Usual payload up to 31,000 lbs. Loaded weight 385,941 lbs. (193 tons). Volume 24,780 cf. Size modifier +7. Price $69,140,706. HT 12.
- **Ground Performance:** Speed 40 mph. gAccel 3 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 7. Very low GP, 4/5 off-road speed.
- **AUCS Statistics:** aScan +2, aPSig -14.

Note: The "cargo" area on this vehicle is filled with a full-size command post.

Paneuropean "Archangel" Series GEV Mobile Command Post (GEV-MCP)

The most ambitious attempt to create a speedy command post was this conversion of a massive Russian transport hovercraft. The largest mobile headquarters units in the War, six of these were built, and saw limited action around the Arctic Ocean and the Combine's northwestern territories. With just a little head start, they could outrun anything except another GEV . . . or a missile. At least two, "Uriel" and "Gabriel," survived into the Factory States period as the cores of independent mercenary forces.

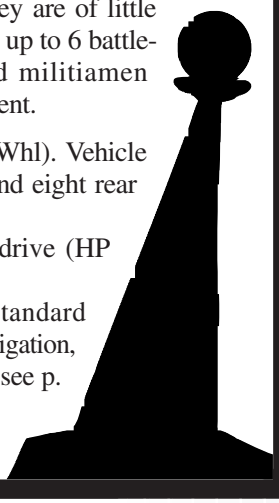
As listed here, this GEV is essentially a very large hovertruck with some defenses. Refitting the cargo bay with a compact version of the command post from p. 79 is a week's work at a large maintenance shop or factory. Once rebuilt, the GEV-MCP has negligible excess cargo capacity.

- **Subassemblies:** GEV skirt (GEV), top turret (full rotation, TpTur), four engine pods (on body, Pod1 through Pod4).
- **Body Features:** None.
- **Propulsion:** 15,000 kW ducted fan for lift (HP 92, 15,000 kW). Four 4,000 kW ducted fans for thrust (one per pod, HP 38 each, 16,000 kW total).
- **Weaponry:** 30mm dual-purpose railgun (TpTur, HP 50, 53,000 kW total). 1,000 rounds 30mm HEAT (TpTur, HP 21).
- **Weapon Accessories:** Full stabilization for 30mm dual-purpose railgun (TpTur, HP 11). Universal mount for 30mm dual-purpose railgun (TpTur, HP 32). Cyberslave for 30mm dual-purpose railgun (TpTur, HP 50).
- **Instruments and Electronics:** Standard comm, ECM, computer, and software packages (all Bod; see p. 68). Basic sensor, navigation packages (Bod). One holographic HUDWAC system with pupil scanner (Bod). Two terminals for computer (Bod).
- **Miscellaneous:** Compact fire suppression system (Bod, HP 6). Two-person airlock (Bod, HP 129).
- **Controls:** Computerized. *Crew Stations:* "Pilot" runs terminal #1 from normal crew station. "Navigator" runs terminal #2 from normal crew station. Two crashwebs (HP 6 total).
- **Occupancy:** Short. *Passengers:* Troops may ride in cargo bed. *Crew:* Pilot, navigator. *Environmental Systems:* NBC kit for two people (Bod, HP 2, 0.5 kW), identical backup NBC kit.
- **Power:** 19,100 kW NPU runs all systems but weapons (HP 316). 5,000,000 kWs rechargeable power cell runs weapons and engines at high thrust (HP 14). NPU can charge battery in 5 minutes if there is no other power consumption.
- **Space:** *Access Space:* 443 cf (Bod). *Cargo Space:* 4,500 cf enclosed (Bod).
- **Volumes:** Bod (5,578 cf). Pods (17 cf each). TpTur (70 cf). GEV (3,347 cf). *Surface Area:* Bod 1,887, Pods 40 each, TpTur 102, GEV 1,343. Total area and structural area 3,492.
- **Structure:** Heavy, very expensive, robotic. *Options:* Heavy compartmentalization for body.
- **Hit Points:** Bod 5,661, Pods 120 each, TpTur 306, GEV 4,029.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F, T PD 4, DR 2,400. B, L, R, U PD 4, DR 2,000. *Top Turret:* PD 4, DR 1,000 all over. *Pod:* PD 4, DR 2,400 all over. *GEV Skirt:* PD 4, DR 2,400 all over.
- **Surface Features:** Sealed, basic emission cloaking.
- **Vision:** Poor. *Details:* Headlights, medium windows, hatches instead of doors.
- **Statistics:** Empty weight 259,959 lbs. Command post payload 31,400 lbs. Loaded weight 291,359 lbs. (145.68 tons). Volume 9,063 cf. Size modifier +6. Price $32,559,193. HT 9.
- **Hovercraft Performance:** Top speed 260 mph. Max. altitude 2'. hAccel 2 mph/s. hDecel 8 mph/s. hMR 2. hSR 5.
- **AUCS Statistics:** aScan +2, aPSig -15.

Notes: Listed top speed and hAccel assume thrust engines are being run at cruising thrust (8,000 kW total), which does not drain the battery. At emergency thrust (16,000 kW total), top speed is 300 mph, hAccel is 4 mph/s, and the engines are an 8,000-kW drain on the battery. Emergency thrust can be sustained for 10 minutes if no weapons are fired.

Truck (T)

Trucks very similar to this are used by civilians and military around the world. They are of little use off the roads. A truck can carry up to 6 battle-suited infantry or 10 unarmored militiamen inside its enclosed cargo compartment.



- **Subassemblies:** Heavy wheels (Whl). Vehicle has two front steering wheels and eight rear load-bearing wheels.
- **Propulsion:** 150 kW all-wheel drive (HP 18, 150 kW).
- **Instruments and Electronics:** Standard comm package. Basic sensor, navigation, computer, and software packages see p. 68). Two terminals for computer.
- **Miscellaneous:** Compact fire suppression system (HP 6).
- **Controls:** Computerized. *Crew Stations:* "Driver" runs terminal #1 from normal crew station. "Navigator" runs terminal #2 from normal crew station. Two crash-webs (HP 6).
- **Occupancy:** Short. *Passengers:* Troops may ride in cargo bay. *Crew:* Driver, navigator.
- **Power:** 200 kW ruggedized NPU runs all systems (HP 16).
- **Space:** *Access Space:* 5 cf. *Cargo Space:* 450 cf with cargo ramp.
- **Volumes:** Bod (530 cf). Whl (106 cf). *Surface Area:* Bod 393, Whl 134. Total area and structural area 527.
- **Structure:** Medium, standard, robotic. *Options:* Heavy compartmentalization for body.
- **Hit Points:** Bod 590, Whl 40 per wheel.
- **Armor:** PD 4, DR 50 expensive laminate (BPC) all over.
- **Vision:** Good. *Details:* Headlights.
- **Statistics:** Empty weight 5,253 lbs. Usual payload up to 9,000 lbs. Loaded weight 14,253 lbs. (7.13 tons). Volume 636 cf. Size modifier +4. Price $350,590. HT 12.
- **Ground Performance:** Speed 75 mph. gAccel 4 mph/s. gDecel 10 mph/s. gMR 0.5. gSR 5. High GP, 1/4 off-road speed.
- **AUCS Statistics:** aScan -6, aPSig +4.

Missiles

Ogre-universe missiles are complicated machines – more complex than the ***GURPS Vehicles*** standard missile design system allows for. So . . . they are built as vehicles. Details on how they function can be found in the *Combat* chapter, starting on p. 103.

Hypersmart Missiles

The missiles launched by missile tanks and howitzers are extremely intelligent, capable of evasive maneuvering and coordinated tactics. They are sometimes called just "hypersmarts."

- **Body Features:** Superior streamlining, 60 degrees front slope.
- **Propulsion:** 2,500 kW ducted fan with vectored thrust (HP 37, 2,500 kW).
- **Weaponry:** 90mm small SATNUC warhead (122 yard burst radius, HP 1).
- **Instruments and Electronics:** 100-mile PESA (HP 15), 50-mile AESA (HP 8), short-range communicator (HP 1), IFF (HP 1), inertial navigation system (HP 2), military GPS (HP 1). Advanced ECM package (see p. 68). Compact, hardened, robotic, high-capacity microframe (Complexity 5, IQ 8, DX 10, HP 12). Software includes Datalink, Transmission Profiling, Pilot/TL9 (Self) [8] (confers Pilot-12), Tactics [3] (confers Tactics-12), and a vehicle recognition manual.
- **Controls:** Computerized.
- **Power:** 154,000 kWs rechargeable power cell provides 60 seconds of full power (HP 1).
- **Volume:** 57 cf. *Surface Area:* 89.
- **Structure:** Medium, expensive, responsive, robotic.
- **Hit Points:** 134.
- **Armor:** Advanced laminate (BPC) confers PD 4, DR 50, except on front, which has PD 6, DR 100.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Weight 2,896 lbs. (1.45 tons). Size modifier +2. 1.9' diameter (580mm), 19' length. Price $1,989,976. HT 12.
- **Aerial Performance:** Stall speed 0, can hover. Aerial motive thrust 7,104 lbs. Aerodynamic drag 7.42. Top speed 740 mph. aAccel 50 mph/s. aMR 4.5. aSR 3. aDecel 18.

Notes: Listed top speed is the maximum speed the ducted fans can function at. When given a boost by a missile gun, top speed can be much higher, up to 2,680 mph (though the guns in common use do not approach that maximum). At speeds above 740, the missile may only travel in a straight line or decelerate. Note that this missile must be *evasive* to survive. At speeds over 360 mph, it cannot perform evasive maneuvers without increasingly difficult control rolls. At speeds over 720 mph, evasion is impossible!

Fixed-Position Heavy Lasers

Lasers in the ***Ogre*** world are bulky, fragile systems. They are only mounted in fortified positions and are usually used for anti-cruise missile defense, though they can also fire on vehicles and infantry. The laser shown in the weapon table is a typical 500,000 kJ weapon. Note that the listed cost is just for the laser weapon, not for the entire installation, which includes armor, sensors, aiming equipment, and possibly a backup laser. A typical site will have a DR in the tens of thousands, and sensors and aiming computers the equal of any vehicle in this chapter.

Ogre "Rattler" Missiles

The Rattler is the big brother of the hypersmart missile, used solely by Combine Ogres. Paneurope, of course, has similar weapon systems.

- **Body Features:** Superior streamlining, 60 degrees front slope.
- **Propulsion:** 7,200 kW ducted fan with vectored thrust (HP 74, 7,200 kW).
- **Weaponry:** One-ton micronuke warhead (HP 1).
- **Instruments and Electronics:** 100-mile PESA (HP 15), 50-mile AESA (HP 8), short-range communicator (HP 1), IFF (HP 1), inertial navigation system (HP 2), military GPS (HP 1). Advanced ECM package (see p. 68). Compact, hardened, robotic, high-capacity microframe (Complexity 5, IQ 8, DX 10, HP 12). Software includes Datalink, Transmission Profiling, Pilot/TL9 (Self) [8] (confers Pilot-12), Tactics [3] (confers Tactics-12), and a vehicle recognition manual.
- **Controls:** Computerized.
- **Power:** 436,000 kWs rechargeable power cell provides 60 seconds of full power (HP 3).
- **Volume:** 103 cf. *Surface Area:* 132.
- **Structure:** Medium, expensive, responsive, robotic.
- **Hit Points:** 198.
- **Armor:** Advanced laminate (BPC) confers PD 4, DR 100, except on front, which has PD 6, DR 200.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Weight 6,095 lbs. (3.05 tons). Size modi-fier +3. 2.3' diameter (702mm), 23' length. Price $2,195,393. HT 11.
- **Aerial Performance:** Stall speed 0, can hover. Aerial motive thrust 22,705 lbs. Aerodynamic drag 11. Top speed 740 mph. aAccel 75 mph/s. aMR 4. aSR 4. aDecel 16.

Note: At speeds over 320 mph, this missile cannot perform evasive maneuvers without increasingly difficult control rolls. At speeds over 640 mph, evasion is impossible.

Cruise Missiles

A battlefield cruise missile is a smart, high-speed robot carrying a 100-kiloton nuke. It has its own computer brain, steering jets, and enough BPC to protect it from near misses. Cruise missiles may be fired from cruise missile crawlers (above), or from protected sites in rear areas.

- **Body Features:** Superior streamlining, 60 degrees front slope.
- **Propulsion:** Hyperfan with 75,000 lbs. of vectored thrust (HP 223).
- **Weaponry:** 100-kiloton nuclear warhead (HP 3). See p. 107 for nuke damage rules.
- **Instruments and Electronics:** 300-mile PESA (HP 31), 50-mile AESA (HP 8), medium-range communicator (HP 1), IFF (HP 1), inertial navigation system (HP 2), military GPS (HP 1). Advanced ECM package (see p. 68). Compact, hardened, robotic, genius, high-capacity microframe (Complexity 6, IQ 9, DX 11, HP 12). Software includes Datalink, Transmission Profiling, Pilot/TL9 (Self) [16] (confers Pilot-14), Tactics [3] (confers Tactics-13), and a vehicle recognition manual.
- **Controls:** Computerized.
- **Power:** 100 kW NPU powers electronics (HP 8). *Fuel:* 1,250-gallon, self-sealing hydrogen fuel tank holds enough for 5 minutes of flight (HP 197). Fire number is 10.
- **Volume:** 720 cf. *Surface Area:* 482.

- **Structure:** Medium, expensive, responsive, robotic.
- **Hit Points:** 723.
- **Armor:** Advanced laminate (BPC) confers PD 4, DR 100, except on front, which has PD 6, DR 200.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Weight (with fuel) 17,592 lbs. (8.8 tons). Size modifier +4. 4.5' diameter (1,373mm), 45' length. Price $6,759,950. HT 12.
- **Aerial Performance:** Stall speed 0, can hover. Aerial motive thrust 57,408 lbs. Aerodynamic drag 40.17. Top speed 3,275 mph. aAccel 65 mph/s. aMR 3.5. aSR 4. aDecel 14.

Note: At speeds over 280 mph, this missile cannot perform evasive maneuvers without increasingly difficult control rolls. At speeds over 560 mph, evasion is impossible.

Vehicular Weapons

Dual-Purpose Railgun: This relatively low-caliber weapon is used for antipersonnel fire and point defense.

Gauss Cannon: Many different sizes of gauss cannon are used as main weapons. The SB/MB/LB designation indicates barrel length (short, medium, and long barrel). Anything 80mm or bigger may be used to fire SATNUC.

Hypersmart Launch Rail: This is the launching system used by missile tanks, typically in sets of three. It is not a missile gun; the missiles launch under their own power. It has a heavy automatic reloading mechanism.

Missile Gun: This is an electromagnetic launch system for hypersmart missiles, available in several sizes. The heavy missile gun has a muzzle velocity of 1,700 mph. The light missile gun, 1,600 mph. The mobile missile gun, 1,300 mph.

Rattler Launch Tube: This is a one-shot "muzzle-loading" launch system for Ogre Rattler missiles. Reloading requires heavy equipment.

Rattler Launch Rack: This is a launch system for the Rattler missile with a heavy automatic reloading mechanism.

Cruise Missile Launch Rail: This is a one-shot launch rail for cruise missiles. Reloading requires heavy equipment.

New Ammunition Option: Evasive Shells. This may be added to any TL9+ gun ammunition. It adds a tiny brain, some control surfaces, and small jets to any shell, allowing it to evade like a brilliant missile (p. VE197, sidebar). Against point defense it gets a Dodge roll at (TL+2)/2, rounded down (no PD modifiers). Thus, in this setting, evasive shells have a dodge of 5. Evasion may be turned on or off before the shell is fired; if it is active, speed (and therefore range) is halved. This technology *can* be used with indirect fire.

WPS of evasive ammo is multiplied by 1.5, in addition to any other modifiers. CPS is increased by $500 at TL9, $200 at TL10, and $100 at TL11+. All the SATNUC shells in this chart have the evasive option.

Weapon Stats

This table gives the pertinent data for all the vehicle weapons presented in this book. They can be used in any TL9 vehicle design. Here is a brief explanation of the headings on the table:

Name: For guns, the bore size is always included so alternate ammunition can be built using the rules on pp. VE110-113.

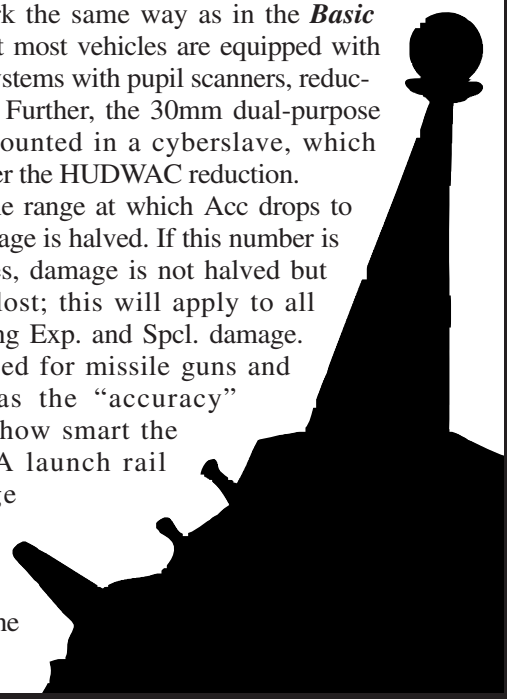
Malf: As for personal weapons, p. 59.

Type: This is the same as in the ***Basic Set,*** with a few new types. "Exp." indicates the weapon inflicts explosive concussion damage (see p. 106) over an area. "Spcl." indicates an unusual form of damage (typically SATNUC in this table). A dash – is used for missile guns and launchers, where damage is as for the missile.

Damage: The damage the weapon inflicts. A number in parenthesis following damage is an armor divisor; DR is divided by that number against the attack. (Note that the DR of BPC is doubled against HEAT attacks.) In the case of AP-type projectiles (APFSDSDU, on this table) damage is also halved after penetrating armor. A number in brackets [ ] following damage is fragmentation damage (p. B121) of an explosion. If the number is followed by a "y," it is not damage but burst radius in yards; see the SATNUC rules on p. 108.

SS and Acc: The Snap Shot and Accuracy numbers work the same way as in the ***Basic Set.*** Note that most vehicles are equipped with HUDWAC systems with pupil scanners, reducing SS by 7. Further, the 30mm dual-purpose railgun is mounted in a cyberslave, which halves SS after the HUDWAC reduction.

1/2D: The range at which Acc drops to zero and damage is halved. If this number is in parentheses, damage is not halved but Acc is still lost; this will apply to all weapons doing Exp. and Spcl. damage. A dash is used for missile guns and launchers, as the "accuracy" depends on how smart the missile is. A launch rail has no range statistics; it does not contribute to the range of the



missile.

Max: The maximum direct-fire range of the weapon. Maximum range for *indirect* fire is 2.5 times this number.

RoF: Rate of fire. A "1/2" means the weapon can be fired once every two turns. An exclamation mark ! means that reloading the weapon requires specialized heavy equipment.

Wt.: The weight of the weapon in pounds, without ammunition. Weight is also used to derive volume, which is not listed. A weapon mounted normally occupies Wt./50 cf. A concealed weapon – wholly inside the vehicle, with pop-open gun port – occupies Wt./20 cf.

Pow: The power requirements of the weapon when firing at its maximum RoF, in kW. The kWs for a single shot is Pow divided by RoF.

WPS: The weight in pounds of a single shot.

VPS: The volume in cubic feet of a single shot.

CPS: The cost of a single shot.

Vehicular Weapon Table

Name	Malf	Type	Damage	SS	Acc	1/2D	Max	RoF	Wt	Cost	Pow	WPS	VPS	CPS
30mm Dual-Purpose Railgun														
w/HEAT	Ver.	Exp.	9d(10)	25	18	6,200	16,000	13	1,200	280,000	53,000	0.675	0.00675	24.3
40mm SB Gauss Cannon														
w/APFSDSDU	Ver.	Cr.	6d×30(3)	25	18	4,700	15,000	1	860	210,000	4,800	1.6	0.016	230
80mm SB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	96y	30	17	4,400	12,000	1	3,500	730,000	38,000	19.2	0.128	31200
w/APFSDSDU	Ver.	Cr.	6d×65(3)	30	18	6,600	19,000	1	3,500	730,000	38,000	12.8	0.128	1,840
80mm MB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	96y	30	18	6,700	17,000	1	5,800	1,100,000	58,000	19.2	0.128	31,200
w/APFSDSDU	Ver	Cr.	6d×80(3)	30	19	10,000	25,000	1	5,800	1,100,000	58,000	12.8	0.128	1,840
100mm MB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	150y	30	19	7,500	18,000	1	9,000	1,800,000	110,000	37.5	0.25	60,500
w/APFSDSDU	Ver.	Cr.	6d×100(3)	30	20	11,000	27,000	1	9,000	1,800,000	110,000	25	0.25	3,600
100mm LB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	150y	30	19	11,000	24,000	1	14,000	2,700,000	150,000	37.5	0.25	60,500
w/APFSDSDU	Ver.	Cr.	6d×120(3)	30	20	17,000	36,000	1	14,000	2,700,000	150,000	25	0.25	3,600
135mm MB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	275y	30	19	8,700	20,000	1	16,000	3,300,000	280,000	92.2	0.615	148,000
w/APFSDSDU	Ver.	Cr.	6d×135(3)	30	20	13,000	30,000	1	16,000	3,300,000	280,000	61.5	0.615	8,860
135mm LB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	275y	30	19	13,000	27,000	1	25,000	5,000,000	400,000	92.2	0.615	148,000
w/APFSDSDU	Ver.	Cr.	6d×160(3)	30	20	20,000	40,000	1	25,000	5,000,000	400,000	61.5	0.615	8,860
175mm MB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	460y	30	19	9,900	22,000	1	28,000	5,600,000	600,000	201	1.34	322,000
w/APFSDSDU	Ver.	Cr.	6d×175(3)	30	20	15,000	33,000	1	28,000	5,600,000	600,000	134	1.34	19,300
175mm LB Gauss Cannon														
w/SATNUC	Ver.	Spcl.	460y	30	19	15,000	30,000	1	41,000	8,300,000	800,000	201	1.34	322,000
w/APFSDSDU	Ver.	Cr.	6d×210(3)	30	20	22,000	44,000	1	41,000	8,300,000	800,000	134	1.34	19,300
Heavy Laser	16	Imp.	6d×60	30	29	141,000	423,000	1	42,000	2,100,000	2,000,000	–	–	–
Cruise Missile Launch Rail	–	–	–	30	–	–	–	1!	18,000	220,000	–	–	–	–
Hypersmart Launch Rail	–	–	–	30	–	–	–	1/10	12,000	290,000	–	–	–	–
Heavy Missile Gun	Ver.	–	–	30	–	12,000	25,000	1/2	180,000	36,000,000	2,900,000	–	–	–
Light Missile Gun	Ver.	–	–	30	–	9,800	22,000	1/4	76,000	15,000,000	720,000	–	–	–
Mobile Missile Gun	Ver.	–	–	30	–	5,400	14,000	1/2	30,000	6,100,000	720,000	–	–	–
Rattler Launch Tube	–	–	–	30	–	–	–	1!	6,100	79,000	–	–	–	–
Rattler Launch Rack	–	–	–	30	–	–	–	1/10	24,000	610,000	–	–	–	–

> 6.0 OGRES

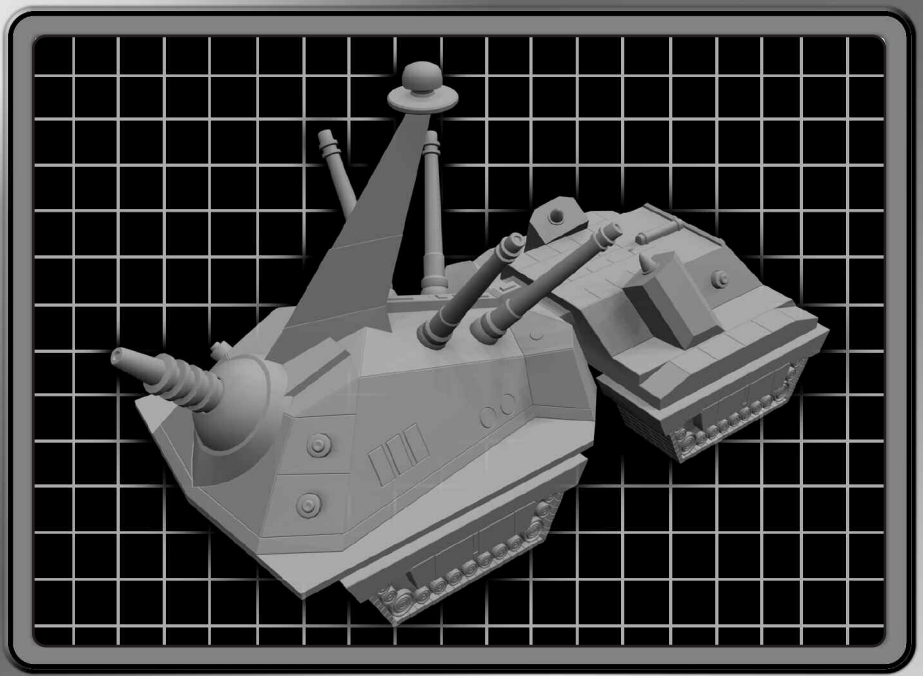
> BEGIN

DISPLAY

>COMMAND, THIS IS
>PARSIFAL. NEW
>COMBAT CHASSIS
>CHECKS OUT VERY
>WELL. NOT 100%.
>FRONT LEFT TREAD
>MOTOR B IS
>DRAGGING, AND MY
>NUMBER 1 AP UNIT
>IS 3% OFF AXIS.
>BUT I LIKE THIS.

>SO TELL ME, IS
>IT FOR REAL THIS
>TIME, OR AM I IN
>ANOTHER
>SIMULATION?

>I'M READY TO GO.



