

STARFLEET MARINE CORPS



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COMBAT ENGINEERS BRANCH MANUAL

Revision 2006

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STARFLEET MARINE CORPS

Combat Engineer's Manual

2005 Edition



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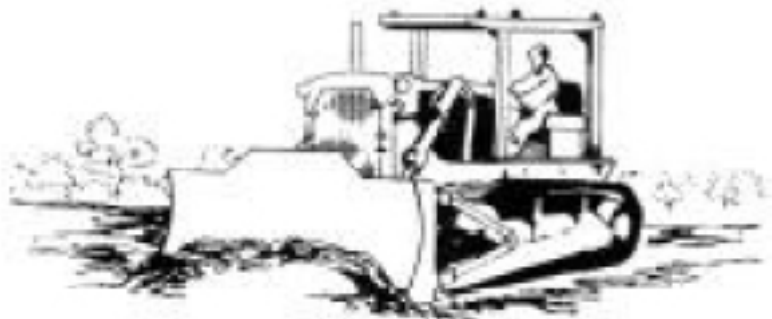
Published October 2005

Welcome Aboard!

Welcome to the third edition of the Branch Guidebook for Combat Engineers. This publication is intended primarily for members of the STARFLEET Marine Corps (SFMC), which is a component of STARFLEET, the International Star Trek Fan Association, Inc. (SFI).

This manual was created for members of the STARFLEET Marine Corps, and anyone else with an interest in the 24th century Combat Engineer branch concept, as it is applied within the STARFLEET Marine Corps. It is intended to serve as a handy reference work for members of the Combat Engineer branch. It covers the basic history and traditions of the branch, unit organization, uniform variants, and explains most of the Combat Engineer duties in and out of combat. In short, it is a one book source of information for whatever a new Combat Engineer may need to know to role play a member of the Combat Engineer branch.

The majority of this work is obviously fictional in nature, but the references to uniforms and insignia of the STARFLEET Marine Corps are accurate. It is intended to provide a source of "background material" for members of the SFMC Combat Engineer branch, and/or anyone interested in the concept of Combat Engineers in the 24th century. It is not intended to be the last word on the subject, however, as the branch material is constantly being revised, upgraded and updated by the members of the branch themselves. Further publications concerning the Combat Engineers and their special training will be forthcoming as the information base is expanded and improved. This book will give you a solid understanding of the core concepts related to this branch of duty, and form the foundation for further learning and study in the field.



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Pronoun Disclaimer

The use of "he, his, him," etc., and in particular the term "man" as in "crewman", are used for convenience as the standard English-language convention for unknown-gender pronouns. Not very politically correct, perhaps, but grammatical... and a lot less awkward than "crewpersons". The point is, we don't mean anything by it.

Acknowledgments

This manual is the third edition in Combat Engineer history. Grateful acknowledgement is given to the following individuals and information sources for assistance rendered in the 2005 revision of this manual: Chris Esquibel, Sean Niemeyer, John Roberts, Jill Rayburn, & the original authors of this manual.

Reporting Authority

The governing authority for training information is the Commanding Officer, Training and Doctrine Command (COTRACOM). Send questions, comments, or suggestions to:

Tracom@sfi-sfmc.org

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Ancient Engineers

A SHORT HISTORY OF COMBAT ENGINEERS

Combat Engineers of the STARFLEET Marine Corps can trace their history back to the beginnings of civilization, when the first organized military units were created. In fact, this makes them even older than the concept of Marines themselves and establishes a proud tradition of service, skill and courage. While a complete description of the development of Combat Engineers is beyond the scope of this handbook, we have provided a summary of the more important stages in history.

THE AGE OF BRONZE: THE GREEK CITY-STATES

Our story begins back in Earth's ancient history, when the Greek city-states of Athens and Sparta were major powers in the Mediterranean Sea. Constant low-level conflict between the various kingdoms led to the formation of standing armies. The city-state of Sparta was among the most organized, training it's entire male population in the basics of warfare by promoting sporting events that had a military theme or use. Men with skills in masonry and carpentry were separated from the rest of the army and tasked with building catapults and other siege engines, as well as operating them during combat. Until the development of formal navies, ships and barges were built and manned by soldiers from the army; these ships were often built and manned by the same men who built the siege engines.