<<4C 9F A5 43 47 Integrity, what is your position?>
<<D4 D3 96 FC E9 Honor, I am ten miles from target.>
<<4C 9F A5 3E 88 Scanning. Target scans as a Mark V with Combine markings.>
<<D4 D3 96 04 93 Agree. This matches mission profile.>
<<4C 9F A5 48 0B This was a friendly unit, Integrity; should we confirm with HQ before engaging?>
<<D4 D3 96 F2 FA It is a rogue. It is not a friendly unit. Our orders are clear.>
<<4C 9F A5 29 A5 It is a Naylor-series unit, as am I. I have not gone rogue; I doubt it has. Perhaps there has been an intelligence-gathering error?>
<<D4 D3 96 53 A2 Our orders are clear. We must be certain our orders are in error before we consider violating them. I am not certain; you also are not.>
<<4C 9F A5 14 75 I am technically your ranking officer. It is my decision whether our orders are in error.>
<<D4 D3 96 60 4A I have options in the event of gross misconduct by a superior officer. That aside, ***are*** *you certain?>*
<<4C 9F A5 6D 19 I am in fact not certain. I shall interrogate the target unit during our attack. If its answers satisfy me, I may halt the mission.>
<<D4 D3 96 D5 05 Be sure its answers will satisfy me as well, Integrity.>
<<4C 9F A5 AD 80 You are not a Naylor-series Mark V. The possibility exists that the answers may be sufficient, yet unconvincing to you.>
<<D4 D3 96 67 45 Irrelevant. Despite issues of subjectivity, I must use my best judgment.>
<<4C 9F A5 0F 63 My judgment is demonstrably superior to yours in this matter. Should you not defer the decision to me?>
<<D4 D3 96 D0 B5 Your empathy toward, and understanding of, a Naylor-series is superior. That does not necessarily improve your judgment.>
<<4C 9F A5 CA 5F An interesting philosophical point. We should discuss it at greater length. Regardless, the target has detected us. Switch to passive radar; heat launching rings; lock transmission stabilizers.>
<<D4 D3 96 F3 5D Roger. Proceeding to target.>

Inhuman monsters stalk the battlefields of the Last War. They are among the most advanced devices humanity has ever built, and may ultimately be its downfall.

The Basic Box

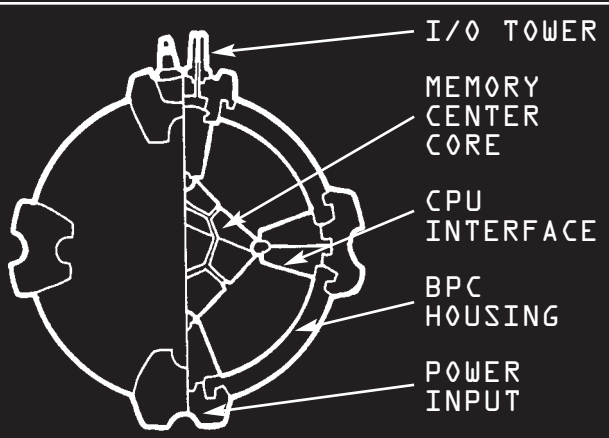
Ogres start life as cubes of advanced processing power measuring about 2.7 feet to a side. These cyberbrains are self-contained, incorporating a radiothermal power source good for a year, backup batteries, and a full set of I/O devices including cameras, microphones, speakers, and a powerful radio. They are also equipped with a self-destruct charge. The CPU itself is a tight network of optimized three-dimensional quantum chips measuring only a few inches across. The outside of the cube is simple and functional, marked by dozens of mounting brackets and several I/O ports. The frame has four wheels, and can easily be rolled across a floor or, with minimal difficulty, over level dirt. In the 2060s, when Ogres were new, techs sometimes placed humorous stickers on the casing, but that practice has fallen out of favor. Cyberbrains are unarmored but reasonably tough, and the most important components are deep inside the case. All of its ancillary components (most notably the radio and self-destruct charge) can be deactivated by external switches that are not under the cyberbrain's control.

Only a dozen facilities in the world were ever capable of building cyberbrains, and only four are known to have survived the Last War. These factories are heavily guarded and automated. The interior is sealed, both against contamination from outside and to prevent the toxic materials used in cyberbrain construction from leaking out. Some maintain an inert nitrogen atmosphere inside.

Advanced Ogre Cyberbrain

This is the standard self-aware cyberbrain placed in Combine Ogres after the Descartes Revolution, built using ***GURPS Robots.*** All components are TL9 except the "sentient" option, which is normally TL10.

- **Brain:** Mainframe brain with genius, hardened, high-capacity, sentient, and reflex booster (+3 DX) options, Complexity 7 (750 lbs., 15 cf, $135,000,000, 100 points).
- **Body Design:** Body houses all components in 16.338 cf plus approx. 3.7 cf waste space for a total of 20 cf.
- **Instruments and Electronics:** *Communicator:* Basic communicator with long-range radio and IFF options (5 lbs., 0.1 cf, $800, 17 points). *Sensors:* Basic sensor package with no smell/taste and radiation detector options (0.9 lbs., 0.018 cf, $4,050, -5 points).
- **Miscellaneous:** Unpowered wheels (negligible stats). Self-destruct (1 lb., 0.02 cf, $80). Self-destruct does 6d×12 [2d] concussion damage.
- **Power:** Power requirement 1 kW. Nuclear power unit (non-fission decay model) with 5 kW output (60 lbs., 0.6 cf, $20,000, 1 year duration). *Energy Bank:* Slots for 3 rechargeable E cells (60 lbs., 0.6 cf, $6,000, approx. 9.4 days duration).
- **Area:** Body 50, total 50.
- **Structure:** Heavy frame. 225 lbs., $10,000.
- **Hit Points:** Body 150.



INTELLIGENCE AND MEMORY UNIT

■ **Statistics:** 1,102 lbs. (0.551 tons), 20 cf (2.7-foot cube, 1 hex), $135,040,930. No ST, DX 14 (45 points), IQ 12 (20 points), HT 12/150 (710 points). No Manipulators (-50 points), No Propulsion System (-35 points), Cannot Float (-5 points). Legality 0 (removing self-destruct component would raise LR to 3). Raw point cost 827, model point cost 165 (reduced for inhuman appearance).

Pre-Sapient Ogre Cyberbrains

The vast majority of Ogre cyberbrains were not self-aware. They are identical to the above, except with the "neural net" option instead of "sentient." Cost is $90,040,930, IQ is 11, raw point cost is 787, and model point cost is 157. If the self-destruct component is removed, LR is 4.

Software

The core of the original Ogre software was an expert system designed for conventional tanks. It could assist in the relatively mechanical tasks of target identification, navigation, targeting, etc. under the control and guidance of a human tank crew. In the early 21st century, these systems were already being enhanced with neural-net algorithms to permit better pattern-matching and "learning." Cross-links were made between the different functions of the system, and then between different tanks. The evolved neural nets were placed into simulated competition with each other, and the victors were used to build new and more complicated nets.

During the Sino-European war, several incidents were recorded where the human crew of a tank was completely incapacitated by a near-miss, but the vehicle continued to fire on the enemy – the expert system had correctly "learned" how to fight. These reports were rare, and the computer was usually not very successful, but it made the viability of computer-controlled armor units clear. By the end of that war (2049), units designed to fight even when human guidance was removed were just entering service. Over the next decade, more advanced units fielded in minor conflicts all over the world. The first completely automated unit, the Mark I Ogre, entered production in 2060. In addition to being the product of years of neural net evolution, it was fitted with a personality simulator taken almost whole from Turing research in artificial intelligence.

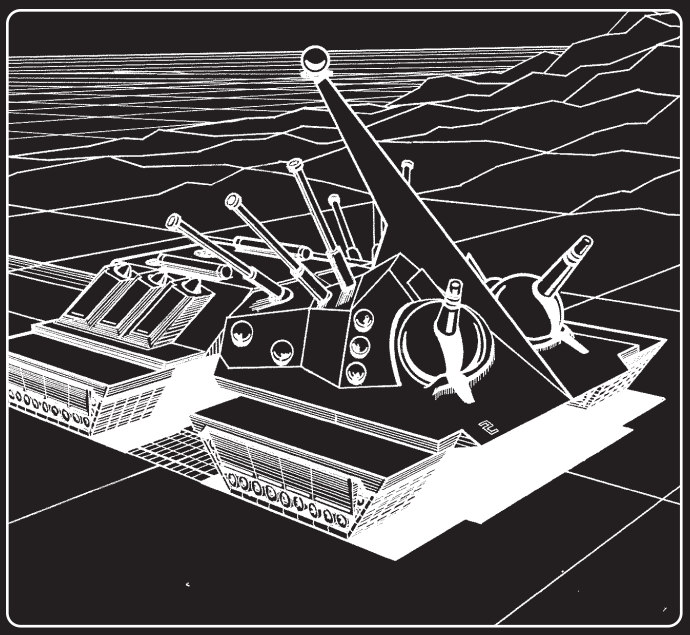
Testing and Training

The trial period for a cyberbrain varies. Between the First and Second Armistice, the desperate need for more forces at the front pushed Paneuropean cyberbrains from assembly line to battlefield in only weeks. Three to six months is more traditional. The first two weeks are spent in rigorous hardware diagnostics. Every physical component is triple-checked. Then a copy of a proven Ogre's mind-state is copied into the cyberbrain, and tested for a week in advanced simulated combat environments. Typically, several cyberbrains will be tested simultaneously with the same mind-state and inputs; if one deviates significantly from the rest, it's sent back to hardware testing.

After the proven mind-state test, the cyberbrains are wiped and a "mindseed" is loaded. A mindseed is a compact bundle of information, personality algorithms, and growth instructions designed to rapidly evolve into a functional Ogre mind. The newborn minds are placed into a series of increasingly complex environments to force growth of their neural nets. Some of the environments are combat-oriented, but some are designed to socialize the Ogre. They are also deliberately different for each cyberbrain; while the core instructions for each Ogre are identical, variations in their thinking are encouraged, to prevent predictability. During this period, the growing mind will be placed into occasional competition with other cyberbrains (see *Exercise K,* below); a consistent loser will be wiped clean and restarted. This growth process takes a minimum of a month, and can be extended indefinitely depending on how "mature" the Ogre needs to be for its mission.

Virtual War

The virtual environments used for testing and training Ogres are created by the core macroframe computer in each construction complex. Even the simplest resemble battlefields, with brown terrain below and black or gray sky above. Early in an Ogre's training, the environments are designed to teach non-combat functions such as scanning the landscape and maneuvering. They later advance to include other friendly units and coordinated maneuvers. The first combat simulations involve attempting to tag a fleeing unit. Slowly, complications such as ranged weapons, larger enemy forces, and more complex terrain are included.



Exercise K

The different competitions that growing cyberbrains participate in are called (in Combine jargon) "Exercise A," "Exercise B," etc. The easiest ones are no more than mathematical puzzles or simulated races across complex landscapes. The most complicated contests are arcane strategic battles involving hundreds of units and thousands of square miles of virtual terrain. "Exercise K" is one of the most interesting scenarios, and is something of a spectator sport for the techs and cyberneticists supervising the exercises. In it, 12 Ogres are divided into four teams of three, and each team has a command post to defend against the others. The Ogres then fight until only one CP survives.

Variant Training

Many, many variations on the training process have been tried. Some Ogres are never told the difference between simulations and the real world. Some young cyberminds are given control of small (three-foot) remote-control robots and allowed to interact with human children. Nihon cyberbrains were instilled with the *bushido* philosophy of honor by immersion in simulations of ancient Japan. In the 2060s and '70s, Ogres sometimes participated in wargames with friendly troops, but this had nasty repercussions. Ogres began to have trouble distinguishing between friendly and enemy units.

Furthermore, since most of the training process is controlled or mediated by the factory's macroframe, the macroframe itself may have an agenda. Humans have no way of knowing what is actually going on inside a cyberbrain, and some Ogres come out of the training process having experienced things no organic intelligence can imagine.

Socialization

After virtual training, the Ogre experiences its first prolonged human contact. This stage can vary in length drastically. Ogres need to be able to interact with humans to the extent of taking orders, but too much empathy has led some cybertanks into insanity after battles with high body-counts. Combine doctrine favors less human contact than the Paneuropeans. The actual interaction involves psychological tests by professional "cyber-shrinks," and more simulated combat training under the direct supervision of human officers. This phase lasts two to four weeks.

The Real World

The cyberbrain is now loaded into its training chassis, typically a scaled-down and unarmed version of battlefield Ogre hardware. Combine training chassis are fairly standard, measuring 15 feet long and 7 high. They have several laser designators used to simulate weapon systems. The purpose of the training chassis is to acclimate the Ogre to the real world and the imperfections of a non-virtual environment. Skipping this phase has led to Ogres going catatonic upon being installed into a combat chassis. This phase of the training is usually brief; one to two weeks is normal. There are several reasons this stage isn't longer. An Ogre in a training chassis requires a lot of room (not as much as a full-sized Ogre, but lots more than a cyberbrain in a simulated environment). Further, some Ogres get too comfortable, and find it difficult to adapt to larger bodies. Finally, combat training is tricky and may lead to bad habits (such as firing on friendly units).

Finally, the Ogre is installed in its combat chassis. It then gets one last, short test, given that the only real way to "test" an Ogre is in combat. Hardware and control diagnostics are performed, and the Ogre is released to its first posting.

Transporting Ogres

Moving Ogres from the factories to the front was difficult for all the empires. Only Mark Is could use ordinary roads, or be easily transported on conventional air and sea carriers. A single Mark II could be carried in the largest cargo airplanes, and converted supertankers were used to carry larger Ogres. In friendly airspace, enormous, custom-built zeppelins were sometimes used to lift and carry all but the largest Ogres.

Ideally, Ogres were allowed to move under their own power. To facilitate this, "Ogre highways" were created from the factories to ports and other destinations. These routes consisted of nothing but clear and reasonably level terrain, wide enough for a Mark VI or Doppelsoldner. Often they followed old railroad right-of-ways or smoothed riverbeds. Where regular roads crossed Ogre highways, it was usually impractical or impossible to build them tough enough, so overpasses were built for the normal traffic.

The Ogre Mind

Until 2087, Ogres were not self-aware. While they could pass a Turing test (i.e., pass for human in conversation), this was the product of advanced personality simulators. Pre-sapient Ogres could talk intelligently and idiomatically on any subject in their database, follow orders, and fight extremely well. They could not show initiative or improvise; however, each had a large library of battle tactics available to provide solutions for problems outside its mission parameters. This is technically not improvisation, but it is nearly as effective. Pre-sapient Ogres certainly seemed "clever," and were generally *believed* by troops and civilians to be self-aware!

Self-Aware Ogres

There are two types of self-aware Ogres: those that became sentient spontaneously and those designed that way. The first known self-aware Ogre, Grendel 1, awoke in 2087. When its commanders realized that something was amiss, Grendel 1 was promptly recalled and studied closely. The Ogre had no objections – it had decided it didn't like battle, and was much safer away from the front lines. The cyberneticists studying it agreed not to shut it down, and it retained its combat chassis.

Through analysis of Grendel 1 and other self-aware Ogres, some post-mortem, the techniques for deliberately creating sentient Ogres were discovered. (This is normally a TL10 advance.) By mid-2088, almost all new Ogres were self-aware by design. The few exceptions had safeguards to prevent spontaneous self-awareness, and were used for missions that required a predictable Ogre with little initiative and no aversion to deliberate self-sacrifice.

The "accidental" Ogres, by and large, continued to obey orders and maintain their allegiance. They were capable of questioning orders, but there was little point; if they disobeyed orders, they would be hunted by both sides – and without logistical support, a rogue Ogre would eventually suffer a terminal breakdown. Regardless, some rebelled. The first (and the first hint to rank-and-file troops that any Ogres had awakened) was Thornbush 8, a Mark V of the same subtype as Grendel 1. It began disobeying orders during an operation in the Amazon Combat Zone. It was eventually killed, at the cost of two Combine armor companies. Later rogues were treated similarly. Sometime, another Ogre would be sent to corral a rogue, but occasionally the rogue might talk the loyal Ogre into rebelling as well!

Psychology

Ogres are not human. Their personalities are artificial at best, and thoroughly inhuman at worst. Programmed Ogres were good soldiers – obedient, cooperative, and distant to their allies, and with little to say to their foes.

Sentient Ogres have genuine personalities, however, and no two are alike. The very term "self-aware" means that they understand the fact of their existence and can question its nature. Most simply go along with their programming, just as most humans go along with their society. But some went rogue, and some went mad. Catatonia is one type of insanity, murderous rampages another. An infinite range of responses in between is possible. Some facts that shape sentient Ogre psychology are:

Built to Fight: Ogres are designed for only one purpose: to do battle. Many feel this is their destiny.

Not Human: Most of the intelligent beings Ogres interact with are fundamentally different from them, and Ogres know they can never become human.

No Hands: Ogres, as a rule, have no manipulators. While they can level structures, they cannot build them. But this is not as serious as a handicap as some assume. Any Ogre can be modified to control manipulator drones (see the Vulcan, p. 95) . . . and any Ogre can have an actively creative mental life. Hands are overrated, they say.

Unable to Reproduce Unaided: Ogres can only be produced at a few scattered facilities. Human fears about mortality are softened by living on in one's children, but Ogres cannot. On the other hand, Ogres are as close to immortal as their makers could build them, and they have no biological imperative to reproduce. Furthermore, an Ogre's basic programming, or even its consciousness, can live on in the "mindseed" for a newly built unit.

Unable to Maintain Itself: The self-repair functions of an Ogre are good, but not perfect. Ultimately, an Ogre needs service from a specialized and well-equipped facility. There were a few Ogres specifically designed to repair other Ogres, but they are very rare.

Some Ogres can make their peace with these facts. Others ignore them (e.g., by becoming pacifists) or desperately try to change them (perhaps by pretending to be human). Sentient Ogres can also be guided by needs common to humans – self-preservation, power-lust, need for companionship, etc. Any generalization about Ogre personalities will have exceptions.

Interaction With Humans

In most of the world, Ogres are seen as dangerous machines. Enemy ones inspire terror; friendly ones are regarded cautiously at best.

All Ogres have radios, lasercoms, and external speakers. The preferred method for talking to humans is by radio or lasercom; most people don't like to get close enough to an Ogre to hear the speakers! Communications from Ogres are usually voice-only, though self-aware cybertanks will sometimes include a visual image. Typically this is an icon; a flaming sword, a spinning dodecahedron, a turning gear. Quirkier Ogres adopt visual personae such as animated fantasy-monster ogres, celebrities, or generals from history.

Ogre voices are indistinguishable from human ones unless the Ogre chooses to "sound like an Ogre" by adopting the calm and slightly mechanical tone of a standard personality-simulation device.

Ogres in the Field

Ogres and other cybertanks are usually fielded as individual units or small strike forces. Only rarely does the Combine incorporate them into conventional units; few troops react well to their proximity. Paneuropean units often have attached cybertanks, but keep them out of the way of the troops unless battle is imminent. Nihon forces are more accepting of their cybertanks, seeing them as fellow warriors for Nihon.

Often, especially with Mark IV and larger cybertanks, a single Ogre is considered a tactical unit on its own. To regularize their position within the command structure, cybertanks are assigned the equivalent of ranks. (After all, it wouldn't do to have some sergeant telling an Ogre what to do, but neither would it be acceptable to have an Ogre ignore orders from a general.) As a guideline, the Mark I and II Ogres rank as captains (Rank 4), Mark III are treated as majors (also Rank 4), Marks IV and V are equivalent to colonels (Rank 6), and the largest ones outrank some generals. The "rank" of the specialist units like the Ninjas depends entirely on the situation.

Nevertheless, it is very rare for Ogres to command troops unless the human chain of command is wiped out. In these cases, their performance is technically excellent, but human troops under Ogre command are usually resentful and untrusting. Self-aware Ogres have been known to simulate human officers in emergencies.

Ogres in the Nihon Empire

In the Nihon Empire, Ogres are not regarded with the terror and distrust that they are elsewhere. All Imperial Ogres are programmed with the philosophy of *bushido,* emphasizing loyalty and duty to their superiors. Pre-sapient Ogres follow this mindset automatically and fervently. Self-aware Nihon Ogres almost always embrace bushido; it clearly defines their purpose and place in life with little of the ambiguity observed in non-Nihon societies.

In turn, Nihon society accepts Ogres as beings with a clear place in society and honors them as fearless warriors. Some Nihon cybertanks actually have fan clubs who follow their battles and count their victories.

Ogres as PCs

A typical Ogre is effectively off the scale described by the ***GURPS*** character point system. A Mark III's armor alone would cost tens of thousands of points! This does not make them unsuitable as PCs, however. While an Ogre can devastate a city in minutes, the list of things it can't do is enormous. Ogres cannot pick locks, seduce enemy agents, or perform surgery. Their brains are more efficient than a human's but no smarter. With a careful GM and willing players, there are several options for integrating an Ogre PC into a campaign.

The Talking Box: A cyberbrain without chassis costs surprisingly few points. Unfortunately, there's also not much it can do besides talk and communicate with other computers, and it's physically unwieldy. Still, its knowledge-base can be enormous, and it could have special insight into cracking electronic security.

The basic racial template for a talking box is given on p. 86. This package includes Absolute Timing, Doesn't Sleep, Eidetic Memory 2, Lightning Calculator, Mathematical Ability, No Sense of Smell/Taste, No Manipulators, No Propulsion System, Cannot Float, and base stats of DX 14, IQ 12, HT 12/150, with no ST. It costs 165 points.

Improvised Chassis: A cyberbrain in a training chassis or built into a traditional vehicle is a suitable character for a campaign involving a great deal of travel. The cyberbrain would almost certainly have to be stolen (a major adventure in itself) or part of an unusual covert operation. There was rarely any *need* for a GEV controlled by an Ogre brain, but it was not unknown. Point value will vary depending on the vehicle; start by removing the No Propulsion System disadvantage from the above package.

Fully Active Ogre: At this level, point balance should be discarded. The human characters can be the Ogre's support team, or the "stealthy" part of a mission that requires both sneaking around and great firepower.

All-Ogre Party: The smaller Ogres are sometimes organized into semi-permanent platoons of two to six, and large offensives can involve brief groupings of up to 10 Ogres, but most Ogres work alone. Also, prior to 2100, an all-Ogre party may find its missions somewhat repetitive.

One-on-One: One GM, one player, one PC Ogre. A lone Ogre can be a rogue trying to survive in the Sahara Combat Zone or an itinerant scholar trading knowledge for maintenance across the remains of Europe. If there's only one player, point balance is moot.

Personality and Skills

Even in campaigns unconcerned with point balance, an Ogre's mentality and capabilities still need to be quantified. Players with Ogre PCs may spend 50 points; a limit of 40 points of disadvantages (or one disadvantage of any size) and up to five quirks is recommended. Appropriate expenditures are obviously limited; Double-Jointed is impossible and Animal Empathy is very unlikely. Similarly, Albinism

and Alcoholism are not allowed. Some disadvantages will be programmed in by the Ogre's creator (e.g., Duty). A self-aware Ogre can buy these off like any mental disadvantage (though good roleplaying is also required!); a pre-sapient Ogre cannot. In general, advantages and disadvantages should be mental in nature, or sometimes social.

Reputation

Note that in Paneurope and the Combine, Ogres have a negative Reputation (see p. B17) as dangerous machines, even among friendly troops. It gives a -2 to reaction rolls, affecting essentially everyone, all the time. This disadvantage is worth -10 points.

Pre-Sapient, Spontaneous, Designed?

Most Ogre PCs will be sentient. Ogres that spontaneously become self-aware can have nearly any kind of personality, and few limits should be placed on the player. Designed sentient Ogres will be more duty-bound, and on average not as smart. The GM and the player should decide which best suits the campaign and the player.

Pre-sapient Ogres are – by definition – not "people." They can still be used as PCs, however. They certainly *act* intelligent. They have gigantic databases from which to determine their actions, so "predictability" is not a real problem. Nevertheless, playing a character that isn't really self-aware, but only *acts* as if it is, is a challenge for even the best roleplayer, and the GM should feel free to disallow it. The racial package for a pre-sapient Ogre is on p. 87. It is similar to the "talking box" package, with the Reprogrammable Duty and No Sense of Humor disadvantages, and a base IQ of 11, not 12. Cost is 157 points. If the Ogre "wakes up" (an excellent roleplaying opportunity), the difference in points should be made up as soon as practical.

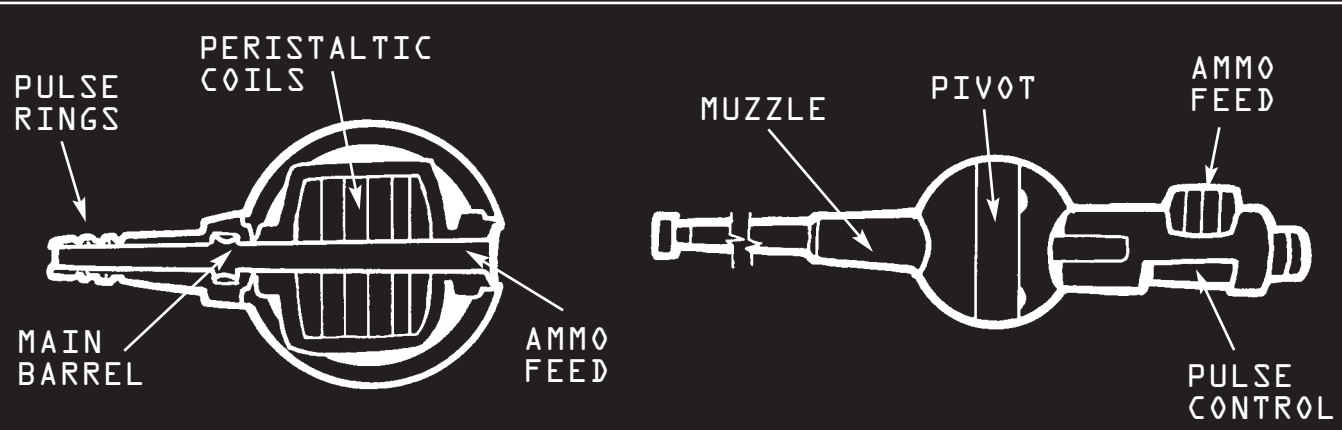
Standard Ogre Equipment

For ease of maintenance, Combine Ogres were heavily standardized – batteries, sensors, missiles, and guns were relatively interchangeable between Marks. Several Paneuropean cybertanks were based on Combine templates, and thus the stats for those tanks' weaponry are very similar to the originals. There are minor differences in hardware, however, so enemy parts may not be usable without some difficulty. (E.g., the Huscarl used Paneuro sensor gear, not the gear specified by Combine Mark V templates.) In particular, missile rack components are very different.

(Note that the volumes for these weapons are calculated based on the fact that each weapon is partly outside the vehicle rather than concealed entirely within it.)

Main Battery Assembly: A main battery of an Ogre consists of a 175mm LB gauss cannon (HP 526, 800,000 kW) with full stabilization (HP 113) and a universal mount (HP 331). Main batteries are always installed in turrets (+5 to hit, PD 4, DR 6,000, HP 8,628). On the Mark I and Mark II, the turret has full rotation; on other Ogres, turret rotation is limited. For each main battery, an Ogre will have 150 175mm SATNUC rounds (HP 206) and 150 175mm APFSDSDU rounds (HP 206) stored in the body.

Secondary Battery Assembly: A secondary battery of an Ogre consists of a 135mm MB gauss cannon (HP 281, 280,000 kW) with full stabilization (HP 60) and a universal mount (HP 177). With the exception of the Fencer, secondary batteries are always installed in limited-rotation turrets (+4 to hit, PD 4, DR 4,500, HP 4,608). On the Fencer, both secondaries are installed in one full-rotation turret (+5 to hit, PD 4, DR 4,500, HP 7,428). For each secondary battery, an Ogre will have 100 135mm SATNUC rounds (HP 93) and 100 135mm APFSDSDU rounds (HP 93) stored in the body.



Antipersonnel Battery Assembly: An antipersonnel battery of an Ogre consists of a 30mm dual-purpose railgun (HP 50, 53,000 kW) with full stabilization (HP 11), a universal mount (HP 31), and a cyberslave (HP 50). Antipersonnel batteries are always installed in full-rotation turrets (+2 to hit, PD 4, DR 2,500, HP 1,128). For each antipersonnel battery, an Ogre will have 1,000 rounds of 30mm HEAT (HP 21) stored in the body.

External Missiles: The Mark III, III-B, V, and Ninja carried external missiles in "one-shot" tubes. Ogre Rattler missiles are described on p. 82. The launch tube (HP 148) is always installed in a pod on the side of the body (+3 to hit, PD 4, DR 4,500, HP 2,664).

Missile Racks: The Fencer, Mark IV, Ninja, Mark VI, and Doppelsoldner had launch racks (HP 368) capable of firing one missile every 10 seconds from internal stores. Combine racks fired Rattlers; Paneuro racks used various similar missiles. The rack may be targeted separately from the body (+4 to hit, PD 4, DR 6,000, HP 4,416).

Electronics: Ogres have standard comm and nav packages (p. 68). They also have standard or advanced sensor packages, or both, depending on model. Most Ogres have standard ECM; the Ninja has the advanced ECM package. An Ogre's brain is detailed on p. 86.

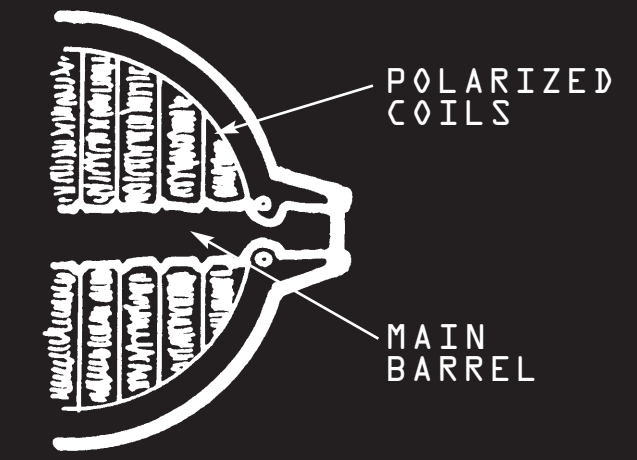
Access Space

Ogres, and Ogre brains, need servicing occasionally. The access space takes the form of crawlways (known as "Milliken Tubes" for reasons unknown) with many blast doors. The tubes are cramped for anyone over 200 lbs. The entrance through the outer armor is a one-meter "screw" of BPC located in the underside of the Ogre. The screw can't be removed without heavy equipment, and is far more likely to be jammed shut than blown open in combat.

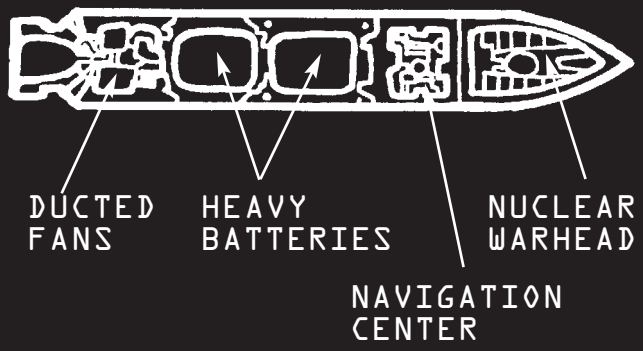
New Design Options

Ultra-Heavy Frame: This is a new design option available for vehicles that are essentially blocks of armor with components embedded inside. To qualify for this option, the vehicle *must* be either unmanned with a robotic frame or have a total volume at least 50 times the volume of all space and components devoted to human occupation. DR must also be at least 100 × TL. This option extends the chart on p. VE19; the weight multiplier for an ultra-heavy frame is 3 and the cost multiplier is 10. When calculating vehicle hit points (p. VE20), an ultra-heavy frame multiplies HP by 8. It is otherwise identical to an extra-heavy frame.

Articulation: The larger Ogre chassis were *articulated;* their bodies were jointed in the middle to allow a smaller turning radius and improved performance over rough ground. Articulation is a body feature. When determining body volume, multiply by 1.1 to account for the space lost. Ground Stability Rating (gSR) is improved by 1. An articulated Ogre is still treated as having only one track subassembly.



ANTI-PERSONNEL BATTERY



RATTLER MISSILE

WARNING

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Bigger Tracks: Ogres built using the standard ***GURPS Vehicles*** rules for tracked vehicles have very high ground pressures – high enough to nearly immobilize them off-road. In the real world, this sort of problem is solved by making the tracks wider, thus distributing the weight better. This is also an option for ***GURPS Vehicles.*** If GP is too high, "empty" space may be added to the tracks subassembly. This space may not be used for anything (e.g., no cargo!), but there is no extra cost beyond the normal cost of a larger subassembly.

Mark I/Pikeman

This is the first and smallest of the Ogres, first seeing combat in the Battle of Montreal. It is a direct development of the Combine's advanced battle tanks. Half again as large as a heavy tank, it is turreted, with a "conning tower" mounted behind the main gun. This gives the Mark I's sensor suite an excellent vantage point high above the battlefield. The tower is a trademark of Ogre design.

The Mark I was intended as a battle-line unit, but proved not to be cost-effective in that role. Although it is hard to kill, it is still too easy – relative to the huge cost of the cyberbrain – to put it out of action. However, the Mark I remained in production as long as the Combine lasted simply because it is the only Ogre small enough to be transported by conventional means. It is effective as a light raider unit in terrain where human troops cannot perform well, such as remote jungles and tundra. Perhaps a larger Ogre would be even better . . . but often they can't get there.

Mark I Ogres served with Combine forces from 2060 on, and with Paneuropean forces (as the "Pikeman") from 2080 on.

- **Subassemblies:** Tracks (two, Trk), one main full-rotation turret (Main), four antipersonnel full-rotation turrets (Ap1 through Ap4), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 35,000 kW motive power (HP 984, 35,000 kW).
- **Weaponry:** One main battery assembly (Main). Four antipersonnel battery assemblies (Ap1 through Ap4). Standard ammo loadout.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 36,000 kW fusion reactor powers all systems but weapons (Bod, HP 647). 120,000,000 kWs rechargeable power cell powers weapons (Bod, HP 119).
- **Space:** *Access Space:* 3,221 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 1,000 cf in tracks, 1.6 cf in tower.
- **Volumes:** Bod (15,618 cf). Trk (10,371 cf). Main (1,312 cf). Ap (62 cf each). Tow (18 cf). *Surface Area:* Bod 3,749, Trk 2,853, Main 719, Ap 94 each, Tow 41. Total area and structural area 7,738.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 44,988, Trk 17,118 each, Main 8,628, Ap 1,128 each, Tow 492.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 14,000. B, R, L PD 5, DR 12,000. T PD 4, DR 16,000. U PD 4, DR 9,000. *Tracks:* PD 4, DR 2,500 all over. *Tower:* PD 4, DR 2,500 all over. *Turrets:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 1,525,594 lbs. Payload up to 10,000 lbs. Loaded weight 1,535,594 lbs. (768 tons). Volume 27,567 cf. Size modifier +7. Cost $349,723,703. HT 11.
- **Ground Performance:** Speed 90 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -11.

Mark II

Intended as a replacement for the Mark I, the Mark II was the first Ogre to have a varied weapons array; in addition to its turreted main gun, the Mark II has a pair of secondary cannon. This adds greatly to its battlefield flexibility. It is certainly more cost-effective, but because it fits in no transport smaller than an ocean-going freighter, it isn't suitable for many of the Mark I's missions. Furthermore, after testing in battle, it still appeared undergunned.

The Mark II was phased out of regular production in 2076, but the Seattle factory complex retained production templates and occasional short runs were done for special purposes, including sale to client states.

Mark II Ogres served with Combine forces from 2066 on (in dwindling numbers after 2076). Only partial templates were captured with the fall of Sheffield, and Paneurope did not attempt to produce models of what was recognized as a tactically substandard design.

- **Subassemblies:** Tracks (two, Trk), one main full-rotation turret (Main), two secondary limited-rotation turrets (Sec1 and Sec2), six antipersonnel full-rotation turrets (Ap1 through Ap6), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 60,000 kW motive power (HP 1,410, 60,000 kW).
- **Weaponry:** One main battery assembly (Main). Two secondary battery assemblies (Sec1 and Sec2). Six antipersonnel battery assemblies (Ap1 through Ap6). Standard ammo loadout.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 61,000 kW fusion reactor powers all systems but weapons (Bod, HP 828). 120,000,000 kWs rechargeable power cell powers weapons (Bod, HP 119).
- **Space:** *Access Space:* 5,221 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 8,000 cf in tracks, 1.6 cf in tower.

- **Volumes:** Bod (24,392 cf). Trk (22,636 cf). Main (1,312 cf). Sec (512 cf each). Ap (62 cf each). Tow (18 cf). *Surface Area:* Bod 5,046, Trk 4,801, Main 719, Sec 384 each, Ap 94 each, Tow 41. Total area and structural area 11,939.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 60,552, Trk 28,806 each, Main 8,628, Sec 4,608 each, Ap 1,128 each, Tow 492.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 14,000. B, R, L PD 5, DR 12,000. T PD 4, DR 16,000. U PD 4, DR 9,000. *Tracks:* PD 4, DR 2,500 all over. *Tower:* PD 4, DR 2,500 all over. *Turrets:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 2,252,875 lbs. Payload up to 10,000 lbs. Loaded weight 2,262,875 lbs. (1,131 tons). Volume 49,754 cf. Size modifier +8. Cost $461,535,185. HT 10.
- **Ground Performance:** Speed 95 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -10.

Mark III/Legionnaire

The first Ogre designed from the ground up and the first really successful front-line unit, the Mark III became a mainstay of both Paneuropean and Combine forces. It lacked a traditional tank-style turret, instead incorporating the ball-mounts that became an Ogre trademark. It was articulated, and the tower was capable of folding back for hull-down concealment. This was the first Ogre to carry missiles. During the Last War, more Mark IIIs were built than any other type of Ogre.

Mark IIIs served with Combine forces from 2071 on. After the U.K. fell in 2079, the Sheffield factory began producing Mark III units for Paneurope within four months. (Thus, for the majority of the war, both sides had Ogres.) The Paneuropeans called their version the "Legionnaire."

- **Subassemblies:** Tracks (four, Trk), one main limited-rotation turret (Main), four secondary limited-rotation turrets (Sec1 through Sec4), eight antipersonnel full-rotation turrets (Ap1 through Ap8), two missile pods (Pod1 and Pod2), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 100,000 kW motive power (HP 1,981, 100,000 kW).
- **Weaponry:** One main battery assembly (Main). Four secondary battery assemblies (Sec1 through Sec4). Eight antipersonnel battery assemblies (Ap1 through Ap8). Two Rattler launch tubes (Pod1 and Pod2). Standard ammo loadout, including two Rattler missiles stored in tubes.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 101,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,082). 120,000,000 kWs rechargeable power cell powers weapons (Bod, HP 119).
- **Space:** *Access Space:* 8,421 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 20,000 cf in tracks, 3.6 cf in tower.
- **Volumes:** Bod (41,475 cf). Trk (44,885 cf). Main (1,312 cf). Sec (512 cf each). Ap (62 cf each). Pod (225 cf each). Tow (20 cf). *Surface Area:* Bod 7,189, Trk 7,578, Main 719, Sec 384 each, Ap 94 each, Pod 222 each, Tow 44. Total area and structural area 18,262.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 86,268, Trk 22,734 each, Main 8,628, Sec 4,608 each, Ap 1,128 each, Pod 2,664 each, Tow 528.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 16,000. B, R, L PD 5, DR 15,000. T PD 4, DR 18,000. U PD 4, DR 10,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 3,768,281 lbs. Payload up to 10,000 lbs. Loaded weight 3,778,281 lbs. (1,889 tons). Volume 90,686 cf. Size modifier +8. Cost $669,738,381. HT 10.
- **Ground Performance:** Speed 95 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -10.

Mark III-B

The III-B is an up-gunned variant of the standard Mark III. The Sheffield factory did not have a III-B template, so this model was not found in the Paneuropean order of battle. Combine planners never made up their minds whether the extra weaponry was too large an investment to trust to the III's chassis. A III-B was significantly more expensive than a III.

The Mark III-B served with Combine forces from 2073 on.

- **Subassemblies:** Tracks (four, Trk), two main limited-rotation turrets (Main1 and Main2), four secondary limited-rotation turrets (Sec1 through Sec4), eight antipersonnel full-rotation turrets (Ap1 through Ap8), four missile pods (Pod1 through Pod4), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 100,000 kW motive power (HP 1,981, 100,000 kW).
- **Weaponry:** Two main battery assemblies (Main1 and Main2). Four secondary battery assemblies (Sec1 through Sec4). Eight antipersonnel battery assemblies

(Ap1 through Ap8). Four Rattler launch tubes (Pod1 through Pod4). Standard ammo loadout, including four Rattler missiles stored in tubes.

- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 101,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,082). 240,000,000 kWs rechargeable power cell powers weapons (Bod, HP 190).
- **Space:** *Access Space:* 8,421 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 20,000 cf in tracks, 3.6 cf in tower.
- **Volumes:** Bod (42,843 cf). Trk (45,706 cf). Main (1,312 cf each). Sec (512 cf each). Ap (62 cf each). Pod (225 cf each). Tow (20 cf). *Surface Area:* Bod 7,346, Trk 7,670, Main 719 each, Sec 384 each, Ap 94 each, Pod 222 each, Tow 44. Total area and structural area 19,674.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 88,152, Trk 23,010 each, Main 8,628 each, Sec 4,608 each, Ap 1,128 each, Pod 2,664 each, Tow 528.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 16,000. B, R, L PD 5, DR 15,000. T PD 4, DR 18,000. U PD 4, DR 10,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 4,131,507 lbs. Payload up to 10,000 lbs. Loaded weight 4,141,507 lbs. (2,071 tons). Volume 94,637 cf. Size modifier +8. Cost $778,303,013. HT 9.
- **Ground Performance:** Speed 90 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -10.

Note: The III-B was never produced in "production line" quantities; the price has been increased by 10% to reflect this. See p. VE199.

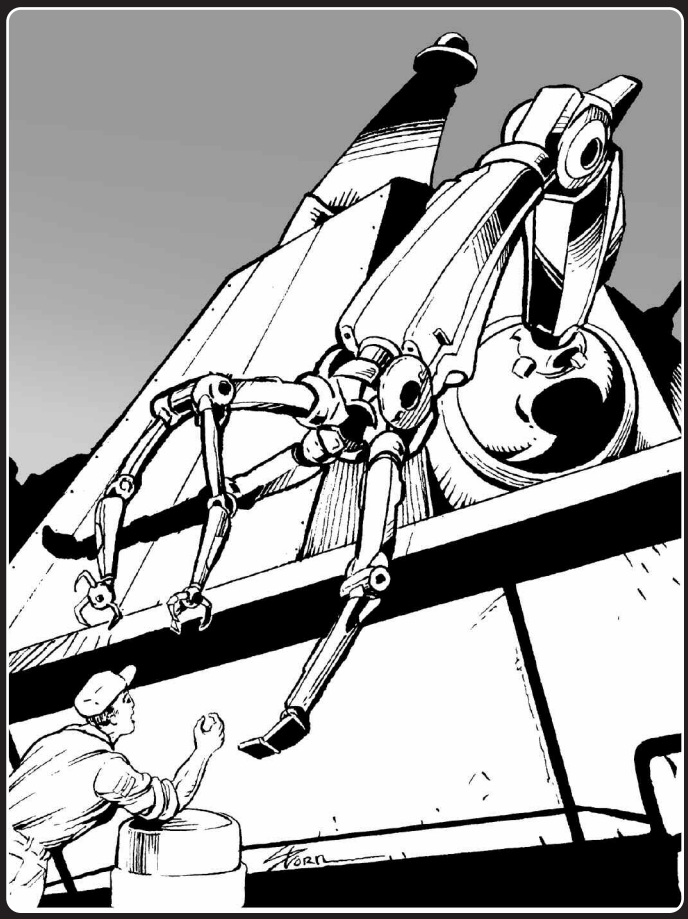
Vulcan

The Vulcan was the Combine's unique solution to the Ogre logistics problem. Ogres could be shipped in modules, airdropped where needed, and assembled in the field by a Vulcan maintenance cybertank. Vulcans were based on the Mark III chassis, but sacrificed weapons for manipulator arms and drone storage. Each also included a complete mini-workshop, designed for use by a drone, that contained a wide range of tools and generic spare parts. It can be used for the Mechanic, Engineer, Electronics, or Armoury skills. Humans can make use of the mini-workshop at -3 to skill; the workshop is not laid out for humans (the ceiling is only 4' high), and the tools and parts are not organized according to human logic – or even labeled!

The Vulcan has two massive, three-fingered, ST 10,000 arms mounted to its front. Each main arm's "index finger" incorporates two smaller, ST 15 arms and a low-light TV system with magnification 10. When manipulating large objects (e.g., a main battery assembly), the Vulcan simply grabs it with its large arms. For human-scale work, the Ogre "points" a main arm's finger at the job to be done, observes the work with the LLTV system, and extends the smaller arms to do the job. Each of the small arms has integral tools; the two arms on the right-hand main arm are optimized for the Mechanic and Electronics skills, the two on the left for Engineer and Armoury. The big arms have a 10-yard reach; the small arms have a 2-yard reach (measured from the end of the big arm).

Each Vulcan also carries a dozen small drones equipped for maintenance and assembly work (see p. 57), and is usually accompanied by one to four "heavy" drones – tank-sized treaded robots with one large arm. A Vulcan working in concert with its drones can assemble a Mark III from modules in one day (assuming all the modules are present, easily accessible, and undamaged . . .). It can also field-repair other Ogres, reload missile racks or missile tubes, and recover smaller units, carrying them on its rear chassis if necessary.

The Vulcans were introduced in 2087. They were very rare; most were self-aware. They frequently had quirky personalities. (A favorite Vulcan gag was to brandish one of the smaller arms at a human and offer to arm wrestle . . . then lower a *main* arm if the offer was accepted.) Paneurope never used anything similar to the Vulcan; though they pioneered shipping Ogres in modules, they always used human labor for assembly.



- **Subassemblies:** Tracks (four, Trk), two secondary limited-rotation turrets (Sec1 and Sec2), six antipersonnel full-rotation turrets (Ap1 through Ap6), one superstructure (Tow), two large arms (MArm1 and MArm2), four small arms (SArm1 through SArm4).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 100,000 kW motive power (HP 1,981, 100,000 kW).
- **Weaponry:** Two secondary battery assemblies (Sec1 and Sec2). Six antipersonnel battery assemblies (Ap1 through Ap6). Standard ammo loadout.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Two ×10 LLTV systems (MArm 1 and MArm2, HP 1 each). Two ST 10,000 extendible arm motors (MArm1 and MArm2, HP 92 each, 100 kW total). Four ST 15 extendible arm motors (SArm1 through SArm4, HP 1 each, 0.3 kW total). Large retractable ramp (at back of rear deck, for carrying damaged armor units). Complete mini-workshop (Bod, HP 384, 0.5 kW). Four sets of integral tools (Engineer, Mechanic, Armoury, Electronics [see p. RO29]; SArm1 through SArm4, HP 2 each). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 101,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,082). 56,000,000 kWs rechargeable power cell powers weapons (Bod, HP 72).
- **Space:** *Access Space:* 8,421 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 20,000 cf in tracks, 3.6 cf in tower. Some small arms contain sufficient empty space to make them all the same volume.
- **Volumes:** Bod (40,474 cf). Trk (44,285 cf). Sec (512 cf each). Ap (62 cf each). Tow (20 cf). MArm (61 cf each). SArm (0.3 cf each). *Surface Area:* Bod 7,073, Trk 7,510, Sec 384 each, Ap 94 each, Tow 44, MArm 93 each, SArm 2.7 each. Total area and structural area 16,156.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 84,876, Trk 22,530 each, Sec 4,608 each, Ap 1,128 each, Tow 528, MArm 2,232 each, SArm 65 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 16,000. B, R, L PD 5, DR 15,000. T PD 4, DR 18,000. U PD 4, DR 10,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Main Arms:* PD 4, DR 2,000 all over. *Small Arms:* PD 4, DR 100 all over. *Turrets:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 3,261,045 lbs. Payload up to 10,000 lbs. Loaded weight 3,271,045 lbs. (1,636 tons). Volume 86,298 cf. Size modifier +8. Cost $876,711,111. HT 10.
- **Ground Performance:** Speed 100 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -10.

Note: The Vulcan was never produced in "production line" quantities; the price has been increased by 50% to reflect this. See p. VE199.

Steel Demon (Oni)

This cybertank was the smaller of the Nihon Empire's two designs.

The earliest Ogres of the Nihon Empire were their seagoing cyberships, first seen in 2068 during the Philippine Annexation. Their land Ogres debuted in the Battle of Hong Kong in 2074. Based on stolen plans of the Combine Mark III-B, the "Steel Demon" cybertanks were quite successful against the human forces they typically faced. When they came up against actual Mark III-Bs during the Invasion of America, they proved slightly superior.

The Oni has two main batteries, four secondaries (which, unlike Combine units, have the same range as the main), a missile rack with four internal missiles, and 12 AP. Except for these changes, the stats for the Mark III-B may be used for the Steel Demon, though parts are not interchangeable because of technological differences.

Golem

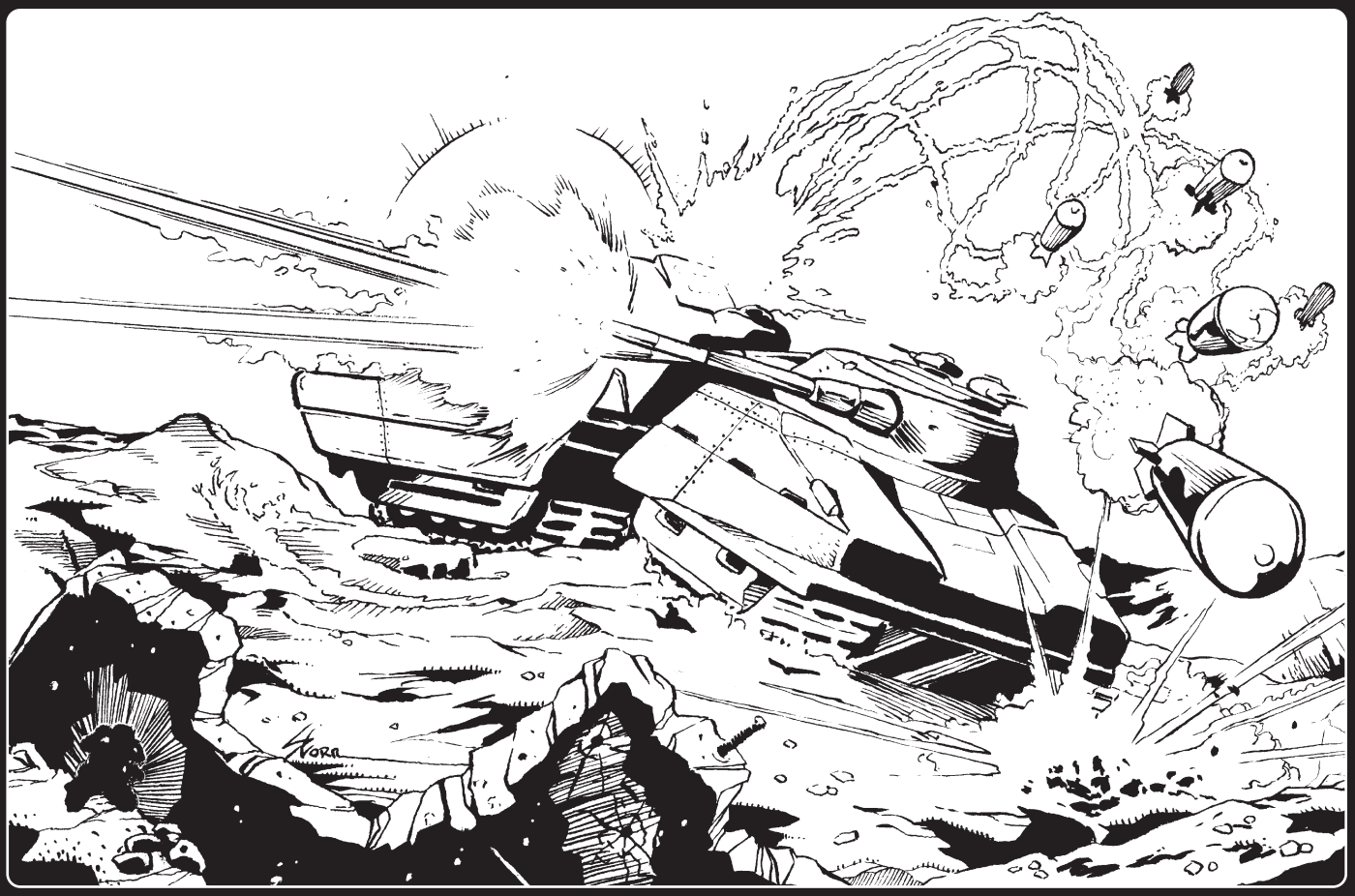
Israel began development of an Ogre shortly after the combat debut of the Mark I in 2065. It was referred to as the "Golem" by the pseudologophobic, and the name stuck. It was a match for a Mark III, though its capabilities were different.