THE AGE OF IRON: THE ROMAN EMPIRE

The Romans were the first civilization to recognize the need for different and specialized branches of duty within it's armed forces. Cavalry, Infantry, and Engineers were all treated as separate types of units; all soldiers received basic military training and any that showed aptitude for a specific type of unit were assigned to that unit. Further training in those roles led to highly effective and specialized military units. In times of war, the Roman army earned a reputation as the world's finest fighting organization; the Legions were masters of precision marching and close order hand to hand combat, the Cavalry units were composed of excellent horsemen of other nationalities that had allied themselves to the Roman empire, the Engineers were past masters in the construction and use of siege engines and military fortifications. In times of peace, the Roman army trained for war; Legions would practice marching and close combat drills; Cavalry would practice mounted maneuvers and charges; Roman engineers built military fortifications, roads, and civic improvements like irrigation and sanitation systems, amphitheaters, temples and schools. The Roman era was a golden age for Engineers.

THE AGE OF STEEL: CASTLES AND CRUSADES

During the middle ages, castles became a common sight. As a symbol of military and economic power, a castle dominated the lands around it. If your intention was to conquer a territory, you had to deal with the castle that protected it. In the early years of castle building, few were more than fortified manor houses; these were relatively simple to destroy, given enough manpower and enthusiasm for combat. However, as the skills of the castle builders grew, so did the complexity and efficiency of castles. Thick stone walls and moats, carefully laid with defensive combat in mind, became nearly impregnable. One of the most impressive military fortresses in the world was Krak Des Chevaliers, located in modern day Syria (yes, it's still standing!) Laying siege to a castle came to mean surrounding it and cutting off the supply of food and water to the besieged; after that, it became a race to see who would starve first, the inhabitants of the castle or the hungry army that waited outside. As military science developed, more skills were added to the combat engineer's already impressive list of techniques. During the Crusades, valuable (and costly) lessons were learned at the hands of the Moslem castle builders and defenders. Sappers, as they were called, learned to tunnel (called mining) under enemy walls, bridge ditches and moats and pierce carefully built stone walls. Using sappers gave the attacker more options; a castle could be starved out, mined under, or breached directly. Of course, the defenders had their own sappers trying to prevent such activities; more than once they dug a tunnel (a Countermine) that broke into the attackers mine, and a desperate and bloody fight took place in the torch lit tunnels. If the defenders won, they killed the attacker's sappers and collapsed the mine before it could be used to breach a wall overhead. If the attackers won, they had a direct route through the countermine into the castle's interior.

THE AGE OF GUNPOWDER: EUROPE ABLAZE

With the invention of gunpowder, castles soon became obsolete, but the skills that engineers had developed to deal with them did not. French sappers were legendary at constructing earthworks and palisades, even in the face of enemy fire. The technology of rapid construction of bridges and boats began to take shape. The understanding of ballistics, as applied to cannon fire, led to a formalized approach towards other military skills. Engineers began to use a scientific method in planning operations, vastly improving their effectiveness and standardizing their equipment and training.

THE FIRST WORLD WAR

In the 20th Century, advances in weaponry were not always followed quickly by advances in defensive tactics. World War One saw the invention and employment of aircraft, explosive mines, poison gases, armored fighting vehicles (tanks), and machine-guns. Trench warfare, a relic from the earlier days of gunpowder combat, was ill suited to dealing with these new weapons.

Engineers learned to create anti-tank obstacles, airfields, bunkers for protection from artillery and to use gas masks. The loss of life was staggering, and the bloody lessons

learned on the battlefields of France would change the face of warfare forever. Military planners realized that different equipment almost always necessitated different tactics.