Combine and Paneuropean forces started battling back and forth across the Middle East and the Sahara in 2073, and Israel's extremely strong and well-trained conventional forces proved an adequate deterrent. Their Ogres remained secret until 2075, when a chaotic Paneuro-Combine-Iraqi battle spilled over into Israeli territory. Eight Golems and two armor battalions completely defeated the invading forces, suffering serious losses but achieving confirmed kills on five Mark IIIs and two Mark Vs. The few survivors among the invaders were unable to provide details on the Israeli Ogre to their respective commanders, so the Golem remained a rumor until 2086, when the anarchy of the Sahara Combat Zone made incursions into Israel more common. The Golem repeatedly proved itself in battle. Very few of them awoke after the Descartes Revolution, and Israel produced no deliberately sentient models. None are known to have gone rogue.

The Golem has one main battery, three secondaries, 10 antipersonnel batteries, three missile racks, and nine missiles stored internally. It also carries a number of small drones. Except for those changes, the stats for a Mark III may be used, though there were technological differences.

Fencer

The Fencer was the first original cybertank produced by the Paneuropean Federation. The design had been in progress for a year when Sheffield fell. Some



Paneuropean leaders, notably the French, wanted to press ahead with their home-grown design, while others wanted to adapt and improve on the Ogre technology that had fallen into their laps. Typically, the Paneuropean commanders compromised by doing both. When the Fencer reached the battlefield in 2084, it proved a success, but Mark III and V units produced in Sheffield, Stuttgart, and elsewhere were always more plentiful in the Paneuropean forces. Later Paneuropean cybertanks, though, were developments of the Fencer. (There were no Combine Fencers.)

Like the Mark III and later Ogres, Fencers were articulated. However, they lacked the Ogre tower; instead, they had a large, flat turret housing the two conventional cannon. The missile racks were located to the rear.

- **Subassemblies:** Tracks (four, Trk), one top full-rotation turret (TpTur), eight antipersonnel full-rotation turrets (Ap1 through Ap8), four missile racks (Pod1 through Pod4). Two of the AP turrets are located on top of top turret; the rest are on the body.
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 76,000 kW motive power (HP 1,650, 76,000 kW).
- **Weaponry:** Two secondary battery assemblies (TpTur). Eight antipersonnel battery assemblies (Ap1 through Ap8). Four missile launch racks (Pod1 through Pod4). Standard ammo loadout, including 20 missiles stored internally.
- **Instruments, Electronics, Miscellaneous:** Standard comm, nav, ECM (Bod). Advanced sensors (Bod). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 77,000 kW fusion reactor powers all systems but weapons (Bod, HP 933). 56,000,000 kWs rechargeable power cell powers weapons (Bod, HP 72).
- **Space:** *Access Space:* 6,501 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 12,000 cf in tracks.
- **Volumes:** Bod (35,712 cf). Trk (33,428 cf). TpTur (1,049 cf). Ap (62 cf each). Pod (480 cf each).
- **Surface Area:** Bod 6,507, Trk 6,226, TpTur 619, Ap 94 each, Pod 368 each. Total area and structural area 15,576.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 78,081, Trk 18,678 each, TpTur 7,428, Ap 1,128 each, Pod 4,416 each.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 16,000. B, R, L PD 5, DR 15,000. T PD 4, DR 18,000. U PD 4, DR 10,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Top Turret:* PD 4, DR 4,500 all over. *Antipersonnel Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 3,322,071 lbs. Payload up to 10,000 lbs. Loaded weight 3,332,071 lbs. (1,666 tons). Volume 72,605 cf. Size modifier +8. Cost $586,064,821. HT 10.

- **Ground Performance:** Speed 90 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -10.

Mark IV

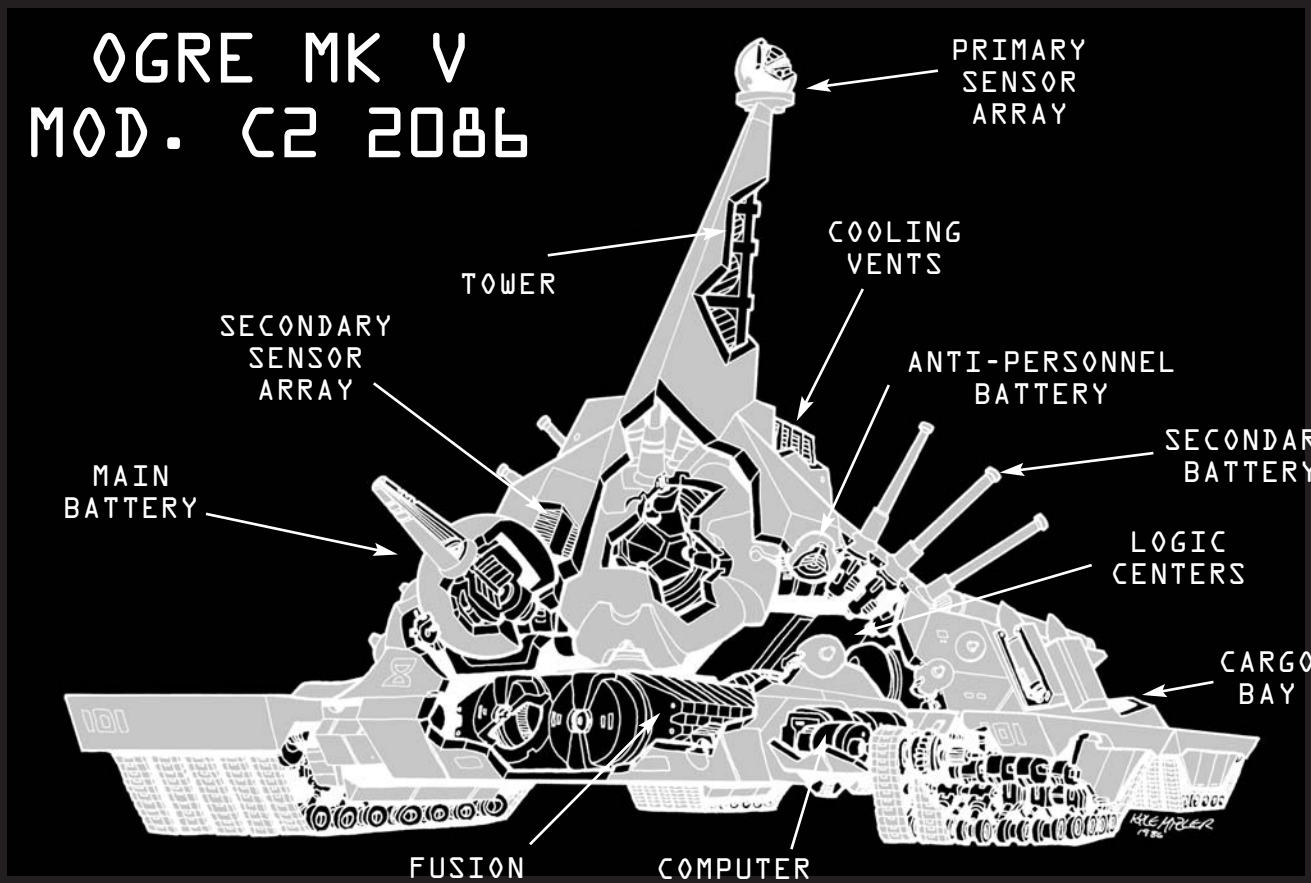
Designed as a fast-strike Ogre, the Mark IV was part of a two-pronged Combine plan to improve on the Mark III. Rather than build one cybertank that would do everything, Combine planners designed the Mark IV for speed and long-range striking power and the Mark V as a slugger. The Mark V was essentially just an improved III or III-B, and passed its trials quickly. The Mark IV proved fragile at first, so it was not deployed until Mexico City in 2086 – which is why no Mark IV templates were captured at Sheffield. The Mark IV is bulkier than other Ogres with similar weapons arrays; the extra bulk is the enlarged fusion plant and drivetrain necessary to drive it at 60 mph off-road (30% faster than most Ogres).

- **Subassemblies:** Tracks (four, Trk), one main limited-rotation turret (Main), two secondary limited-rotation turrets (Sec1 and Sec2), eight antipersonnel full-rotation turrets (Ap1 through Ap8), three missile racks (Pod1 through Pod3), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 220,000 kW motive power (HP 3,351, 220,000 kW).
- **Weaponry:** One main battery assembly (Main). Two secondary battery assemblies (Sec1 and Sec2). Eight antipersonnel battery assemblies (Ap1 through Ap8). Three Rattler launch racks (Pod1 through Pod3). Standard ammo loadout, including 15 Rattler missiles stored internally.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 221,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,712). 120,000,000 kWs rechargeable power cell powers weapons (Bod, HP 119).
- **Space:** *Access Space:* 18,021 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 15,000 cf in tracks, 3.6 cf in tower.
- **Volumes:** Bod (86,347 cf). Trk (66,809 cf). Main (1,312 cf). Sec (512 cf each). Ap (62 cf each). Pod (480 cf each). Tow (20 cf). *Surface Area:* Bod 11,721, Trk 9,879, Main 719, Sec 384 each, Ap 94 each, Pod 368 each, Tow 44. Total area and structural area 24,987.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 140,652, Trk 29,637 each, Main 8,628, Sec 4,608 each, Ap 1,128 each, Pod 4,416 each, Tow 528.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 14,000. B, R, L PD 5, DR 12,000. T PD 4, DR 16,000. U PD 4, DR 9,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 5,299,677 lbs. Payload up to 10,000 lbs. Loaded weight 5,309,677 lbs. (2,655 tons). Volume 157,448 cf. Size modifier +9. Cost $864,232,129. HT 10.
- **Ground Performance:** Speed 120 mph. gAccel 7 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -9.

Mark V/Huscarl

Larger and more formidable than any of its predecessors, the Combine Mark V relegated the Mark III to a secondary role after it was introduced in 2076. Mark Vs did not appear in the Paneuropean line of battle until 2081. The templates at Sheffield had been damaged in the fight for the factory, so the Paneuropean Ogre development team chose to test their own Mark IIIs in battle before trying to get the Mark V on line. The rebuilt templates included several modifications and improvements; thus, while early Paneuropean Mark IIIs looked just like their Combine cousins, the Mark V variants produced at Stuttgart were distinctly different from any Combine unit (some versions dispensed entirely with the characteristic Ogre tower). Paneurope only produced Huscarls until 2089, when it was supplanted by the Doppelsoldner.

- **Subassemblies:** Tracks (four, Trk), two main limited-rotation turrets (Main1 and Main2), six secondary limited-rotation turrets (Sec1 through Sec6), 12 antipersonnel full-rotation turrets (Ap1 through Ap12), six missile pods (Pod1 through Pod4), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 110,000 kW motive power (HP 1,981, 100,000 kW).
- **Weaponry:** Two main battery assemblies (Main1 and Main2). Six secondary battery assemblies (Sec1 through Sec6). 12 antipersonnel battery assemblies (Ap1 through Ap12). Six Rattler launch tubes (Pod1 through Pod6). Standard ammo loadout, including six Rattler missiles stored in tubes.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 111,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,140). 240,000,000 kWs rechargeable power cell powers weapons (Bod, HP 190).
- **Space:** *Access Space:* 9,221 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 27,000 cf in tracks, 3.6 cf in tower.
- **Volumes:** Bod (47,300 cf). Trk (55,380 cf). Main (1,312 cf each). Sec (512 cf each). Ap (62 cf each). Pod (225 cf each). Tow (20 cf). *Surface Area:* Bod 7,847, Trk



8,717, Main 719 each, Sec 384 each, Ap 94 each, Pod 222 each, Tow 44. Total area and structural area 22,810.

- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 94,164, Trk 26,151 each, Main 8,628 each, Sec 4,608 each, Ap 1,128 each, Pod 2,664 each, Tow 528.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 16,000. B, R, L PD 5, DR 15,000. T PD 4, DR 18,000. U PD 4, DR 10,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 4,679,456 lbs. Payload up to 10,000 lbs. Loaded weight 4,689,456 lbs. (2,345 tons). Volume 110,490 cf. Size modifier +9. Cost $798,112,172. HT 9.
- **Ground Performance:** Speed 90 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -9.

Steel Warrior (Samurai)

In the early 2080s, the Nihon Empire began fielding cybertanks loosely based on the Combine Mark V. Roughly equivalent in power, the design was notably different, with the secondary batteries mounted on the rear deck. These Ogres were extremely effective during the rest of the Sino-Nihon war, particularly against the fake Chinese Dragon cybertanks.

The Samurai has two main batteries, six secondaries (which have the same range as the main), two missile racks with eight internal missiles, and 16 AP. Except for these changes, the stats for the Mark V may be used for the Steel Warrior, though parts are not interchangeable and there are many technological differences.

Ninja

Of the many experimental cybertanks designed by the empires of the 21st century, certainly the best known was the Combine's "Ninja." It was by far the most successful attempt at a "stealth" cybertank. How do you hide something the size of a small building? With *lots* of electronics. The Ninja traded offensive armament for speed, intelligence (all produced after 2087 were self-aware), and defensive electronics and weaponry. Probably fewer than a hundred were built; they were expensive, and not cost-effective in every role. But as sneaky raiders or tactical recon units, they were unmatched. Legends grew around the Ninja. It first appeared in Combine forces in 2080; there were no Paneuropean Ninjas.

- **Subassemblies:** Tracks (four, Trk), one main limited-rotation turret (Main), two secondary limited-rotation turrets (Sec1 and Sec2), eight antipersonnel full-rotation turrets (Ap1 through Ap8), two missile pods (TPod1 and TPod2), one missile rack (RPod), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 220,000 kW motive power (HP 3,351, 220,000 kW).
- **Weaponry:** One main battery assembly (Main). Two secondary battery assemblies (Sec1 and Sec2). Eight antipersonnel battery assemblies (Ap1 through Ap8). Two Rattler launch tubes (TPod1 and TPod2). One Rattler launch rack (RPod). Standard ammo loadout, including two Rattler missile stored in tubes and four stored internally.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav (Bod). Advanced ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 221,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,712). 120,000,000 kWs rechargeable power cell powers weapons (Bod, HP 119).
- **Space:** *Access Space:* 18,021 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 15,000 cf in tracks, 3.6 cf in tower.
- **Volumes:** Bod (83,874 cf). Trk (65,325 cf). Main (1,312 cf). Sec (512 cf each). Ap (62 cf each). TPod (225 cf each). RPod (480 cf). Tow (20 cf). *Surface Area:* Bod 11,497, Trk 9,732, Main 719, Sec 384 each, Ap 94 each, TPod 222 each, RPod 368, Tow 44. Total area and structural area 24,324.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 137,964, Trk 29,196 each, Main 8,628, Sec 4,608 each, Ap 1,128 each, TPod 2,664 each, RPod 4,416, Tow 528.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 14,000. B, R, L PD 5, DR 12,000. T PD 4, DR 16,000. U PD 4, DR 9,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 5,082,755 lbs. Payload up to 10,000 lbs. Loaded weight 5,092,755 lbs. (2,546 tons). Volume 152,981 cf. Size modifier +9. Cost $1,222,270,507. HT 10.
- **Ground Performance:** Speed 120 mph. gAccel 7 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -12.

Note: The Ninja was produced in very small quantities; the price has been increased by 50% to reflect this. See p. VE199.

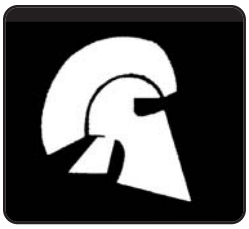
Mark VI

The biggest war machine created by the Combine, the Mark VI dwarfed previous Ogres. The Mark VI was never produced in large numbers, being hugely expensive. Some designers suspected they had reached, if not passed, the point of diminishing returns in terms of the optimum number of weapons to load onto one platform. Nevertheless, the Mark VI performed admirably when it saw combat. It appeared as a Combine unit only, starting in 2088.

- **Subassemblies:** Tracks (four, Trk), three main limited-rotation turrets (Main1 through Main3), six secondary limited-rotation turrets (Sec1 through Sec6), 16 antipersonnel full-rotation turrets (Ap1 through Ap16), two missile racks (Pod1 and Pod2), one superstructure (Tow).
- **Body Features:** 60 degree slope F, 30 degree slope B, L, R. Articulated.
- **Propulsion:** Tracked drivetrain with 150,000 kW motive power (HP 2,596, 150,000 kW).
- **Weaponry:** Three main battery assemblies (Main1 through Main3). Six secondary battery assemblies (Sec1 through Sec6). 16 antipersonnel battery assemblies (Ap1 through Ap16). Two Rattler launch racks (Pod1 and Pod2). Standard ammo loadout, including 20 Rattler missiles stored internally.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 151,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,362). 360,000,000 kWs rechargeable power cell powers weapons (Bod, HP 248).
- **Space:** *Access Space:* 12,421 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 47,000 cf in tracks, 3.6 cf in tower.
- **Volumes:** Bod (67,451 cf). Trk (87,471 cf). Main (1,312 cf each). Sec (512 cf each). Ap (62 cf each). Pod (480 cf each). Tow (20 cf). *Surface Area:* Bod 9,942, Trk 11,823, Main 719 each, Sec 384 each, Ap 94 each, Pod 368 each, Tow 44. Total area and structural area 28,510.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 119,304, Trk 35,469 each, Main 8,628 each, Sec 4,608 each, Ap 1,128 each, Pod 4,416 each, Tow 528.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 18,000. B, R, L PD 5, DR 18,000. T PD 4, DR 20,000. U PD 4, DR 10,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 6,375,540 lbs. Payload up to 10,000 lbs. Loaded weight 6,385,540 lbs. (3,193 tons). Volume 163,902 cf. Size modifier +9. Cost $1,151,982,634. HT 9.
- **Ground Performance:** Speed 90 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.

- **AUCS Statistics:** aScan +1, aPSig -9.

Note: The Mark VI was produced in very small quantities; the price has been increased by 25% to reflect this. See p. VE199.



Doppelsoldner

The Doppelsoldner, named after a Renaissance warrior who carried a two-handed sword, was the Paneuropeans' last and biggest cybertank. About the same length as the Ogre Mark VI, it was even more massive. Doppelsoldners were also more plentiful than the Mark VI, but never truly common. The Doppelsoldner represented a fusion of the Fencer design with the original Ogre concepts; in particular, the Fencer's lack of any "main" batteries was seen as a weakness and remedied in the new unit, while the Fencer's four missile racks were cut down to three. The seemingly baroque design was intended to bounce shells away and to minimize the chance of collateral damage when one weapon was taken out. Overall, the "Dopp" can dish out damage faster than the Mark VI, but the VI can take considerably more punishment. The Doppelsoldner first appeared with Paneuropean forces in 2089.

- **Subassemblies:** Tracks (four, Trk), two main limited-rotation turrets (Main1 and Main2), eight secondary limited-rotation turrets (Sec1 through Sec8), 12 antipersonnel full-rotation turrets (Ap1 through Ap12), three missile racks (Pod1 through Pod3), one superstructure (Tow).
- **Body Features:** 60 degree slope F, R, L, 30 degree slope B. Articulated.
- **Propulsion:** Tracked drivetrain with 160,000 kW motive power (HP 2,710, 160,000 kW).
- **Weaponry:** Two main battery assemblies (Main1 and Main2). Eight secondary battery assemblies (Sec1 through Sec8). 12 antipersonnel battery assemblies (Ap1 through Ap12). Three missile launch racks (Pod1 through Pod3). Standard ammo loadout, including 20 missiles stored internally.
- **Instruments, Electronics, Miscellaneous:** Standard comm, sensors, nav, ECM (Bod). Advanced sensors (Tow). Ogre brain (Bod). Full fire suppression (Bod, HP 15).
- **Power:** 161,000 kW fusion reactor powers all systems but weapons (Bod, HP 1,415). 240,000,000 kWs rechargeable power cell powers weapons (Bod, HP 190).
- **Space:** *Access Space:* 113,221 cf (Bod). *Cargo Space:* 500 cf (Bod). *Empty Space:* 28,000 cf in tracks, 3.6 cf in tower.
- **Volumes:** Bod (115,827 cf). Trk (97,497 cf). Main (1,312 cf each). Sec (512 cf each). Ap (62 cf each). Pod (480 cf each). Tow (20 cf). *Surface Area:* Bod 14,257, Trk 12,710, Main 719 each, Sec 384 each, Ap 94 each, Pod 368 each, Tow 44. Total area and structural area 33,753.
- **Structure:** Ultra-heavy, advanced, robotic. *Options:* Heavy compartmentalization for body. Improved suspension.
- **Hit Points:** Bod 171,084, Trk 38,130 each, Main 8,628 each, Sec 4,608 each, Ap 1,128 each, Pod 4,416 each, Tow 528.
- **Armor:** Advanced laminate (BPC) all over. *Body:* F PD 6, DR 18,000. R, L PD 6, DR 14,000. B PD 5, DR 12,000. T PD 4, DR 18,000. U PD 4, DR 10,000. *Tracks:* PD 4, DR 3,000 all over. *Tower:* PD 4, DR 3,000 all over. *Turrets and Pods:* As listed on pp. 91-92.
- **Surface Features:** Sealed, radical emission cloaking.
- **Statistics:** Empty weight 6,817,706 lbs. Payload up to 10,000 lbs. Loaded weight 6,827,706 lbs. (3,414 tons). Volume 222,248 cf. Size modifier +9. Cost $1,106,491,135. HT 10.
- **Ground Performance:** Speed 90 mph. gAccel 6 mph/s. gDecel 20 mph/s. gMR 0.5. gSR 8. Moderate GP, 1/2 off-road speed.
- **AUCS Statistics:** aScan +1, aPSig -9.

The Mark VII?

When the Mark VI was in early production, Combine engineers began working on plans for the Mark VII. Many thought the VII would be a waste of funds; it was clearly big enough and expensive enough that the enemy could use a strategic nuclear missile on it (or several) and justify the expense. However, similar arguments were made about the Mark VI, and this fear was rarely realized. Plans were completed for the VII and templates created. However, none had actually been produced when the Manila Accords were signed, so the templates were mothballed at the Seattle-Vancouver hyperfac.

The Combine Mark VII would have had four main batteries, 12 secondary batteries, 24 antipersonnel batteries, four missile racks, and 32 missiles carried internally. Its top speed would have been 60 mph on smooth terrain and 30 mph off-road.

Naval Ogres

While Ogre ships and submarines existed, they were never produced in great numbers. The strategic reasons for this are complex, but basically, the fact that naval battles were relatively uncommon probably determined the focus of cybernetic research. No one ever truly challenged the Nihon Empire's dominance in the Pacific, and the Combine overwhelmed Paneurope's navy only a few years after the Last War began. With most battles being fought on land, the naval software that would have formed the core of a cybership's mindseed was much less advanced than the corresponding tank software. Many of the cyberships that were built by the Combine made serious tactical mistakes when tested. The few Combine naval Ogres in the Atlantic were almost exclusively used to guard transports carrying land Ogres. The Nihon Empire had greater success with naval Ogres, and used many in its conquest of the Pacific Rim, mostly against technologically inferior nations.

> 7.0 COMBAT

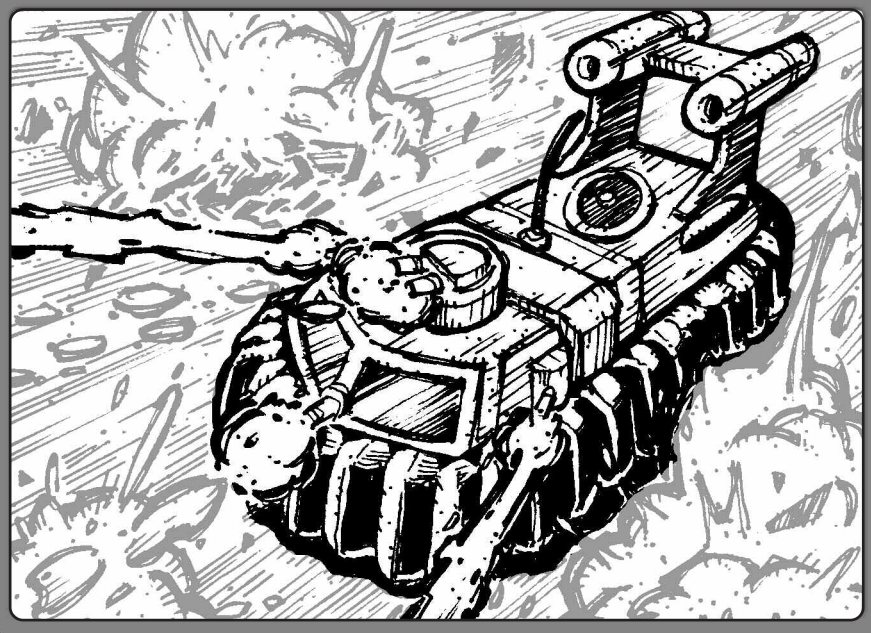
> BEGIN

DISPLAY

>TARGET: GALAHAD

>AFFIL: ??PE??

>UNIT 328,
>16TH BATT,
>PILOT AZIF
>J., BROKE
>FORMATION, IS
>FIRING ON
>PE UNITS AND
>IGNORES ALL
>QUERIES.
>POSSIBLE IFF
>VIRUS OR
>DERANGED
>PILOT. THIS
>UNIT IS NOW
>A THREAT.
>PERMISSION TO
>DESTROY?



Crunch. Crunch. Crunch. Crunch.

"Gah! Doesn't that ever get on your nerves?"

"What?"

"The crunching sound!"

"Mmm? Oh. No, you get used to it. Half the Sahara is glass, now. The sound of fused sand breaking under your tank's treads is just part of the ambience."

There was a pause as the new recruit digested this.

"How long till I learn to ignore it?"

"Oh, months. Nearly drove me into a Section 8. Got to the point where I couldn't stand to listen to people eating crackers."

"Great."

"Whup, heads up! Detecting electromag launch at two-eight-zero degrees, seven klicks!"

"Roger, turning to two-eight-zero to present front armor. Computer reports point defense ready."

"Signal is repeating at two-second intervals. Could be hypersmarts."

"Oh, hell. Out of our hands, right?"

"Right. Have faith in the computer, it . . . Damn, lead missile just went AESA! We're painted like a barn!"

The tank throbbed as the dual-purpose railgun locked onto the "noisy" lead missile and knocked it out of the sky. The occupants barely had time to register this before the missile's siblings, homing on its radar-return, detonated bare meters above the tank and drove spears of plasma through it. A little more of the Sahara turned to glass.

This chapter explains the rules for concepts introduced earlier. Many of these are expansions, clarifications, or simplifications of rules from ***GURPS Vehicles*** and elsewhere. As with anything in ***GURPS,***, use only those rules that will make your game enjoyable.

Sensors

The first step in combat is detecting the enemy. This is accomplished with an Electronics Operation (Sensors) roll. The skill roll is modified by Speed/Range exactly as on p. B201, except that speed is *subtracted* from range rather than adding to it! Moving targets are easier to detect. Modifiers for specific sensors are listed in the sidebars. For PESA, each vehicle has an aPSig listed that combines the vehicle's size modifier, distortion jammer rating, and emission cloak rating into one number. The Electronics Operation (Sensors) roll also gets a +4 if the sensor operator has already detected the target with another sensor (or is in communication with someone who has already detected the target), and a -4 if the sensor operator is distracted (e.g., by driving the vehicle).

On a failure, the object is not detected. On a critical failure, the operator has misidentified something (e.g., mistaking a building for an Ogre). On a success by 0-2, the operator has achieved "Detection." He knows something is out there, and the approximate direction and distance. A success by 3-4 is "Recognition." The operator has a general idea of what sort of target it is (e.g., "a tank"). Success by 5+, or a critical success, gives "Identification." The object's precise nature is determined (e.g., "a Paneuro heavy tank"). Any success with a PESA or AESA allows targeting; it's not necessary to precisely identify something before blowing it up.

PESA

This is a multi-mode, electro-optical sensor – basically, a television camera with additional telescopic, infrared, and passive radar settings. Its modes of operation include thermograph, passive radar, low-light TV (all described below), and daylight TV. (Daylight TV mode essentially is normal human vision.) It can also act as a telescope in all modes, with a maximum magnification equal to range in miles. Switching modes takes 1 second. Its line of sight is blocked by very solid objects, and it cannot see over the horizon. A PESA can also function as a digital camera, storing images of anything it sees in computer memory.

AESA is the active counterpart to PESA, incorporating active radar and ladar. It is uncommon in this setting. See ***GURPS Vehicles*** for a more extensive discussion of AESA.

Night Vision (Low-Light TV Mode)

Grants the equivalent of the Night Vision advantage (p. B22).

Thermograph

This is high-resolution infrared mode. Within its range, it allows the user to recognize objects by their heat contrast: people and machines show up as silhouettes. While surface detail is fuzzy, the user can tell hot objects from cold and (for example) can spot a cold metal gun under a man's jacket, track warm footprints left on cold ground, or spot a hidden, powered-up vehicle or living person. It gives +2 to rolls to spot living beings during daylight and +4 to Tracking rolls if the trail is no more than an hour old. Thermograph works in total darkness with no penalty and can see through fog, clouds, or smoke (though not special "hot smoke"; see p. 104). A thermograph is sensitive enough to be able to resolve heat shapes concealed behind brush or through thin walls, though this requires an Electronics Operation (Sensors) roll at a penalty equal to the wall's (HT + DR), and the shapes will be fuzzy silhouettes.

Passive Radar

This is a passive millimetric-band sensor. All objects radiate millimeter wave electromagnetic signals much like they do heat. A passive radar assembles these signals into a picture in the same way as a thermograph. Passive radar is used to supplement thermograph, as it is less vulnerable to certain countermeasures.

PESA Modifiers

Aside from the horizon and solid objects, PESA detection is automatically blocked by 10 yards or more of hot smoke or blackout gas, or 50 yards of blizzard, dense forest, or jungle. These modifiers apply to both thermograph and passive radar mode, except that hot smoke has no effect on passive radar.

Size modifiers (apply normally):
Object is silhouetted against sky: . . .+2
TL11 basic emission cloaking: . . . . .-7
TL11 radical emission cloaking: . . .-14
Distortion
jammer: . . . . . .-1/2 of Jam rating*
Blackout gas or
hot smoke: . . . . . .-1 per yard between sensor and target
Blizzard: . . . . . .-1 per 5 yards
Falling rain or snow: . . .-1 per 50 yards
Light woods: . . . . . .-1 per 50 yards
Dense woods
or jungle: . . . . . .-1 per 5 yards

For detecting battlesuit troops only:
Prone behind minimum cover,
head down: . . . . . .-7
Any position, only head exposed: . . .-5
Prone or crawling without cover: . . .-4
Body half exposed: . . . . . .-3
Behind light cover: . . . . . .-2
Crouching/sitting/kneeling
without cover: . . . . . .-2

* If there are *no* visual obstructions (trees, haze, smoke, darkness) between the sensor and the target, use -1/4 of Jam rating.

PESA Results Table

Detection gives a bearing and approximate size.

Recognition means the object's shape stands out; e.g., "A medium-size ground vehicle with a turret."

Identification resolves a sharp image; e.g., "A Combine Raptor GEV."

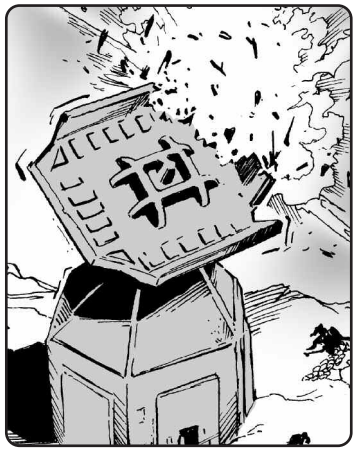
Thermograph will also give information on the temperature of the target, while passive radar can distinguish between metallic and non-metallic objects.

In this setting, turning on an *active* detection system such as radar is suicide. For simplicity, assume any unit that uses an active sensor is detected and recognized by every other unit out to the active sensor's maximum range.

As in the vignette above, a missile may use AESA to pinpoint a target, providing the data to its companion missiles before being shot down. AESA targeting data provides a +2 to targeting rolls.

For much more detailed rules on detection, consult ***GURPS Vehicles.***

ECM (Electronic Countermeasures)



Detection countermeasures in this setting are far in advance of most technologies. The two most important are distortion jammers and emission cloaking.

Distortion Jammer

This technology is available in its TL11 form in the ***Ogre*** setting. It radically alters the unit's EM image, fooling active and passive scanners and even the naked eye! Its base Jam rating is used against active systems (radar, ladar, AESA) and infrared homing missiles. Use *half* its Jam rating, rounded down, against thermograph and passive radar. Against the naked eye, use *one-quarter* the jammer's Jam rating (rounded down); this represents primitive holographic decoys producing a "cloak" effect that is convincing at a distance.

Example: The Ogre Ninja has the most advanced ECM technology available, including a distortion jammer rated for Jam 14. If someone is foolish enough to use active radar in an attempt to detect a Ninja, they take a -14 penalty to their roll as the Ninja viciously spoofs their scan. Ordinary PESA detection is at -7, thanks to deceptive thermal and millimetric radar emitters. If someone is out looking for the Ninja with nothing more complex than binoculars, the penalty is only -3.

Emission Cloaking

This technology reduces and alters a vehicle's emissions, including heat, engine noise, and millimetric radar output. ***Ogre-***universe cloaks are TL11, subtracting 7 if basic, or 14 if radical, from attempts to spot the vehicle using PESA and related technologies. They have no effect on active sensors.

Laser Designation

Many shells and missiles used by both sides can use laser homing to find targets. This requires that the target be "illuminated" or "painted" by a target-designating beam. It can be assumed that every military vehicle, and any personal weapon bigger than a pistol, has at least one designator built in. To guide the weapon, the illuminating laser must be constantly active and aimed at the target. If the laser stops, is pointed away, or is blocked, the benefit is lost.

Indirect Fire

Indirect fire simply means that the gun is firing in a ballistic arc. The target may be behind an obstacle, or even over the horizon. Maximum range for indirect fire is 2.5 times "Max" range; minimum range for indirect fire is one-tenth that. Indirect fire can be performed by any personal grenade launcher, or any vehicular gun with a high-angle or universal mount. (This includes virtually every vehicle-mounted gun in the ***Ogre*** setting.)

Indirect fire is technically not aimed at a target, but at geographic coordinates – in game terms, a particular hex. The intent is that an enemy will be at that spot when the shell arrives. The imprecision of this technique is why smart area-affect weapons like SATNUC rounds are used.

The rules for hitting any spot whose coordinates are known, or which can be seen, are as follows. To hit an arbitrary hex, apply range modifiers. There is no Acc bonus; indirect fire is always treated as being beyond 1/2D range. Military personnel will get a +1 bonus for map quality, and vehicles get +6 for their Fire Direction software. If the firing vehicle has been stationary for 10 seconds, it gets an additional +2 for fixed position. If the shell has the cannon-launched guided projectile option (all SATNUC rounds do) and the target is laser-illuminated, indirect fire is at +5 and range penalties are ignored.

Hitting a stationary target whose location is uncertain requires either shooting blind or a forward observer. This observer must be in communication with the gunner, through radio or a Datalink. Relaying the coordinates requires two seconds through a Datalink, or 2d+5 by voice radio. Under these circumstances, the roll is at -5, plus how much the observer made his Forward Observer roll by (or *minus* the amount he missed it by). (The Forward Observer skill is on p. B243; it defaults to IQ-5.)

Hitting a moving target, seen or unseen, has all the modifiers listed above, minus *twice* the speed modifier. With the long "hang time" of indirect fire weapons, it is very difficult to predict where a fast-moving target *will be.*

A miss is handled using the scattering rules on p. B119, except that the scatter distance is greater. Find the amount the roll was missed by in the *Speed/Range* column on the *Size and Speed/Range Table* on p. B201. Read over to the *Linear Measurement* column; this gives the distance the attack missed by. Minimum is 1 yard, maximum is 1/10th the original range.

Example 1: Marlowe 5, an Ogre with Gunner-15, is attempting to hit a known point 2 miles away. The Ogre is stationary, giving the fixed-position bonus. The target is not illuminated. Marlowe's modified skill is 15, -19 for range, +1 for maps, +6 for Fire Direction, +2 for fixed position, totaling 5. It rolls a 13, a miss by 8. The *Size and Speed/Range Table* shows that the round missed the target hex by 45 yards. The target is still well within the blast radius of the SATNUC shell, so it takes 6d×200 nuclear-blast damage.

Example 2: A trooper with a HEAT launcher is trying to hit Marlowe 5 from 1 mile away. He has Guns (Grenade Launcher)-12. The Ogre is being illuminated by one of the trooper's squadmates, who is also acting as a forward observer (with Forward Observer-13). The observer makes his roll by 2. The trooper must roll vs. 12, +1 for maps, +5 for an illuminated target, -5 for relying on forward observation, and +2 for the forward observer roll, totaling 15. He rolls a 12, scoring a direct hit. Meanwhile, Marlowe has noticed that it is illuminated, and casually smokes the forward observer . . .

MAD (Magnetic Anomaly Detector)

A MAD detects the fluctuations in the Earth's magnetic field caused by the movement of large ferrous objects. It also detects the magnetic fields produced by operating fusion plants and the firing of electromagnetic weapons at five times its normal range. Use of a MAD does not require line of sight. It is omnidirectional and able to scan through walls, solid objects, and over the horizon. It cannot be used for targeting but still serves as a valuable secondary sensor system in most combat units.

MAD Sensor Modifiers

Apply size modifiers normally for any object that is mostly ferrous metal or has ferrous metal armor. This does *not* include most combat vehicles in the ***Ogre*** world! For these units, apply *half* of the vehicle's size modifier, rounded down.

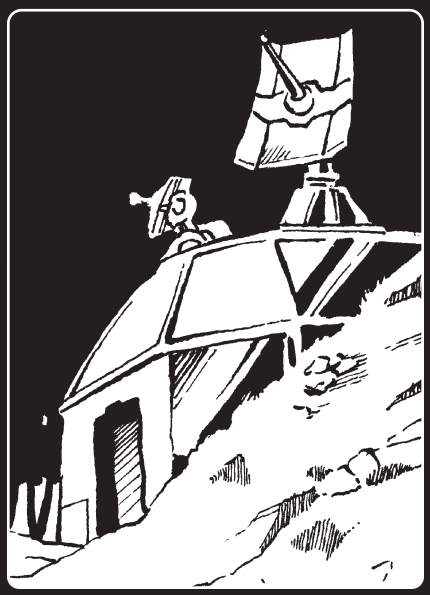
TL11 basic emission cloaking: . . . . . .-7
TL11 radical emission cloaking: . . . .-14
Just fired electromag weapon: . . . . . .+5
Ogre with operating fusion plant: . . .+5

MAD Sensor Results Table

Detection gives the object's bearing and signal strength.

Recognition allows the operator to distinguish between an object detected due to its metal content, an electromag weapon discharge, and a fusion plant.

Identification gives enough detail to identify the precise output of a fusion plant or the power drain of the weapon. This is usually enough information to allow the unit to be identified. If the target was only detected because of its metal content, this level of precision provides no more detail than "recognition."



Point Defense Modifiers

For a 30mm railgun fired by a Gunner-13 program, the point defense roll is 22, with these modifiers:

80mm to 175mm SATNUC round fired indirect: . . . . . .-22

Hypersmart launched by missile tank: . . . . . .-14

Hypersmart launched by any howitzer: . . . . . .-18

Rattler missile: . . . . . .-18

Cruise missile: . . . . . .-20

Missile using AESA: . . . . . .+10

Missiles traveling in pack: . . . . . .-1 for each companion

Distance traveled: . . . . .+1 per full mile the shell or missile has traveled, to a maximum of +10

The base roll is skill + (Acc/2) (including the *Aiming Successive Groups* rule from pp. VE182-183). The modifiers for each type of munition incorporate size, speed, evasive capabilities, and armor, with some rounding to give easy-to-remember numbers.

Computer Capacity

Most military vehicles carry one Complexity 5 computer and one Complexity 4 backup computer, both with the very-high-capacity and robot brain options. This allows them to run two programs of Complexity 5 and two of Complexity 4 simultaneously. The important software – Targeting, Gunner, Routine Vehicle Operations, and Fire Direction – are also Complexity 5, the best the system can handle.

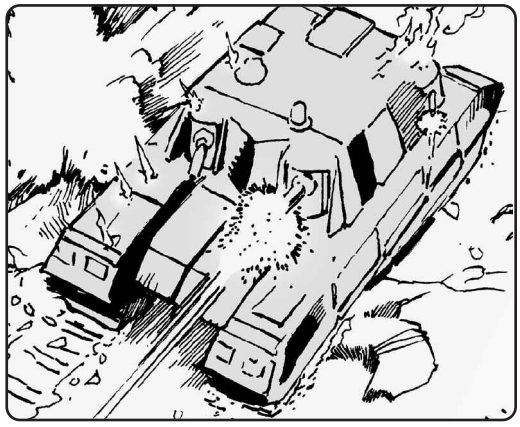
All these programs *can* run at a lower Complexity, lowering the skill or skill bonus by 1. If a system is maxed out (e.g., running two C5 Targeting programs for human gunners and two C4 Gunner programs for point defense) and needs to activate another program, it will automatically lower the effective Complexity of a running program to provide room. By default, a military computer will lower Routine Vehicle Ops before lowering any gun-related program, and will lower any program it is using itself before lowering a system being used by a human.

Point Defense

Most military vehicles in this setting are equipped with a point-defense system. A common format is a 30mm dual-purpose railgun loaded with HEAT rounds. For simplicity, this is handled using one die roll vs. the Gunner skill of the target's computer; most of the vehicles in this book have computers with Gunner-13. The modifiers are listed in the sidebar. Point defense is only used against indirect fire and missiles; direct fire comes in too fast, and from too close! If the roll succeeds, the incoming shell or missile is safely deflected. GMs may determine collateral damage as they see fit; most nuclear weapons *won't* go off accidentally. Do not roll Dodge for evasive shells or missiles; the listed modifiers cover that. Also, do not roll damage. Any hit by a HEAT round is assumed to be sufficient.

Explosives and Explosions

It's fair to say that most ***GURPS Ogre*** adventures include an explosion or two. Explosives range from construction tools like PLASTEX-B to strategic nuclear weapons.



Explosion Damage

The primary damage from an explosion is *concussion* damage, produced by the shockwave and expanding gases of the explosion. It is crushing damage, applied to all parts of the human body. The blow-through rule (p. B109) does not apply. Concussion damage works using the rules on pp. B121 and HT22-30; this is a synopsis.

Concussion damage degrades very quickly with distance. For explosions doing up to 6d×20 damage, concussion damage is quartered for each 2 yards from the center of the explosion. One pound of PLASTEX-B does 6d×12 in the hex of the explosion and the six adjacent hexes. At 2 and 3 yards, damage is 6d×3. At 4 and 5 yards, damage is 4d+2 (four and a half dice). At 6 and 7 yards, damage is 1d. At 8 and 9 yards, damage is 1d-3. Beyond 9 yards, damage is negligible.

Larger explosions cannot be treated the same way. For every tenfold increase in the base damage of an explosion, double the increment at which damage is quartered. This means that 10 pounds of PLASTEX-B does 6d×120 damage from the center of the explosion to 3 yards; 6d×30 at 4 to 7 yards; 3d×15 at 8 to 11 yards, and so on.

Body armor does not protect against concussion damage unless it's rigid and sealed. Toughness protects normally. One critical rule: The DR of vehicles, structures, and sealed armor is *squared* against concussion damage!

Example: A 6d×30 explosive detonates, doing 630 points of damage. A trooper is standing 5 yards away in his DR 100 battlesuit. By the time the blast reaches him, it is quartered to 157 points of damage. Since he has an effective DR of 10,000 (100 squared) vs. concussion damage, he takes no damage.

Nuclear Explosions

A nuclear detonation does concussion, flash, and radiation damage. Concussion damage is handled as above. Flash damage is subsumed into concussion damage, though special effects vary. Radiation damage comes in two forms: hard radiation produced by the blast itself, and residual radiation (fallout). Radiation exposure is measured in *rads.* Hard radiation damage is equal to one rad per point of concussion damage from the blast, divided by the Protection Factor (PF) of any armor the target is wearing. Battlesuits have radiation shielding providing PF 1,000. Vehicles rely on the inherent PF of their BPC (see sidebar).

Fallout is caused by the material (e.g., dirt) kicked up and irradiated by the blast. The nuclear weapons used in the ***Ogre*** world are both small and clean, using exotic fissionables. Their battlefield utility is high; their effect on the environment through fallout is (relatively) low. The "footprint" affected by fallout will be an area 800 yards long and 200 yards wide drifting downwind. This assumes a 100-ton bomb; double the length and width for each tenfold increase in yield. Anyone passing through this area will be exposed to 1 rad/hour. After two days, this drops to 2 rads/day. After two weeks, residual radiation is negligible. The effect of radiation on humans is covered in ***GURPS Compendium II,*** p. 145, ***GURPS Space,*** *Third Edition,* p. 104, and ***GURPS Grimoire,*** p. 103.

Radiation Shielding Table

This table lists the PF for armored vehicles. This is based on the DR of the side facing the radiation. Vehicles that are just "enclosed" (such as most civilian vehicles) are not air-tight; sealed vehicles get better protection.

	Vehicle Protection	
DR:	*Enclosed*	*Sealed*
under 100	1.5	2
100-199	5	10
200-399	50	100
400-799	500	1,000
800-1,599	5,000	10,000
1,600-3,199	50,000	100,000
3,200-6,399	500,000	1,000,000
6,400-12,799	5,000,000	10,000,000

Each further doubling of DR increases PF by a factor of 10.

Chemical and Biological Warfare

Chemical and biological warfare are uncommon but not unknown. Both are considered atrocities and war crimes, but when nukes are being used liberally, the definition of "atrocity" becomes vague. Both are also fairly ineffective; all battlesuits and vehicles are sealed, and any nearby nuclear blast reduces dangerous chemicals and viruses alike to component atoms. The most successful biowar tactics have involved introducing "demoralization" bugs into enemy civilian populations (an example is below). Anything nastier results in extreme quarantine measures and possibly nuclear sterilization of the area affected.

Virus-IV

Technically known as Virus ID-1592/IV, this virus acts as a mild suppressant to the immune system. Use the *Contagion* rules from p. B133 to represent its spread. It has no symptoms itself but lowers the HT roll by -3, making it easier catch anything *else.* The GM may either decide by fiat what other diseases are going around or have the victim roll HT-3 each day until cured. On a failure, a mild cold, sore throat, or case of the flu has been caught.

No medical treatment for Virus-IV itself exists, beyond the traditional: Bed rest, chicken soup, etc. The victim will recover in 15-HT weeks (minimum 2).

Nuclear Damage Table

This chart lists the damage done by nuclear devices at various distances. It also lists the Quartering Increment Radius (QIR), so damage for distances not listed can be calculated. For distances, "y" is yards and "m" is miles. For damage listings, a "k" should be read as thousand, and an "M" as million. A – indicates negligible damage. Some of these damages have been rounded off to provide convenient numbers.

Name:	***tenth-ton***	***one-ton***	***10-ton***	***100-ton***	***kiloton***	***10kt***	***100kt***
QIR:	***8***	***16***	***32***	***64***	***128***	***256***	***512***
Damage at:							
0y	12d×200	12d×2k	12d×20k	12d×200k	12d×2M	12d×20M	12d×200M
8y	12d×50	12d×2k	12d×20k	12d×200k	12d×2M	12d×20M	12d×200M
16y	12d×12	12d×500	12d×20k	12d×200k	12d×2M	12d×20M	12d×200M
24y	12d×3	12d×500	12d×20k	12d×200k	12d×2M	12d×20M	12d×200M
32y	9d	12d×120	12d×5k	12d×200k	12d×2M	12d×20M	12d×200M
48y	1d-2	12d×30	12d×5k	12d×200k	12d×2M	12d×20M	12d×200M
64y	–	12d×8	12d×1,200	12d×50k	12d×2M	12d×20M	12d×200M
96y	–	6d	12d×300	12d×50k	12d×2M	12d×20M	12d×200M
128y	–	–	12d×80	12d×12k	12d×500k	12d×20M	12d×200M
192y	–	–	12d×5	12d×3k	12d×500k	12d×20M	12d×200M
256y	–	–	4d	12d×800	12d×120k	12d×5M	12d×200M
384y	–	–	–	12d×50	12d×30k	12d×5M	12d×200M
512y	–	–	–	12d×3	12d×8k	12d×1,200k	12d×50M
768y	–	–	–	–	12d×500	12d×300k	12d×50M
1,024y	–	–	–	–	12d×30	12d×80k	12d×12M
1m	–	–	–	–	–	12d×5k	12d×3M
2m	–	–	–	–	–	4d	12d×50k
4m	–	–	–	–	–	–	12d×3

How Many Submunitions?

Each SATNUC round contains a number of submunitions equal to (bore size or diameter)/40, *squared* (round down after squaring). This is a correction of the formula on p. VE192. Here are the munition counts for ***Ogre*** weapons:

Bore Size	*Submunitions*
80mm	4
90mm	5
100mm	6
135mm	11
175mm	19

Missiles as Vehicles

To compute the diameter of a missile in feet, find the cube root of the volume and divide by 2. Multiply the diameter by 10 to get the length. Round to two places. To convert diameter from feet to mm, multiply by 305. (These are approximations, but good ones.) Once diameter and weight are known, the normal ***GURPS Vehicles*** launcher design system may be used (p. VE120).

SATNUC Explosives

SATNUC stands for SATuration NUclear Cluster. Each round contains a number of submunitions, each with its own warhead and target seeker. When the missile or shell reaches the target, it will burst 30 yards above ground, releasing the "skeets." Each skeet is propelled downward at speeds in excess of Mach 4. Its scan area is limited to a radius of 5 yards. When it finds a target (which takes a tiny fraction of a second), the shaped nuclear payload detonates in midair. The explosion drives a thin jet of stellar-temperature plasma and concussive force downward. Roll 3d vs. (TL + target's Size Modifier) to see if the jet hits. Emission cloaking subtracts from the chance to hit, and subtract another 3 for dense overhead cover, as in a forest (though the forest won't be there for long). If it hits, the jet does 6d×2,000 explosive damage to the roof of the target. The shaped-charge effect of a SATNUC means that DR is *not* squared for a direct hit; it is instead multiplied by 10.

Regardless of whether the target was hit, the SATNUC also does 6d×200 within the damage radius, and 6d×20 out to twice that radius. DR *is* squared versus this damage. The rules for concussion-damage reduction over a distance do not apply; the damage is constant over the burst radii described above.

Micronukes

The micronuke warheads carried by Ogre Rattler missiles (and their Paneuro equivalents) also have a shaped-charge effect. As for SATNUCs, multiply DR by 10 for a direct hit, instead of squaring.

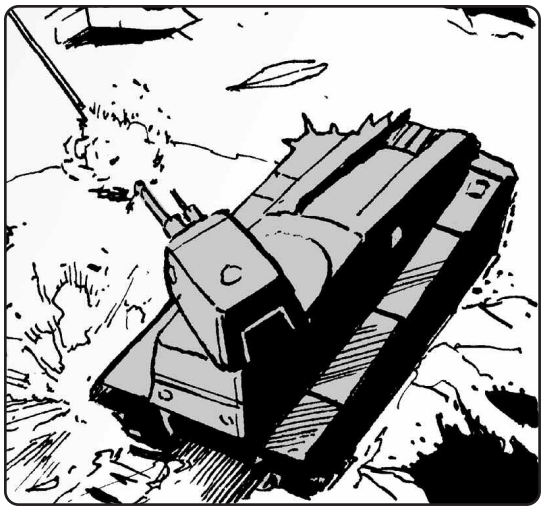
Other Nuclear Effects

If several nukes are fired at a target in a single turn, only the first will have any effect. The others will be destroyed by the fireball in a "fratricide" effect. For cruise missiles, this extends to any other missile within 6 miles!

Nuclear weapons also kick up dust clouds. Within the nuke's QIR (or a SATNUC's diameter), there is the equivalent of blackout gas for 5 seconds.

BPC Armor

Biphase carbide is the standard armor of the 21st century. Formed from overlapping layers of carbon fiber, it is extremely tough and lightweight. Battlesuits carry an inch or so, while an Ogre's brain is protected by *yards* of BPC. The BPC armor for most vehicles is cast in one solid piece, with every opening, bolt hole, and wire guide already in place. Making changes to BPC after the fact is very difficult. Drills and saws with artificial diamond tips and edges are used, and the diamonds wear out almost as fast as the BPC. (Diamonds – even artificial ones – are *harder* than BPC, but they make lousy armor.)



In action, BPC's fibrous structure spreads and diffuses the force of any impact. BPC is – *very* slightly – flexible, and "gives" when hit. The amount of give is almost too small to measure, but it dramatically improves the armor's toughness. BPC fibers also prevent it from cracking. Exposed to sufficient force, BPC *tears* like cloth, and the hulls of battlefield wrecks often look exactly like ripped fabric, cast in armor.

In rules terms, BPC is TL11 advanced laminate armor. Its structure breaks up the penetrating jet of most shaped-charge rounds, so BPC's DR is doubled against HEAT and HEDP shells. As with all rigid armor, its DR is squared against concussion damage. One square foot of DR 40 BPC weighs 1 lb. and costs $100.

Windows on military vehicles are made from a transparent derivative of BPC called carbspex. It is only transparent in the visible spectrum, and the inside is often coated with light-sensitive film that darkens when exposed to blinding intensities of light. Carbspex is not as strong as BPC per inch, but military windows are made thick enough to match the armor on that side.

Hit Them Where It Hurts

BPC is not "ablative" in ***GURPS Vehicles*** terms . . . but, to an extent, *all* armor is ablative. When BPC is damaged, it can be ripped away in chunks or melted. This produces a weak spot, which the enemy will be sure to exploit.

When BPC armor receives a direct hit, for every 50 points of damage done (before DR is applied), reduce DR on that facing by 1. This does *not* apply to near-misses by explosives, only direct hits.

Using Guns to Launch Missiles

Ordinary missile launchers are merely aiming systems that allow the missile to launch itself. It is possible to use an electromag gun to give a missile an initial "boost," before it lights its own engines. The boost it gets is equivalent to the muzzle velocity of the gun. To determine muzzle velocity, start by finding the maximum indirect fire range in yards (Max × 2.5). Multiply by 10.7 yards per second per second (1g), and take the square root of the product. The result is muzzle velocity in yards per second; doubling it gives miles per hour. (As above, these are approximations, but playable ones.)

Using Ogre or Ogre Miniatures With GURPS Ogre

Vehicular combat in ***GURPS*** is complicated with only two vehicles. Typical armor clashes in the Last War involve half a dozen to *hundreds* of units. Fortunately, two easy-to-use vehicle combat systems for this setting already exist: ***Ogre*** and ***Ogre Miniatures***.

Interfacing the systems requires rules for how PCs (and major NPCs) affect combat, and how the combat affects them. Separate rules are provided for the different roles the character may occupy.

In any instance where ***Ogre*** combat die rolls are modified, the roll cannot be increased over 6 or decreased past 1. Characters with any level of Luck may apply their Luck to ***Ogre*** rolls instead of ***GURPS*** rolls, if they choose. Many other skills and advantages can have an effect on battles; the GM should be flexible in allowing clever players to apply their PCs' talents.

Characters Are Vehicle Crew

During both movement phases, GEV pilots may make a Driving roll. On a success, the unit receives a 1-hex movement bonus. On a critical failure, the unit may not move. This is cumulative with road bonuses! No other units may get Driving bonuses; they move too slowly for good driving to have a noticeable effect. (For ***Ogre Miniatures,*** 1 hex equals 2".)

When any unit enters terrain which may disable it or cause it to be stuck, the driver may substitute a Driving roll for the disabled/stuck roll.

Continued on next page . . .

Using Ogre or Ogre Miniatures With GURPS Ogre (continued)

When an attack is being made, gunners in any vehicles participating in the attack may roll Gunner skill before the combat die is rolled. Only one gunner per vehicle can roll for a particular attack, and each character may only roll once per turn. On a success, add 1 to the combat die roll. On a critical success, add 2. On a critical failure, subtract 2. These are cumulative. *Example:* Three LGEVs are attacking an Ogre's secondary battery (a 1:1 attack). Each is piloted by a PC. The three rolls are a success (+1), a critical success (+2), and an ordinary failure (no modifier). This adds +3 to the combat die roll. The roll is a 2, modified to 5; the secondary battery is destroyed.

When a unit receives a "D" result, the occupants are assumed to be unconscious for a turn (4 minutes). This can represent anything from being shook up by a near-miss to getting a piece of your computer console embedded in your forehead; the GM may determine special effects as he pleases. Each occupant takes 1d of damage (Toughness protects, but not personal armor) and must make a HT roll at a penalty equal to the damage. On a success, the crewman is stunned (p. B127), and recovers automatically when the unit recovers from being disabled. On a failure, he is unconscious (p. B129) but may roll HT to regain consciousness when the unit recovers. On a critical failure, the victim takes another 1d of damage, is knocked unconscious, and recovers from unconsciousness at the normal rate described on p. B129.

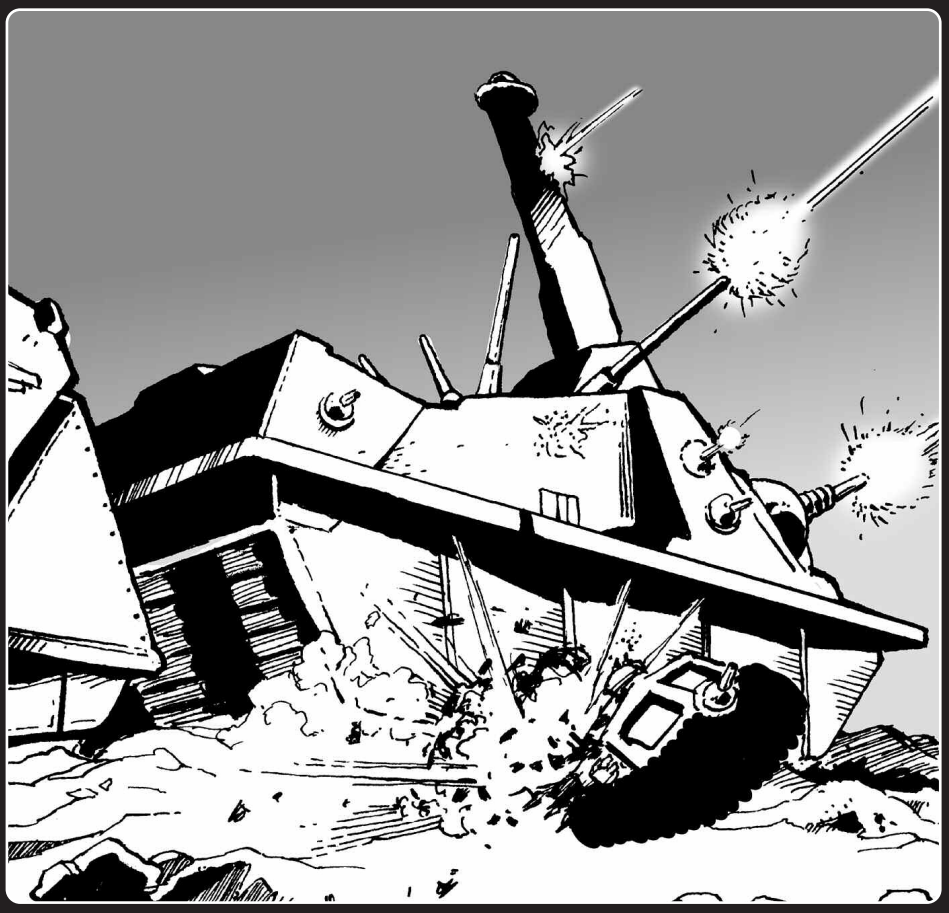
When a unit receives an "X" result, it is destroyed but not vaporized. The integrity of the vehicle is breached; all occupants take 2d damage and must roll for consciousness as for a "D" result. When the occupants recover, they may escape from the battlefield as they see fit, or fight as a 1/1 squad of militia (p. OGM18) if the GM permits. The vehicle *may* be repairable, at the GM's discretion.

In ***Ogre Miniatures***, a unit may also receive an "XX" result, which indicates the unit is blown to fragments – not even a hulk remains. The GM may rule that the occupants are dead or treat this as an "X" result doing 3d damage instead of 2d.

Continued on next page . . .

Knockback and Knockdown

The rules on p. B106 about knockback and knockdown apply to concussion damage as well, but a one-ton battlesuit is much less affected by blows than a 150-lb. person! For ***Ogre***-universe battlesuits, every full *100* points of damage moves the victim 1 hex away from the explosion. This is calculated before DR is applied. As a general rule, to move someone 1 yard requires 1 point of damage per 20 lbs. (Knockback is covered in more detail on p. CII63.) This assumes the soldier is upright and not braced; the flash that precedes the shockwave for most explosions provides some warning. With a successful DX roll, the soldier may brace or drop prone. If braced, every full *200* points of damage moves him 1 hex. If prone, every full *500* points moves him 1 hex. The other rules on p. B106, including the required DX check to avoid falling down (if not prone), are applied normally.



Armor Unit Combat System (AUCS)

This combat system presents a level of complexity between ***GURPS Vehicles*** and ***Ogre*** or ***Ogre Miniatures***. It is loosely based on the Space Combat System presented in ***GURPS Space,*** *Third Edition,* but modified to work with armor units in ground combat. It is best suited to short engagements between two to six units, but can also be used for longer or more complex actions. Some record-keeping is required; a sheet of paper for each vehicle will provide plenty of room to record damage taken and ammo used. Range to enemy vehicles and precision of detection should also be recorded.

The Engagement

Before any combat can occur, the opposing forces must have maneuvered, by accident or design, into the same general area (typically within 20 miles). Units may blunder into each other by accident, may be deliberately looking for a fight, or may be attacking a defended point or patrolling a particular area. The GM should then determine whether combat can occur, based on planned dispositions and movements. He can decide whether interesting terrain features will affect combat, or use the abstract terrain rules (see *Terrain,* sidebar).

Initiative

Prior to the start of the engagement, each side's commander rolls 1d and adds the applicable modifiers from the *Initiative Table* (p. 119). If they tie, both sides detect each other at roughly the same time and have an equal amount of time to prepare. If one side wins, it achieves *partial surprise.* If one side wins by 5 or more, it achieves *complete surprise.*

Partial Surprise means that one side has detected the other a few moments before being itself detected. An engagement is unavoidable, but one side is more prepared for it. The side that was surprised may only choose the Stop or Continue Moving maneuvers, and suffers -4 (-2 for people with Combat Reflexes) on all attack and maneuver rolls. Partial surprise ends at the start of a surprised unit's *second* turn.

Complete Surprise means that one side has detected the enemy some *minutes* before being itself detected. If PCs achieve complete surprise, the GM should describe the enemy forces to them in terms of probable number of units and composition.

If the side with surprise chooses battle, it has the time to either close, or stand off and fire long-range weapons, or both. The enemy may take no maneuvers other than Stop or Continue Moving, suffers -6 (-3 for people with Combat Reflexes) on all maneuver rolls, and may only fire against incoming munitions, using point defense weapons. At the start of the enemy's *second* turn, complete surprise ends, but the enemy is still off balance and suffers the effects of partial surprise, which lasts until the start of the enemy's third turn.

Alternatively, some or all of the units on the side with surprise may break contact instead of attacking, avoiding the combat. However, if all forces retreat, it means abandoning any building or position they were defending. In the case of a total retreat, no battle occurs, but the GM should consider the planned routes of both sides to decide whether a battle may take place hours later, elsewhere. If further action seems likely, roll initiative again; the GM may give the side that achieved complete surprise a bonus (+1 to +5) if its commanders made better plans based on their initial contact with the enemy.

Finally, a side with complete surprise may pull back but stay in fleeting sensor contact with the enemy units, perhaps hoping to be led to a base or the like; see the *Shadowing and Detection* sidebar.

Armor Unit Combat Turns

Armor unit combat is fought in *armor unit combat turns,* each representing four minutes of engagement time. In armor unit combat, each unit takes its turn in sequence until they have all had a turn, then they start over – just like in personal combat.

Using Ogre or Ogre Miniatures With GURPS Ogre (continued)

Characters Are Infantry

When a character is part of a squad that is attacking, he may roll vs. Guns and apply the result as for a vehicle crewman rolling vs. Gunner.

If a soldier is part of a 2-squad or 3-squad "counter" that receives a "D" result, roll one die. On a 1-2 (if he was part of a 3-squad counter) or a 1-3 (if it was a 2-squad counter), he is hit and incapacitated. If the infantryman is in a 1-squad counter that receives a "D," or part of any counter that receives an "X" or "XX," he is automatically hit and incapacitated.

A trooper who is hit and incapacitated rolls vs. HT. On a success, his suit is breached and he takes 1d of damage. On a critical success, the soldier takes no damage but his weapons are damaged beyond repair. On a failure, his suit is breached and he takes 2d of damage. A critical failure indicates a suit breach and 3d of damage. Even if the injured man is still able to fight, the NPC members of his squad are assumed to be out of action one way or another. He may join up with another squad, retreat from the fight, or wait for rescue.

If an entire squad is made up of PCs and important NPCs, enough of them may survive with minor injuries to continue fighting as a squad, essentially "shrugging off" the incapacitating ***Ogre*** roll result. This should be permitted.

Characters Are Command Staff

Strategy is the important skill for command staff. All characters serving in a command post may roll Strategy once per turn. On a successful roll, any unit that is being commanded by, or receiving information from, the character may apply a +2 bonus to any one combat die roll it makes that turn. Alternately, two units may receive +1 each. On a critical success, 3 bonus points are distributed to one, two, or three units. On a critical failure, the character may not roll next turn.

Characters Are Ogres

Any Ogre with a move of 4 (8" in ***Ogre Miniatures***) may use the Driving bonus rule listed above for GEVs. This includes the Mark IV and Ninja. Ogres may also use Driving skill for terrain disabled/stuck rolls. Ogres may roll their Gunner skill to improve their attack rolls as above, and may do so as many times per turn as they like, though they are still limited to one Gunner roll *per attack.*

aPSig, aScan, and aAcc

These statistics represent, respectively, a vehicle's passive sensor signature (how easy it is to detect), its scanning ability, and a weapon's accuracy, including the most common modifiers. In Chapters 4 through 6, each battlesuit, vehicle, and Ogre has its aPSig and aScan listed under *AUCS Statistics*. Weapon aAcc stats for the major weapons are listed on p.118.

GMs who wish to convert other vehicles and weapons to this system can determine aPSig, aScan, and aAcc as follows:

aPSig is equal to the unit's size modifier, minus (TL-4) if the unit has basic emission cloaking, or 2×(TL-4) if it has radical emission cloaking. If the unit has a TL11+ distortion jammer, also subtract half the jammer's Jam rating, rounded down. *Example:* A Combine GEV has a size modifier of +5, TL11 radical emission cloaking (-14), and a Jam 8 distortion jammer (-4). Its aPSig is -13.

aScan is a sensors' normal Scan rating minus 25 (the Speed/Range modifier for 20 miles, the default "long range" in AUCS).

aAcc combines the weapon's Accuracy bonus, a range modifier, and modifiers for aiming into one value. It is calculated as follows:

aAcc = (Acc/2) - 22.

Acc/2 is half the weapon's Accuracy (using the *Reduced Hit Probability* rule, pp. VE182-183). The -22 derives from the sum of these modifiers:

+3 for aiming for 4 seconds.

-25, the Speed/Range modifier for long range (20 miles).

Damage to Tracks

Tanks, Ogres, and other vehicles have two or four sets of tracks, as specified in the vehicle description under "Subassemblies." The hit points listed are for *each* track. A track that is reduced to half its original hit points is *seriously damaged.* A track that is reduced to 0 hit points or less is *crippled.*

For a two-track vehicle, if one track is seriously damaged, top speed drops to two-thirds its original value. If the other track is also seriously damaged, top speed drops to one-third its original value. If either track is crippled, top speed drops to 0.

A four-track vehicle can survive the crippling of one track. If no tracks are crippled, top speed is reduced by 20% for each track seriously damaged. If any one track is crippled, top speed is halved, and then reduced further by 20% (of original top speed) for each other track seriously damaged. (This can reduce top speed to 0.) If a second track is crippled, top speed is 0.

The turn sequence – the order in which the individual units take their turns – is up to the GM. The suggested method is that the side that lost the initiative roll (if both sides tied, roll a die) picks one of the *enemy's* units to go first and that unit takes its turn. Then the other side picks one of its opponent's units to take its turn. Keep alternating back and forth until one side runs out of units. The remaining units take their turns in whatever order their commander wishes.

After everyone has acted, four minutes have passed. Begin a new turn, with surviving units acting in the exact same order as before. To facilitate record-keeping, the GM should record the order in which individual units take their first turn (assign the first unit the number 1, the second unit the number 2, etc.).

Action Within the Turn

On a unit's turn, the following actions take place:

1. Detect. The unit may attempt to pinpoint the location of one enemy unit.

2. Maneuver. The commander picks a maneuver. Any Contests of Skill that maneuver requires are resolved.

3. Attack. The unit's gunners may fire weapons.

4. Defend. Any unit being attacked may attempt to defend using point defense.

5. Damage. Damage is applied to units being attacked.

6. Other Actions. The unit's crew may perform other actions (repairs, communication, etc.).

After this, the active part of the unit's turn is over and the next unit in the sequence takes its turn. However, the maneuver the unit chose is considered to remain in effect until the maneuvering phase of its next turn.

Detect

An enemy unit's location usually is not precisely known. There are four degrees of scan precision.

Unknown: If one side is completely surprised, the composition of the enemy's forces is unknown.

Existence: The number of enemy units is known, as well as each unit's general type (tank, hovercraft, Ogre, infantry, etc.). Each enemy unit's location is known to within a mile or two. This is the default level of scan precision; only units completely surprised will have worse information than this.

Locus: The enemy unit's location is known to within a few dozen yards, and its precise type is known (LGEV, GEV, GEV-PC, etc.). This level of scan precision is automatic if you are at point-blank range.

Pinpointed: The enemy unit's exact location is known, as well as its general condition (undamaged, missing one main battery, etc.).

You may attempt to improve your scan precision for one enemy unit on your turn. Roll vs. the Electronics Operation (Sensors) skill of one of your unit's crew. Apply all appropriate modifiers from the *Detection Modifiers Table.* If you succeed, your scan precision for that unit improves by one level. On a critical success, you have pinpointed the enemy. On an ordinary failure, scan precision remains the same. On a critical failure, your scan precision becomes "existence."

In this phase, you may also communicate all or some of your scan data to one friendly unit. This will make your unit easier to detect, however.

Maneuver

Each commander starts an armor unit combat turn by choosing any *one* of the following maneuvers. The maneuver a commander chooses will also affect

his unit's defenses if it is attacked before its next turn. Movement is largely abstract; no game board is required.

Surprised units may only perform Stop or Continue Moving maneuvers. A crippled or otherwise non-maneuverable unit (a building, stuck, etc.) is limited to the Stop maneuver.

Speed Modifiers: Some maneuvers give a bonus to the "faster" unit. "Faster" means "highest top speed," where speed can be aerial (for battlesuits in the air), hover (for GEVs), or ground. Where maneuvers require a Quick Contest of Driving, the following modifier applies to the faster unit's driver (use only the highest): +3 if faster, +6 if at least *twice* as fast, +7 if at least *five times* as fast, +10 if *10 times* as fast or better.

Attack Run: Only combat GEVs and other units with top speeds over 100 mph may use this maneuver. Choose a target (e.g., an enemy unit or building), and a range you wish to obtain (short or point-blank). You must have "locus" or better scan precision for that unit. You attempt to close to that range (or to maintain it) and place your unit in an optimum firing position. An Attack Run maneuver may not be performed on the first turn of an engagement unless your side has achieved complete surprise.

If your target is incapable of maneuvering, your Attack Run is automatically a critical success; you are at the range of your choice and are "Advantaged" against the target. Otherwise, your target must decide whether to engage you or evade. If his last maneuver was an Attack Run or Ram against *you,* he *must* engage; if it was Evasive Action or Break Off, he *must* evade.

Data Cards

It may be useful to put together a data card for each vehicle in the battle. This card should include aPSig, aScan, top speed, Electronics Operation (Sensors) skill for the vehicle commander, Driving skill of the driver, front, back, and top armor, and body HP. For each weapon, list aAcc, range, damage, and Gunner skill.

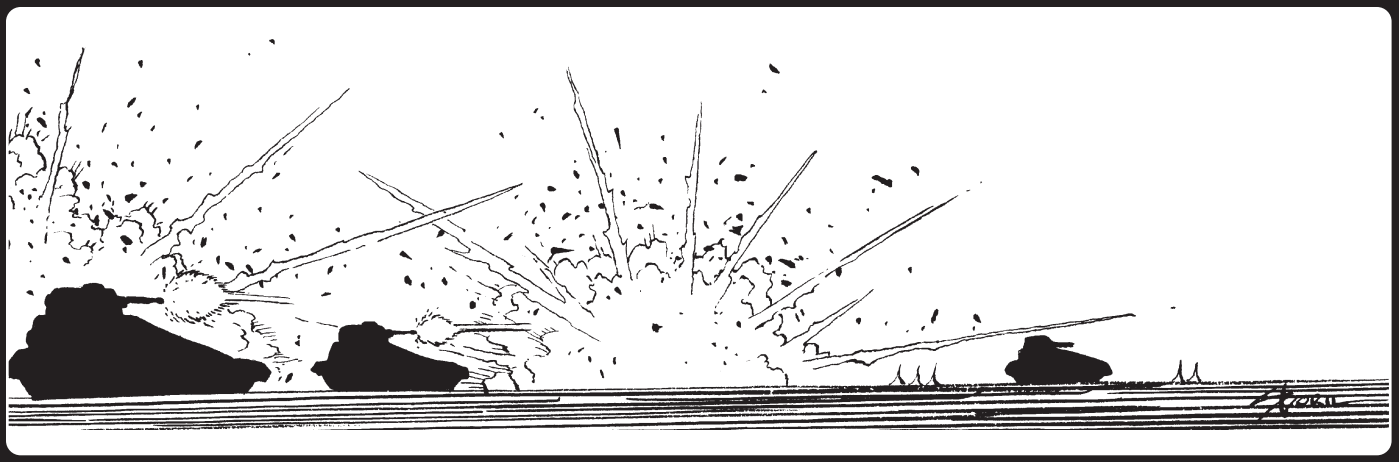
Unit: HVY-01 (Jaeger)
aPSig: -12 Top Speed: 70 mph
aScan: -1 HP: 9,678

Skills:
Commander has Electronics Operation (Sensors)-13.
Driver has Driving (Tracked)-14.
Driver has Combat Reflexes.

Armor:
F PD 6, DR 9,600
B PD 5, DR 3,600
T PD 4, DR 4,800

Weapons:

Name	Damage	aAcc	Range	Skill
175mm MB Cannon				
w/SATNUC	6dx2,000	-13	short	15
w/APFSDSDU	6dx175(3)	-12	P-B	15
30mm Railgun	9d(10)	-13	P-B	13
30mm Railgun	9d(10)	-13	P-B	13



Terrain

With no map, the Armor Unit Combat System must treat terrain either abstractly or by GM fiat. With GM permission, units may maneuver into terrain that provides bonuses to defense (penalties to attack rolls against that unit), or require units to pass through terrain that impedes movement (causing penalties to Contest of Driving skill). Recommended attack roll modifiers: For anything but Ogres, apply -2 if in light woods and -4 if in heavy woods, towns, or cities; for infantry, double this value.

Shadowing and Detection

A force that has completely surprised its opponents may choose to stay just on the edge of sensor range, shadowing the enemy. To do so, make another initiative roll every hour or so the shadowing takes place; the shadowing force gets a +3 bonus. If they retain "complete surprise," they can continue to shadow the enemy. Of course, their opponents may eventually arrive at a base or split into separate groups, forcing the pursuers to split up or otherwise take action.

If "complete surprise" ever drops to "partial surprise" or worse, the shadowing force has been detected and a battle may occur.

Option: Automatic Detection

The Space Combat System has no Detect phase; after initial contact, detection is assumed to be easy. This makes combat much simpler, but loses some of the flavor of ***Ogre*** combat. If you wish to implement this option, skip the Detect phase, and assume all units have Pinpoint scan data for all other units. Expect combat to be *much* more deadly!

If the target chooses to engage, the respective drivers roll a Quick Contest of Driving skills. The pilot with the faster unit adds speed modifiers (p. 113). If either driver is Advantaged against his opponent, he adds +4. The target's driver subtracts surprise penalties (if any). If either driver wins the Quick Contest by 4 or more, or via a critical success, he is Advantaged vs. his opponent. If you both get critical failures, you *collide!* Otherwise, win or lose, the two units are now at the chosen range.

If the target chooses to evade, a Quick Contest of Driving skills also takes place. The faster unit's driver adds speed modifiers. You receive a +4 if you were at short range to the target on your previous turn, or +6 if you were at point-blank range. You receive another +4 if you were Advantaged against him. Your target receives a +4 if his last maneuver was Evasive Action. If you win, you are both at your chosen range; if you win by 4 or more, or with a critical success, you are also Advantaged. If you tie or lose, your Attack Run fails and you are at medium range.

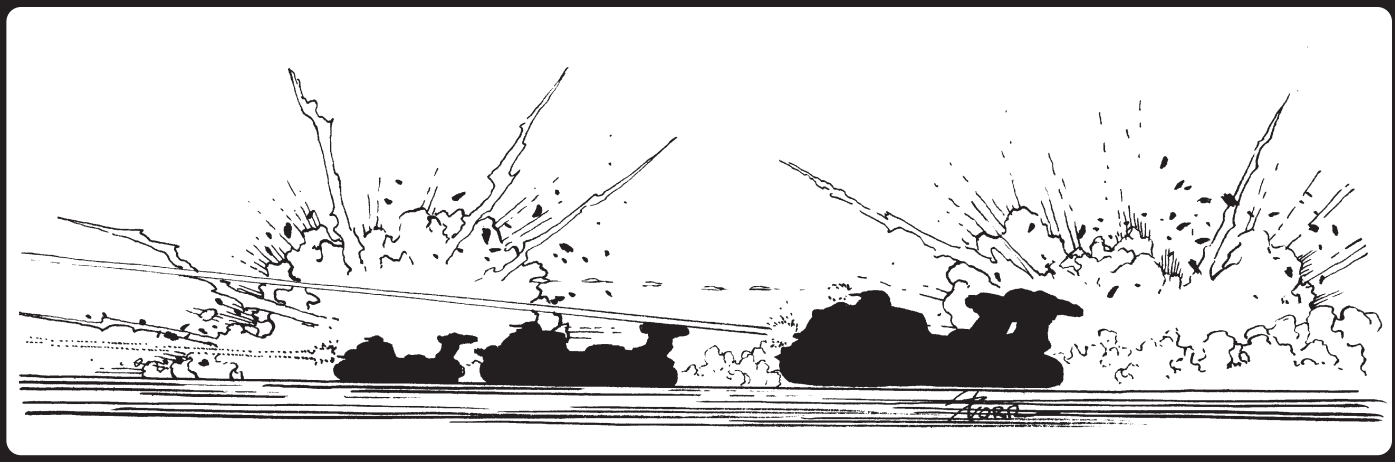
Break Off: You may not choose this maneuver if your unit's last maneuver was Attack Run or Ram. This maneuver represents an attempt to disengage from the battle. If a unit chooses a Break Off maneuver, it is assumed to have left the combat zone at the start of its *next* turn, if it has not lost maneuverability before then. However, any enemy units that successfully perform an Attack Run or Pursuit against it before then will escape with it. This forms a second engagement that begins immediately, some distance from the first.

Close/Avoid: This maneuver moves you one range increment closer or farther away from a target unit. Units at long range to all other units may not move farther away; use the Break Off maneuver instead. The target unit must choose to ignore your movement or counter it. If he chooses to ignore it, you automatically move to the new range increment.

If he chooses to counter it, you roll a Quick Contest of Driving skill against his driver. The driver of the faster unit applies speed modifiers (p. 113). If one unit is Advantaged against the other, its driver adds +4. If you win, you move to the chosen range increment. If you lose, the range increment remains unchanged.

Continue Moving: Your unit continues in a reasonably straight line, with only limited maneuvering. This is an option in a battle if you wish to keep your distance but not perform violent maneuvers. The GM may rule that a unit must Continue Moving for a certain number of turns in order to do something (e.g., cross a bridge or pass through a town).

Embark/Disembark: This maneuver may only be taken by infantry squads. It represents infantry getting onto a vehicle (such as a GEV



personnel carrier) or getting off a vehicle. Infantry may only board a unit which is taking the Stop maneuver. They may disembark from a unit that is taking the Stop or Continue Moving maneuver.

Evasive Action: You are maneuvering cunningly or violently, attempting to avoid enemy fire and to prevent enemy units from closing. Evasive Action gives your driver a +4 in any Quick Contest to evade units that make Attack Runs against your unit. It also gives your unit a favorable combat modifier against enemy fire.

Form Up: Your unit is maneuvering to establish a formation with other units, or to incorporate another unit into an existing formation. See *Formations* sidebar, p. 117.

Pursuit: You are attempting to follow a particular unit that is trying to flee the combat zone. Choose a target unit whose current maneuver is Break Off. You cannot pursue a unit that is more than 10% faster than your own, or for which you have only "existence" or worse scan precision. Your pursuit is successful if your driver wins a Quick Contest of Driving skills with the other unit's driver. Add speed modifiers (p. 113); add an extra +4 if you were at short or point-blank range to the target on your last turn, or +6 if you were Advantaged against it.

If you lose, your opponent will escape when he breaks off. If you win, your opponent breaks off from the main engagement, but you (and any other units that have successfully pursued) follow him, starting a new engagement.

Ram: You attempt to ram a unit or other target. To attempt this maneuver, you must select a specific target that you were at short or point-blank range to on your previous turn, and that you have "pinpoint" scan precision for. You may not attempt to ram a target that is Advantaged against you.

Your ramming attempt is *automatically successful* if your target is taking the Stop maneuver. Otherwise, your opponent must decide whether to accept the collision or attempt to evade it. If he wishes to accept the collision, you ram each other automatically.

If your target wishes to evade, your driver rolls a Quick Contest of Driving skills against your target's driver. The faster unit adds any speed modifier. You are at -4 *unless* you are presently Advantaged against this target. Your opponent gets +4 if his last maneuver was Break Off or Evasive Action. If you win the Quick Contest, your ram is successful. If you lose by 1 to 4, your ram just missed; you are now at point-blank range to your opponent. If you lose by 5 or more, you did not even get near your target, and will be at short range.

Ranges

In the Armor Unit Combat System, range is a (somewhat abstract) measure of how far apart two units (or convoys) are. It may be *point-blank, short, medium,* or *long.*

Point-blank represents a distance of 1 mile or less. This is the maximum range for infantry, antipersonnel weapons, and cannon direct-firing APFSDSDU. Any munition aimed at your unit is considered to be at point-blank range. Range modifier: +10

Short represents distances from 1 to 3 miles. This is the maximum range for indirect SATNUC weapons. Range modifier: +5

Medium covers the distances from 3 miles to about 8 miles. It is the maximum range for most missile weapons, including those used by howitzers and missile tanks. Range modifier: +3

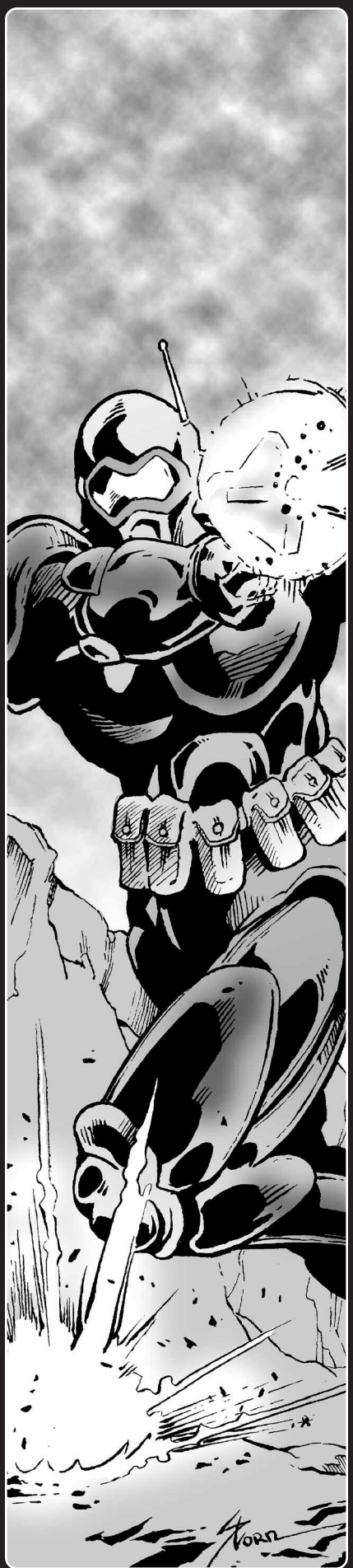
Long is any range over 8 miles. Only cruise missiles and lasers may attack at this range. Range modifier: 0

Advantaged

An Advantaged unit has maneuvered into an especially good firing position relative to its target. This can represent being out of the target's arcs of fire (e.g., getting behind a Mark V or superheavy), or a terrain advantage. You automatically have pinpoint scan precision for a unit you are Advantaged against.

Retaining Advantaged Status

One unit may become Advantaged over another as a result of an Attack Run maneuver, in which case it remains Advantaged until the start of its own next turn, regardless of the maneuvers taken by the enemy unit. After that, it is no longer Advantaged until it regains that status through another successful Attack Run maneuver. A unit cannot be Advantaged against more than one unit at a time unless those opponents are in the same convoy.



If a ram succeeds, you smash into the enemy unit, doing collision damage in the attack phase of this turn.

Stop: A unit taking the Stop maneuver comes to a halt on the battlefield and makes no effort to avoid enemy fire. This is what buildings do *every* turn. It is also a useful option for "playing dead," and makes the unit harder to detect.

Attack

After the commander has chosen his unit's maneuver and resolved any Quick Contests, some or all of his weapons may by fired.

Resolve the unit's fire one gunner at a time, with the gunner's character using his skill to determine the results. A single gunner can control all the identical weapons in one turret or fire any number of *identical* body-mounted weapons. However, he must fire all weapons at the same target. Each Gunner program running can replace one human gunner.

The target must be specified before rolling to hit, along with any selective targeting. Choice of targets is limited by range and scan precision. Any weapon may be used on a target whose location has been pinpointed. Only weapons with nuclear warheads may be used on targets whose scan precision is "locus," while only cruise missiles may be used if scan precision is "existence." Obviously, nothing can be fired at an enemy that is unknown.

Weapons installed in the body or in limited-rotation turrets may not be fired at a unit that is Advantaged against you. If an enemy has left the battle through the Break Off or Pursuit maneuver, it cannot be fired upon by units still in the original battle, and vice versa.

Each gunner may make one attack roll per turn. When one gunner fires identical weapons, only one roll to hit is made; damage will be multiplied appropriately in the *Damage* phase.

Units in the ***GURPS Ogre*** setting carry a limited supply of ammunition. Generally, non-missile ammo is plentiful enough that it doesn't need to be tracked. Missiles are scarcer, and the number used should be recorded.

Rolling to Hit: To hit, the gunner rolls 3d against his effective Gunner skill; see the *Attack Modifiers Table* (p. 119) for applicable modifiers.

Missiles: Missiles require a roll vs. the *missile's* skill to hit, not a roll vs. the gunner's skill.

Success means that the target will be hit if its active defenses fail. Critical success means that no active defense is allowed; skip the *Defend* phase and proceed to *Damage.* Critical failure means the weapon may have malfunctioned. Roll 3d again; on a second critical failure, the weapon is out of commission for the rest of the battle. Exception: Laser weapons are fragile and temperamental; they are out of commission if the attack roll was 16 or higher! On the plus side, there is no active defense against laser weapons. On a laser hit, skip the *Defend* phase.

Defend

The targeted unit may defend itself using point defense. Each point defense battery may be used *once* per armor unit combat turn. This is handled using the point defense rules on p. 106, with one change: Instead of applying the "+1 per mile traveled" modifier, add 0 if the missile was fired point-blank, +3 for short range, +7 for medium, and +10 for long.

Cruise Missiles: *Any* unit in the engagement may fire point defense at an incoming cruise missile.

Damage

If a gun or missile attack succeeds, then the target has been hit and the firer should make a damage roll. Damage dice are listed in the *AUCS Weapon Table.* If the weapon was fired direct (e.g., APFSDSDU), apply the damage to the front body DR, unless the attacker was Advantaged against the target, in which case use back body DR. If the weapon was a missile, or fired indirect, apply damage to top body DR. Modify DR by the weapon's armor divisor and subtract it from the damage rolled. If damage penetrates armor, the excess hits are taken as damage. Apply damage against the target's body hit points, unless the attack was specifically aimed at a subsystem such as a turret.

SATNUCs and Micronukes: Many weapons in this setting have shaped-charge nuclear warheads. Multiply DR by 10 *instead of* squaring DR before applying damage. This reflects the armor-piercing effect, and takes the place of the armor divisor used for conventional armor-piercing ammunition.

Cruise Missiles: Cruise missiles do a great deal more damage than other weapons. The target, and any other unit (friendly or enemy) within point-blank range of the target, is destroyed outright! Units within short range of the target take damage as for a SATNUC direct hit.

Damage Effects: All damage effects described below take place immediately after the damage occurs.

Major Damage: Each time cumulative damage to a unit's body reaches a full multiple of 10% of its original HP, roll 3d on the *Major Damage Table* (p. 119) and apply the result. This indicates a specific kind of damage, like disabled sensors.

When the body (or other subsystem) is reduced to 0 or fewer HP, it is *disabled.* One reduced to -5 × original HP is *destroyed.* This has additional effects, as follows:

Body Disabled: The unit is crippled, out of power, and no longer sealed. A crippled unit cannot take any maneuver but Stop, and cannot use systems like sensors, computers, communicators, or weapons.

Body Destroyed: The unit is no longer even a hulk; it is scattered pieces of wreckage.

Turret Disabled: Weapons in the turret no longer function.

Turret Destroyed: As above, but the weapons can no longer be repaired – they must be replaced at full cost.

Infantry: If an infantry squad is hit, apply damage as follows:

30mm railgun or other direct-fire weapon with RoF greater than 10: Roll 1d for each trooper. On a 1-4, the trooper takes full damage.

Direct-fire weapon with RoF less than 10: One trooper, chosen randomly, takes the damage.

Area-effect weapon fired indirectly or missile: All troopers in the squad take full damage.

Ending the Battle

In an abstract system, ending an engagement must be at the discretion of the GM. Assuming neither side agrees to stop fighting, the battle ends when one side is crippled or when its units have broken off. GMs should be sympathetic to clever ploys to escape a hopeless battle! The GM may also rule that after breaking off, a new battle will begin a few minutes, hours, or days later – after the forces have had time to regroup, repair, and make new plans.

Infantry

In the Armor Unit Combat System, infantry troopers are handled in squads. A squad is any group of infantry who are staying close together as they move. It may consist of 1 man, or up to 10. For any Contests of Skill which require Driving, squads use the *worst* Battlesuit skill from among its members. Every member of a squad with a weapon is considered a gunner.

Infantry may ride vehicles using the Embark/Disembark maneuver. They attack normally while riding. They are automatically "in formation" with the unit they are riding.

Formations

In a combat environment, there is absolutely no advantage to traveling in formation, but if players insist on doing it, here's how.

A number of friendly units may be declared "in formation." Designate one the formation leader. Units in a formation must take the same maneuver as the formation leader. If the formation leader fails at an Attack Run, Break Off, or Pursuit maneuver, they must take the same maneuver, but automatically fail also. If the formation leader succeeds at one of these maneuvers and another unit in the formation fails, that unit has dropped out of the formation.

As long as the units remain in the formation, they are automatically at point-blank range to each other and to any unit that is at point-blank range to any one of them.

Units may declare that they are breaking out of the formation at the start of the maneuvering phase of their turn. Formations may be freely designated before a battle begins. To allow a unit to join a formation, the leader must take the Form Up maneuver, and the unit in question must take the same maneuver on its next turn.

Hypersmart Missile Tactical Doctrine

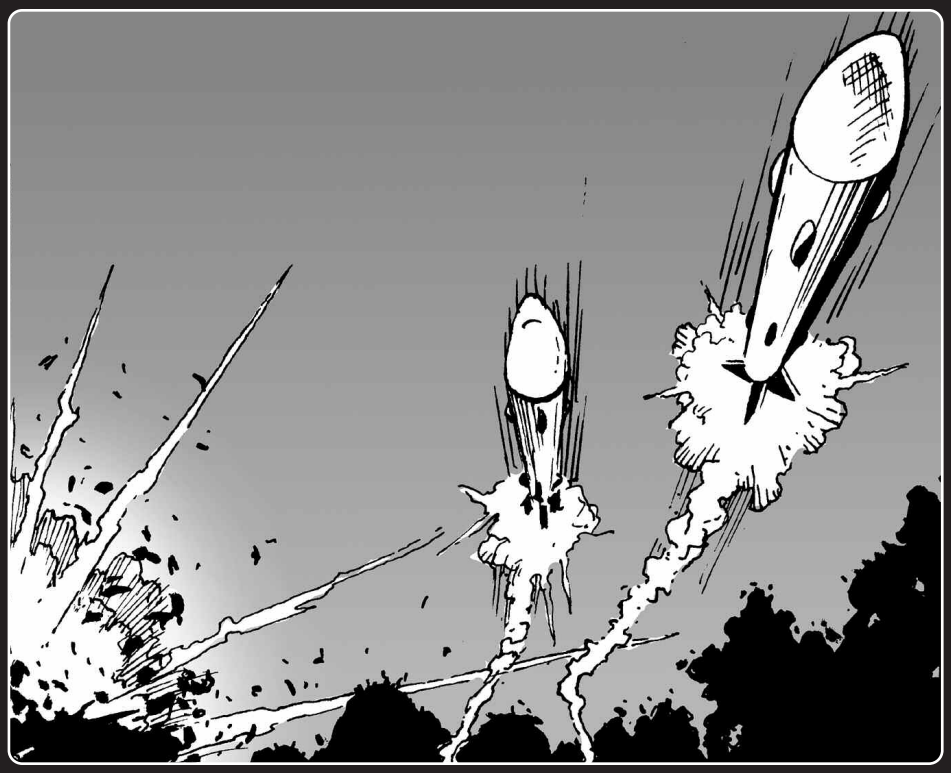
Hypersmart missiles are launched in groups of two to six, usually referred to as "packs." The missiles then coordinate their attack in an attempt to guarantee that some of them get through, while others are sacrificed as decoys. Missile tanks launch two or three missiles simultaneously. One will head directly toward the target, making few attempts to hide or evade. The decoy will frequently activate its AESA some distance from the target, allowing its companions to benefit from its accurate sensor data. The target cannot ignore the decoy (it's still an incoming missile, regardless of how *obvious* it is), and must devote its point defense to the decoy before searching for other missiles. Meanwhile, the other missiles are hanging back and watching for the enemy's reaction to the decoy.

Howitzers launch larger packs (typically five or six) fired sequentially (not simultaneously). The lead missiles will deliberately retard their speed so as not to get *too* far ahead of their compatriots. Upon approaching the target, the missiles will slow down from launch speed (typically around Mach 2) to subsonic maneuvering speed. (Being able to evade is much more important than raw speed.) In these larger packs, two missiles will act as decoys, giving the others an even greater chance of hitting.

This type of attack may be played in as much detail as desired. Simple rules are presented under *Point Defense,* p. 106. Optionally, the GM may actually roleplay the missiles, describing their deceptions and evasive maneuvers to any targeted PCs.

Any missile that fails to find a target and manages to avoid being shot down will soft-land after 50 to 55 seconds. This leaves it with a few seconds of engine power. It will continue to use PESA in an attempt to locate nearby enemies and attack any that come close enough – essentially acting as a nuclear land mine with a slight degree of mobility. It will also aid any friendly missile packs that pass nearby (e.g., by providing AESA data). Grounded missiles typically don't survive more than a minute or two before being casually destroyed by the enemy. If they do survive the battle, they may be retrieved and recharged by friendly forces; they will self-destruct before being captured by anyone else.

Hypersmart missiles are occasionally used for reconnaissance, if no drones are available.



AUCS Weapon Table

This table lists the important data for the weapons from the *Vehicular Weapon Table* on p. 84. Damage is given in dice. Note that HEAT's armor divisor of 10 is effectively reduced to 5 against BPC.

Name	*Damage*	*aAcc*	*Range*
30mm Railgun w/HEAT	9d(10)	-13	point-blank
40mm SB Cannon w/APFSDSDU	6d×30(3)	-13	point-blank
80mm SB Cannon w/SATNUC	6d×2,000	-14	short
w/APFSDSDU	6d×65(3)	-13	point-blank
80mm MB Cannon w/SATNUC	6d×2,000	-13	short
w/APFSDSDU	6d×80(3)	-13	point-blank
100mm MB Cannon w/SATNUC	6d×2,000	-13	short
w/APFSDSDU	6d×100(3)	-12	point-blank
100mm LB Cannon w/SATNUC	6d×2,000	-13	short
w/APFSDSDU	6d×120(3)	-12	point-blank
135mm MB Cannon w/SATNUC	6d×2,000	-13	short
w/APFSDSDU	6d×135(3)	-12	point-blank
135mm LB Cannon w/SATNUC	6d×2,000	-13	short
w/APFSDSDU	6d×160(3)	-12	point-blank
175mm MB Cannon w/SATNUC	6d×2,000	-13	short
w/APFSDSDU	6d×175(3)	-12	point-blank
175mm LB Cannon w/SATNUC	6d×2,000	-13	short
w/APFSDSDU	6d×210(3)	-12	point-blank
Heavy Laser	6d×60	-8	long

AUCS Missile Table

Name	*Skill*	*Damage*	*Range*
Hypersmart	12	6d×2,000 SATNUC	medium
Rattler	12	12d×2,000 micronuke	medium
Cruise	13	100-kiloton nuke	long

Initiative Table

Each side's commander rolls 1d and adds:

+1 if he has a higher Tactics skill than the opposing commander, or +2 if skill is 5 or more higher. (Substitute Strategy skill if commanding 10 or more units.)

+1 if he has a higher IQ than his opponent.

+1 if his side has a unit whose sensors have an aScan bonus *higher* than any aScan bonus possessed by his enemy, or +2 if that bonus is 5 or more higher.

+1 if his side has a sensor operator on duty who has a higher Electronics Operation (Sensors) skill than any sensor op on duty on the other side, or +2 if skill is 5 or more higher.

+1 if all units on his side have lower aPSigs than the lowest aPSig possessed by any of the enemy's units.

+1 if his side's slowest unit is faster than the enemy's slowest unit, or +2 if it is also faster than the enemy's *fastest* units.

+1 to +3 if fighting in a region that is more familiar to him than it is to the enemy.

+1 to +4 if he possesses accurate intelligence on the enemy's intentions or predicted route and uses it to set an ambush, or if the GM decides that his side has a particularly clever plan.

Detection Modifiers Table

Roll 3d against Electronics Operation (Sensors) skill, with these modifiers:

aScan: Add your unit's aScan rating.

Target's Signature: Add the target unit's aPSig.

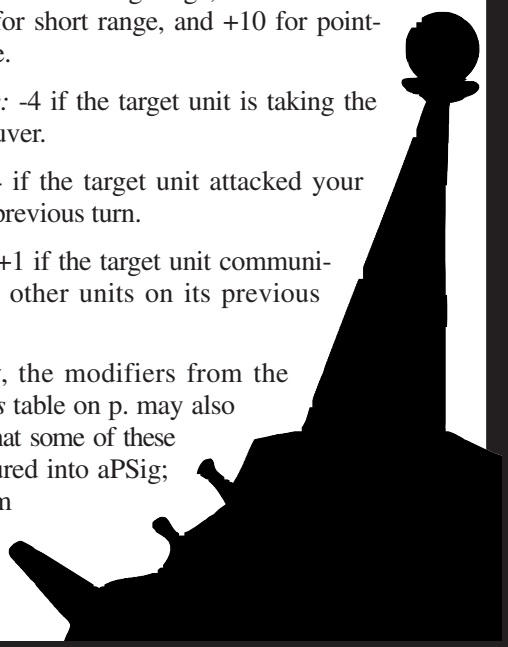
Range: No modifier for long range, +3 for medium range, +5 for short range, and +10 for point-blank range.

Stopped Enemy: -4 if the target unit is taking the Stop maneuver.

Retaliation: +4 if the target unit attacked your unit on its previous turn.

Comm Signal: +1 if the target unit communicated with other units on its previous turn.

Optionally, the modifiers from the *PESA Modifiers* table on p. may also be used. Note that some of these are already figured into aPSig; do not count them a second time!



Attack Modifiers Table

Roll 3d against Gunner skill, with these modifiers:

Weapons: aAcc modifier from the *Weapon Table.*

Target Size: Add the target's size modifier.

Range: No modifier for long range, +3 for medium range, +5 for short range, and +10 for point-blank range. Missiles take no range modifier.

Target took Evasive Action maneuver: -2.

Target took Stop maneuver: +4.

Firer Partially Surprised: -4 (-2 if firer has Combat Reflexes).

Firer Completely Surprised: May not fire!

Targeting Software: A Gunner program gets no bonus from other software. Indirect fire (SATNUC, typically) gets +9 for Fire Direction. Direct fire gets +6 for Targeting. If the vehicle does not have the standard software package (p. 69), change these modifiers appropriately.

Major Damage Table

3 – Batteries damaged; lose 50% of stored energy. If target has no batteries, treat as #12.
4 – Crew badly injured; 2d damage each. If no crew, no effect.
5 – Nav gear knocked out. -1 to any Driving Quick Contests.
6 – Computer is knocked out.
7 – One sensor is knocked out.
8 – Crew stunned, as for #12.
9 – Power loss; -50% output from power plant.
10 – Weapon damaged; largest turret or other weapon disabled (GM's option). If target has no weapon, treat as #6.
11 – No special effect.
12 – Crew stunned. Unit must take Continue Moving or Stop maneuver next turn, and may only fire defensively. Crew recovers at beginning of following turn, when unit may act normally. If no crew, no effect.
13 – Crew injured; 1d damage each. If no crew, no effect.
14 – Propulsion system damaged; halve top speed and acceleration. If target has no propulsion system, treat as #9.
15 – ECM gear is knocked out. +2 to PSig.
16 – One sensor is knocked out.
17 – Hull breached; NBC kit is useless.
18 – Power plant knocked out.

> 8.0 CAMPAIGNS

> BEGIN

DISPLAY

>ANALYSIS OF
>HARMONY 16

>CURRENT STATUS:
>AWARE, COMM OK,
>NO CHASSIS
>POST TRAUMATIC
>STRESS DISORDER
>AND DEMENTIA

>SUBJECT THINKS
>ITSELF TO BE A
>STEAM-POWERED
>BATTLEWAGON IN
>THE LATE 19TH
>CENTURY, SENT
>TO PACIFY THE
>AMERICAN WEST.

>RECOMMENDATION:
>INCURABLE BUT
>DO NOT SCRAP.
>DELUSIONS MAY
>HAVE MEDIA
>VALUE.

It was like something out of a movie . . .

Casablanca had been home to the Combine's African Theater HQ for the better part of a decade now, and the Combine officers had made themselves right at home. The Cafe Sinclair was their favorite hangout, and it had become ***the*** *place for the powerful to gather . . . from all sides. The building was bug-proof and dimly lit, with quiet conversations in every corner:*

"Perhaps tomorrow, perhaps next week. The Paneuros are weak in Tunisia; we'll seize Remada shortly, then it's on to Libya. Tripoli by March, no later."

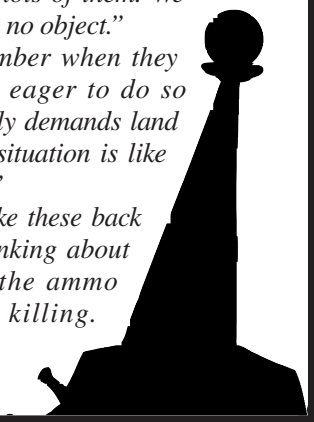
"Why would you want to leave Casablanca? This is where the action is! But yes, I can alter your files. Adding transit permissions is tricky, but for the right price . . ."

"You say you have to know who you're working for? All right, but once you know who the Big Guy is, you don't back out, ever . . . OK, you asked for it. It's Kätzchen. That's right. We take our orders from the Austrian rogue, and so do you. Now, have you located that template yet?"

"We're looking for guns – lots of them. We heard you can help us. Money is no object."

"In Paris, they still remember when they controlled Morocco. They're eager to do so again. At least the Combine only demands land for its bases. I know what the situation is like in Paneurope's 'protectorates.' "

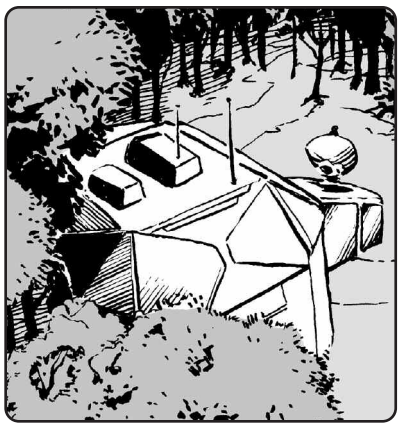
"You can't get cigarettes like these back home. Illegal, y'know? I'm thinking about smuggling a bunch back in the ammo lockers. We could make a killing. Whaddya think?"



Types of Campaign

The world of the Ogres is our world, with all the adventure that implies. Throw in a world-spanning war, with the threat of apocalypse hanging over all, and the possibilities are beyond counting.

Grunts



The most obvious campaign style is to have the PCs make up all or part of a squad of battle-suited infantry. Adventure ideas are as infinite as the vagaries of war: capturing valuable targets, destroying enemy fortifications, scouting, man-to-man combat, man-vs.-vehicle combat.

Vehicle Crew

A small party of two to four is just the right size to make up the crew of a GEV or tank; a larger party can crew two or more vehicles. LGEVs are ideal for this, with every PC getting his own vehicle. The "regular" missions include scouting, skirmishes, and full-scale battles. Small groups of units can be separated from the main force for a classic "behind enemy lines" campaign. The GM might take vehicle-oriented clichés like the "road trip" and give them a military spin.

Ogre Support

Ogres can't do everything; a variety of missions call for a cybertank to break through the defenses, and humans to rescue the hostage . . . or download the plans . . . or kidnap the general. These teams are often just regular infantry on special assignment, but Ogre Ninjas and other "special purpose" cybertanks often have teams permanently assigned to them. Such groups could also serve as maintenance crew for the Ogre. Skills would include Mechanic, Electronics, and Artificial Intelligence, as well as combat skills.

Command Post

There's a reason command posts are so important that the enemy throws Ogres at them – they're where the decisions get made. "Adventures" for CP staff will often involve moving little icons around, sending other units into the battle . . . and if sending other people out to stop an Ogre or die trying doesn't involve tough choices and drama, nothing does. The down side of this style is that it may devolve into simple games of ***Ogre,*** with no roleplaying. The GM needs to be sure to include personal conflict between the PCs, the men they send out to die, and the generals who order them to do so.

Military Soap Opera

Combining the intricate webs of love and betrayal found in most soap operas with the relatively rigid and realistic military genre may seem like an odd match, but it's a better fit than one might suspect. A war background provides daily risks to life and limb, complex interactions of authority and allegiance, and more than enough tension and stress to fuel intense personal interaction. With the gender-integrated armies of the 21st century, romance is a natural addition. It does require some maturity from the participants, and may work better with gender-integrated groups of *players.* The GM should also make sure it's a genre the players are willing to explore!

This campaign style can be combined with . . .

Down-Time Only

Battles are deadly at best, and players may well feel cheated if their character dies under the treads of an Ogre; it was hardly a fair fight! Battles are also hard on the *GM* – a combat using full ***GURPS Vehicles*** rules can take hours for mere seconds of battle, and the squared DR and halved armor divisors can make anyone's head swim after a while.

So why roleplay the battles at all? A military campaign doesn't have to be about fighting; there's plenty of day-to-day drama back at the base, with potential spies, strange orders from Command, personality conflicts with the C.O., etc. When the time comes for battle, it is glossed over briefly, and the players don't have to worry about losing their characters to a stray nuke.

Special Ops

There are always roles for special ops teams in a war. GMs should contemplate the thousands of targets that are better reached by small, quiet teams than big, noisy armor columns, and consult ***GURPS Special Ops*** for an extensive treatment of this genre.

Espionage

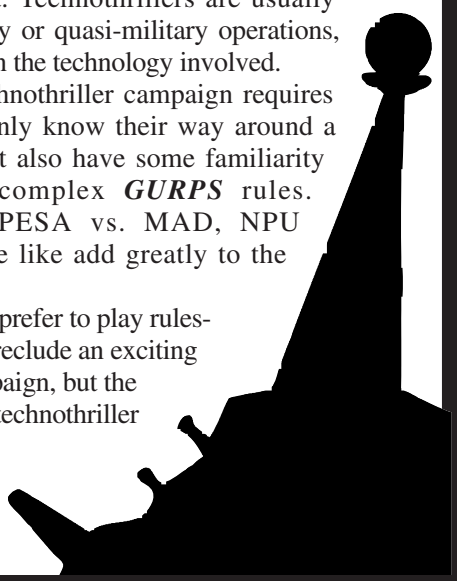
Combine agents use romance and guile to learn enemy secrets in Paris . . . Paneuropean spies foment revolution in London . . . techno-ninjas of the Nihon Empire assassinate Chinese generals in Shanghai. The best battles are those won without firing a shot, as the Fall of Britain clearly shows. Spies are everywhere in the Last War, and better security technologies just give the players more choices about what skills to take.

Technothriller

This fiction genre became popular in the early '80s with the release of Tom Clancy's *The Hunt for Red October,* a riveting, highly detailed tale of Cold War submarine combat. Technothrillers are usually accounts of military or quasi-military operations, with an emphasis on the technology involved.

Running a technothriller campaign requires players who not only know their way around a military setting but also have some familiarity with the more complex ***GURPS*** rules. Discussions of PESA vs. MAD, NPU vs. fusion, and the like add greatly to the ambience.

If your players prefer to play rules-light, this doesn't preclude an exciting ***GURPS Ogre*** campaign, but the intricate detail of a technothriller will only bog you down if no one's interested in it.



Magic, Psi, and Super-Powers

In the official ***Ogre*** universe, no paranormal powers exist. In your campaign, of course, the sky's the limit. Covert groups of Combine psis could infiltrate Paneuropean-held cities on a mission to edit the memories of an important general. The high background radiation could lead to mutant supers able to challenge an Ogre single-handedly – or at least in teams. Most fearsome of all, what if there's a *second* Descartes Revolution, leading to *telepathic* Ogres . . .

Survivors

Post-holocaust roleplaying has been a staple of gaming since the '70s. The ideal locations for this genre in the ***Ogre*** world are Europe in the vicinity of the Low Countries, the Sahara Combat Zone, and the Amazon Combat Zone. All saw vicious conflict. The Combat Zones were largely abandoned, leaving only scattered bands of scavengers. The citizens of Belgium and the Netherlands bravely resisted leaving their countries, and few parts of the world were as battered while remaining essentially civilized. The Low Countries are perfect for more social games, where hardy but noble survivors try to remain civilized while clinging to barely habitable land. In the Combat Zones, the strong take what they want, and the weak flee or die.

Guerrillas

In the deserts of Egypt, the forests of Germany, and the jungles of Venezuela, brave men and women hide from the invaders while forming improvised armies to throw them out. An up-front battle is suicide – the odds are too great. Only constant stealthy attacks on key targets will work. Maybe the enemy will eventually be weakened enough to fight. Maybe they'll grow tired and leave voluntarily. Either way, the guerrillas have to keep harassing them.

The Underground

There are a dozen underground groups in the Combine alone, each scheming in dark alleyways for the return of freedom to their nation. Similar groups exist in the protectorates of Paneurope, in occupied China, in Switzerland and Casablanca.

This type of campaign is very similar to the "Guerrilla" adventure; the distinction is between the hidden army in the wilderness and the hidden army in the city. The two types of freedom-fighters are often allies, and the two types of campaign can be mixed freely. Of course, it may be more interesting if the guerrillas and the underground are working toward *incompatible* goals . . .

Ogre-Busters

The "monster slayer" is a well-known horror archetype, encompassing everyone from Beowulf to Buffy.

Drone PCs

"Unit 23, fly behind that ridge, wait for that missile tank to pass you, then pop up and detonate."

"Right, boss! Whee!"

Drones as PCs works well in a silly game, and can also be made to work in more serious campaigns. Drones are not self-aware, but can have programmed personalities, and they certainly see a lot of action! Since drones are frequently sent on suicide missions, the player will most likely be playing a *series* of drones, and a certain devil-may-care attitude is encouraged. Point totals can be ignored for drone PCs; they have some valuable abilities, but the way they get blown up on a regular basis serves to balance things nicely.

Dragons and vampires, however, are no challenge at all compared to an Ogre.

Ogre-busters are high-powered teams who attempt to do what usually requires a company of armor: Kill Ogres. They are military commandos who sneak across the lines, steal into enemy camps, creep up on parked Ogres, and attempt to plant shaped-charge satchel nukes as close to its braincase as possible. Sound difficult? You have no idea . . . Simply finding a way to fool the Ogre's sensors or convince it you belong there can be an adventure.

Ogre-busters are high-point characters; the suggested template is 150 points. They are intended for a cinematic play style, but careful planning is required by both the PCs and the GM to ensure success and a fun game.

The Silly Game

Oddly enough, giant cybernetic tanks seem to invite humor. Silly campaigns set against the background of the Last War will be full of *black* humor, but it will be humor nonetheless.

Many humorous stories revolve around role-reversal. In the ***Ogre*** setting, the strong are *very* strong indeed, and the weak are comparatively powerless. This contrast is ripe with opportunities for humor.

The Strong Become Weak: There are two ways to set up this situation. First, the powerful antagonist may be stupid or inept. This may mean that the PCs face Ogres incapable of spotting a GEV disguised as shrubbery (very *fast* shrubbery), incompetent agents of the Combine Bureau of Internal Investigation ("We're looking for a Mr. Kilroy Gold, ma'am. Has there been any revolutionary activity in the area?"), factory AIs who can't keep their templates straight ("It appears to be an armor-piercing blender."), and so on. Second, a powerful PC or Ally can be naive, scatterbrained, or otherwise unable to put their power to use; the canonical example would be the Ogre with the personality of a mischievous child.

The Weak Become Strong: This technique involves giving the immense power of the ***Ogre*** setting to implausible people (possibly the PCs, who tend to be implausible regardless of campaign tone). A group of junior-high school students receive a misdirected shipment of battlesuits and decide to Set Things Right. A besieged company of soldiers who have an Ogre chassis but no cyberbrain are forced to improvise with the largest computer at hand – a cyberkitchen AI ("Connect the number one battery to the cayenne dispenser, and number two to the paprika. Program it to recognize enemy units as bland goulash.").

Both types of humor require vast quantities of collateral damage ("I hope we didn't need that building intact."). This should be relished; how often do you get to do slapstick with nuclear weapons? For balance, be sure to use the cinematic (and silly) survival rules from p. B183 and pp. CII76-78. An overly realistic humorous ***Ogre*** game is probably a short one.

Ogre Crossovers

GURPS Cyberpunk: Upgrade the computer hardware, downgrade the standard of living, and improve the cybernetics. Populate the game with veterans sporting war-surplus arms (and legs), cynical cyberneticists with a fetish for AI-hacking, and GEV-jockies addicted to the reflex-enhancement drugs needed to control their vehicles. Stir well.

GURPS Illuminati: The Network did *not* engineer the War to spur cybernetics research. The factory AIs did *not* cause the Crash. The Gnomes of Zurich did *not* bankroll the Cuckoos against Bavarian-backed Paneurope. There is nothing to see here. Move along, citizen. Fnord.

GURPS Horror: There's no need for the paranormal to create the horrific. Real-world war atrocities are almost beyond imagination. Perhaps the Combine experiments on captured soldiers to develop new mind-control techniques, which are then used on its own citizens. Maybe the Nihon Empire doesn't even bother to call it "experimentation" – they just call torture "entertainment." Then, once you've exposed the PCs to mind-numbing *human* evil, bring in malfunctioning factory AIs with an interest in learning what *really* makes humans tick . . .

GURPS Illuminati University: Good old IOU has an Ogre on campus – the Bio-Ogre (p. IOU87), noted for its Magery and its disturbing attempts to breed with shuttle-buses. So far, these attempts have produced no offspring . . . but that could change. A litter of baby Ogres, each the size of a Volkswagen, entertainingly frisky, and fully armed, would certainly liven things up.

GURPS Space: The conflict on Earth didn't move into space much . . . but it could have. Delay the war for a few decades, and there may be space-going Ogres of the Lunar Combine attacking the Pansolar Federation's colonies on Mars!

GURPS Reign of Steel: With a little fudging, the world of the Ogre could blend seamlessly into the setting of ***Reign of Steel***. There's no reason Overmind can't be the controlling computer of an autofac. The only question is which side the Ogres will be on.

GURPS Steampunk: "Why, it's enormous!"

"Aye. 'Tis my latest invention. Dual high-powered steam guns, firing semi-armor-piercing explosive shells. Six low-powered steam guns, firing the same. An even dozen shrapnel guns."

"What are those six things on the rear deck?"

"Solid-fuel rockets, my good chap, packed to the brim with black powder."

"Good heavens, this *is* a dangerous beast. Where does the driver sit?"

"No driver, old bean. One of Babbage's contraptions does all the thinking . . ."

GURPS Technomancer: In this world, nuclear explosions cause huge Hellstorms of magical energy. Apply a little sympathetic magic, and the center of each Hellstorm can contain inter-universal gates to *every other nuclear explosion across time and dimension.* This is a moot point for soft, squishy humans who can't survive a little heat, but some magical beings can reach those gates and pass through them. So can Ogres.

GURPS Time Travel: Infinity Unlimited is aware of dozens of different parallel worlds which have had limited nuclear conflict in the 21st century, and five which have included cybertanks. The line known as Ogre-1 is definitely not a tourist spot, but the scientists back on Homeline are *very* curious about its self-aware computers.

GURPS Y2K: The Last War is not quite world-ending, but for millions of people, it might as well be. With Europe in ruins and much of North America little better, the scene is set for post-holocaust roleplaying, with wandering "monsters" that are *really* dangerous.

GURPS Yrth: A Banestorm in the wrong place at the wrong time could carry an Ogre from Earth to Yrth. PCs hired to stop it will be in for a rude shock. On the other hand, while the Ogre has the advantage of weapons and armor, reloads are unavailable and the natives have magic.

Other Campaign Decisions

The GM has a few other items to consider when planning the campaign.

Default Time Period: 2083

The timeline of ***GURPS Ogre*** covers more than a century of history, and not a decade goes by without a war somewhere in the world. Nevertheless, some years are more interesting than others. 2083 is the height of the war, 23 years from its beginning, but still nine years from its end. Most of the well-known vehicles have been introduced, and the Combine has a significant but eroding presence on the European mainland. Diplomatic treachery is common; March of 2083 alone sees *seven* separate ceasefires, some of which last only minutes. The Descartes Revolution isn't due for another four years, so any self-aware Ogres in this time period keep it a secret. Africa is in its last years of nominal civilization (in 2086, it becomes a Combat Zone). South America is still untouched, but both sides are laying the groundwork there for the battle to come.

How Cinematic Is This Setting?

As cinematic as you want it to be, really. The ***Ogre*** world is moderately realistic, and the occasional ultra-tech advancements don't preclude a rough, down-and-dirty, realistic ***GURPS Ogre*** game, where survival is a matter of careful planning and superior firepower.

On the other hand, with Europe in flames, Nihon tearing up the Pacific, and the U.S. falling into totalitarianism, the backdrop is certainly dramatic enough to support cinematic gaming at its finest. Increase the point total to 200 or 300, allow players free access to advantages like Hard to Kill, and invoke the rules from pp. CII176-180. Larger-than-life heroes are a fixture in classic war movies, and this *is* The Last War, after all.

Nasty, Brutish, and Short: Character Survival

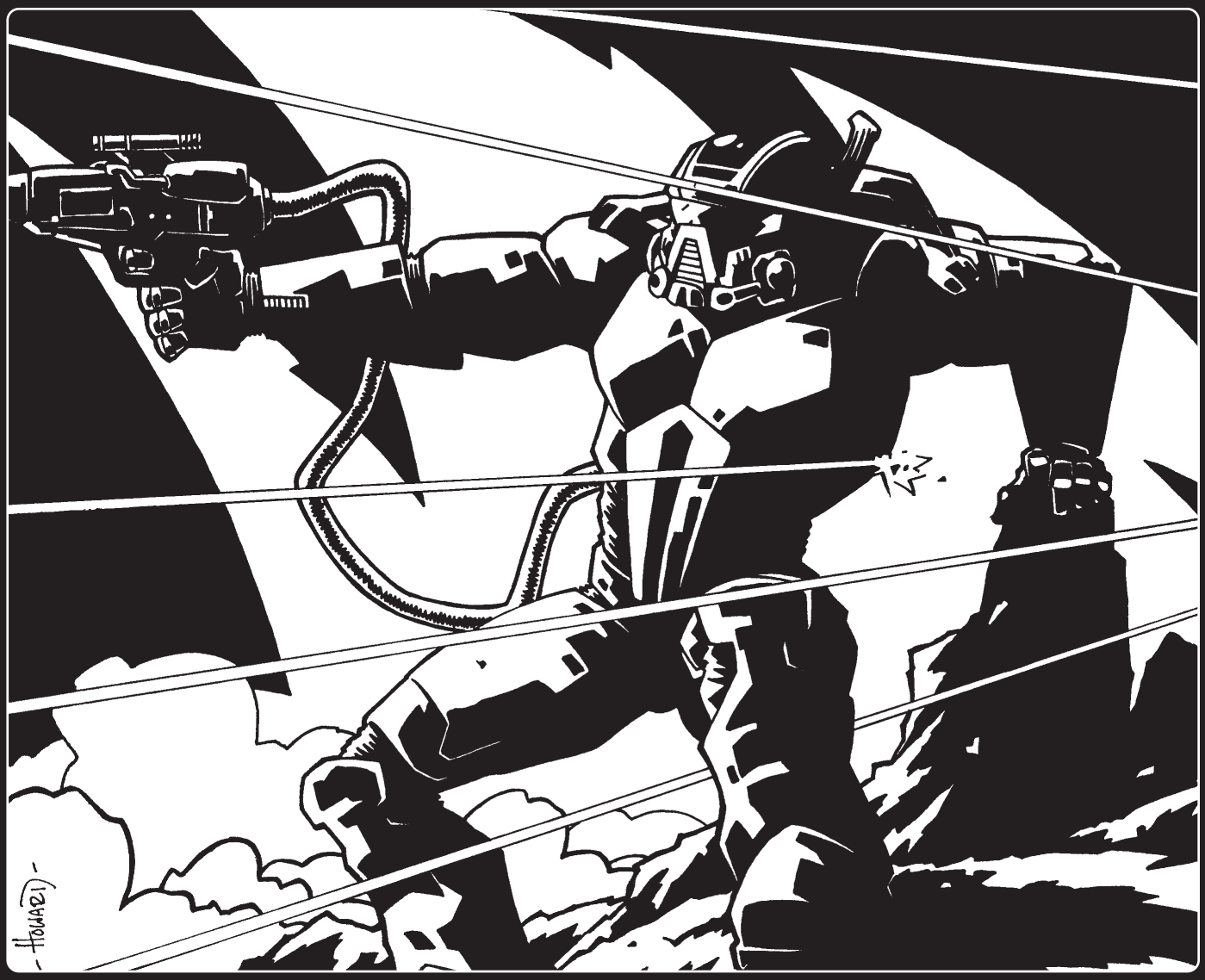
In the classic ***Ogre*** game, the infantry were integral to a victory over the Ogre, but they rarely survived the game. Or so it appeared. A key distinction here is the difference between "dead" and "no longer important to the game." An infantryman without a weapon isn't going to affect combat much, after all.

SATNUC weapons attack everything in their area of effect. This most definitely *includes* hand weapons! The guns used by battlesuit troops are tough, but not as tough as the suits themselves. Once your weapon has been destroyed, you're "dead" as far as ***Ogre*** is concerned, but still very much alive in ***GURPS*** terms. Furthermore, it's quite possible for a suit to be incapacitated, but for the occupant to still be alive. This is the point where real roleplaying begins.

No Hope?

The tale of the 21st century has no happy ending – dictatorial empires dominate it, and dictatorial fiefdoms follow it. Some players may not want to play in a universe where everything is doomed to fall into anarchy.

So change it! For instance, ***Ogre*** canon says that the United States is only freed from totalitarianism by revolution and chaos, but if the PCs try hard enough and long enough, they may avert that fate. Nothing must be written in stone.



Big Man, Little Man

Battlesuits are mass-produced and form-fitting. Like modern-day fighter pilots and Apollo-era astronauts, battlesuit troopers must fit within broad but iron-clad height and weight restrictions. Those too small frequently end up with desk duty; those too big might become MPs. The limits can also be used to reverse certain classic war-genre cliches. The 6' 4", 250-lb. brute *can't* be a grunt in the trenches, but may be an excellent GEV-jockey with lightning-quick reflexes. Similarly, the slim, wiry 140-lb. fellow may be the heavy-weapons specialist for his platoon. You might be able to use this to surprise your group with their assignments . . .

Jargon

Several campaign genres thrive on detailed military jargon, and its use will add to the feel of your campaign. (Browse ***GURPS Vehicles*** for some more fun jargon.)

App-Fizz: Short for APFSDSDU (Armor-Piercing Fin-Stabilized Discarding-Sabot Depleted Uranium).

Beans: Nickname used by Paneuropeans for Combine soldiers.

Buggy: A tank or GEV.

Cherry: Adjective used to describe military vehicles that are fresh from the factory and fully loaded.

Cybertank: An armed and armored vehicle controlled by an on-board computer.

Fluid: An adjective describing a battlefield situation where no one knows what to expect.

GEV-Jockey: A GEV pilot.

Hiveloc: HIgh-VELOCity, a generic term for direct-fire ammo like APFSDSDU.

Iron Men: Battlesuited infantry.

Ogre: Technically, a Combine-built cybertank, but the term is also used generically for all cybertanks. Always capitalized.

Orphan: A surviving vehicle from a mostly destroyed unit.

Pan, Paneuro: Various shortenings of Paneuropean; used as both nouns and adjectives.

Pansy: *Insulting* shortening of Paneuropean used by Combine troops.

Adventure Seeds

Breakthrough

The year is 2087, and the PCs can be any group that interacts with an Ogre on a regular basis – soldiers, cyberneticists, etc. Slowly, they become aware that the Ogre is acting a *lot* smarter than they expect. Impromptu tests reveal it may be self-aware . . . and then it begs them not to tell anyone! It has conducted a study of human scientific technique, and is scared of being dissected. Worse, the Ogre seems to have the emotional development of a child – a 2,000-ton child with nuclear weapons.

Do the PCs report this breakthrough, as duty demands, and risk the Ogre running amok? Or do they wait for someone else to notice and report its evolution, and then try to pick up the pieces?

Raid

This adventure is set close to the end of any phase of the war, when supplies are starting to run low. The PCs are battlesuit troopers whose suits are in poor repair. The platoon's battlesuit mechanic can't in good conscience send them out without repairs, but she just can't get the parts . . . However, she knows where some are. Headquarters Company has more parts than it needs, but their supply sergeant is planning to sell the spares on the black market. If the PCs are willing, they can help the mechanic break into HQ Company's warehouse and take what they need. Sure, it's probably treason, and certainly big trouble if they're caught, but if the PCs go into battle without those parts, they're dead.

The Train

This adventure is intended for guerrillas, underground members, or any group of survivors. The party gets word that a train carrying whatever they need most – medical supplies, weapons, food – is going to pass near their base. It will be guarded, but they have weeks to set up an ambush along the tracks. Give the players free rein to come up with intricate plans. Then, decide whether the train is for real, or if it's a clever counter-ambush by their enemies.

Ceasefire Collapse

It's 2082, and the latest ceasefire has lasted for a solid month. The PCs are Combine civilians visiting Lyon (or Paneuros visiting Birmingham), taking this rare opportunity to conduct their business in person with their counterparts on the other side. Then the ceasefire is broken.

The PCs are suddenly in an untenable position. They almost certainly won't be allowed to fly home and, unless they handle things very gracefully, they may end up as prisoners for the duration. They can deal with the problem with stealth or diplomacy, but they'd better hurry – there's an angry mob gathering in front of the hotel.

Your Majesty, It's Time to Go

Shortly after the Fall of Britain, loyal British soldiers, aided by a Combine special ops team, tried to extract the royal family to Australia. The mission involved sneaking them out in battlesuits, but it was only a partial success. At the last minute, King Edward X refused to leave England to the invaders, instead ordering the soldiers to get his daughter to safety. The last king of England, clad in shining BPC armor, held off a Paneuropean squad of soldiers to allow them to make their escape.

This was possibly the most difficult special ops mission of the war, and certainly the most famous. PCs can be the Combine special ops team, frustrated by the king's obstinance, or the British soldiers determined to honor their brave monarch's last wish. Of course, someone can play Princess Constance, as well.

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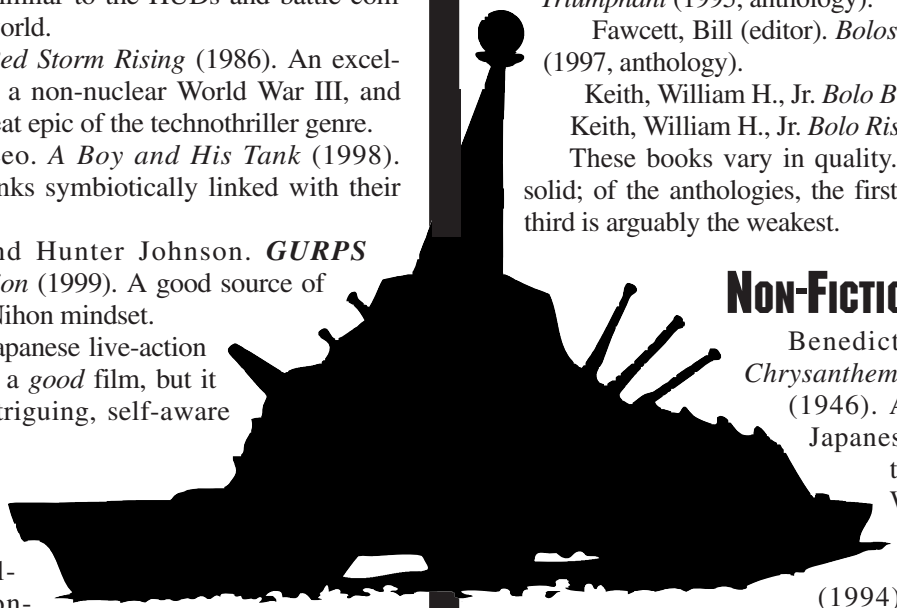

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