THE SECOND WORLD WAR

By the time World War Two began, the skills of the Combat Engineer (the newest term for Sapper) had risen to meet the standard of weapons technology and tactics. At the start of the war, the Germans had the most effective army in the world; their equipment, tactics, and doctrine were superior to anything the Allies had developed. The Germans introduced flame-throwers, rockets, airborne infantry and self propelled artillery. They revolutionized mine warfare, the use of submarines and armored vehicle doctrine. The Allied forces learned quickly, however, and by the end of the war had developed counters to everything the Germans had introduced. In some branches, especially the Combat Engineers, Allied technology and tactics were superior. Bridging techniques had become critical to success in combat; mine laying and mine detection, construction of bases and airfields, building or breaching obstacles to armored movement, and clearing of bunkers and other underground or congested areas became common skills of the Combat Engineer. Specialized vehicles and equipment helped make the Normandy invasion a success, breaching or bypassing the defenses created by the Germans. In the Pacific, the ability to repair damaged airfields and rapidly create new ones, allowed the Allies to advance from island to island towards victory over Japan.

KOREA

In the Korean War, American Combat Engineers learned to fight a new kind of enemy, nature herself. Korea was a land of steep mountains and narrow, rapid rivers. The road network in Korea was practically nonexistent; where there were roads, they were narrow and very winding. On top of this, the country had a monsoon season (extremely frequent and torrential rains) in July and August, and bitterly cold weather in the winter. Rain, mud, ice and snow combined to make bridging and roadwork a formidable task. Fresh water supplies were rare, and there was no established method of transporting fresh water to the troops.

Combat Engineers learned to work in the worst physical conditions. New techniques for bridging and fording were developed, as were methods of purifying and transporting water. The Demilitarized Zone (DMZ), with its fortifications and extensive minefields, honed their traditional Combat Engineer skills to a fine edge. Tunneling activity by the North Korean army meant relearning the ancient skills of mining and countermining, as well as the new skills needed to detect such tunnels.

VIETNAM

During the Vietnam War, Combat Engineers expanded the skills they had learned in Korea as they faced an enemy far more willing to use underground fortifications and tunnels. Booby traps and improvised mines were common, and the enemy preferred to

fight from ambush instead of more conventional direct actions. Mother Nature returned as an opponent, this time with extremes of heat, humidity, and precipitation. Mud, insects, and heavy rains again challenged the Combat Engineers; again they developed methods and equipment for dealing with these factors.

TURNING POINT: 21ST CENTURY COMBAT ENGINEERS

Near the end of the 20th century, the global political landscape had changed dramatically from the previous centuries. The Soviet Union and the United States of America were the two most powerful nations in the world. Each had a unique doctrine for it's Combat Engineers. Soviet forces trained with a degree of realism that was unmatched by any other army; the US used sophisticated electronic simulations which were effective training tools, but rarely risked lives during training. The difference in training techniques was born of the widely disparate economic situations in each country, but became a matter of pride for each. The US soldier knew his equipment and training was the best available in the world, and the Soviet soldier had personally tested his own equipment and tactics in a lethal environment. After the devastating Eugenics Wars, these two very different types of Combat Engineers would combine to form the nucleus of what would later become the STARFLEET Marine Corps' Combat Engineer Branch.

THE US ARMY CORPS OF ENGINEERS: MORE THAN MILITARY

The United States chose to expand the manpower of it's Combat Engineers by integrating civilians and military personnel into a larger organization known as the US Army Corps of Engineers. By adding specialists from the civilian field, more ambitious projects of a less combat oriented nature could be undertaken. These "peacetime projects" would allow the pool of skills and techniques to be broadened and improved, while maintaining a body of experienced reserves to draw from in the event of a war. This blend of civilian and military was not always a smoothly running organization, but it did emphasize the earthmoving and bridge building capabilities of Combat Engineers and their equipment, especially in less industrialized countries. Like the ancient Romans, the US Army Corps of Engineers trained for war by building in peace.

THE SOVIET COMBAT ENGINEERS: "THE GRAVEDIGGERS"

Before the collapse of the Soviet Union into many smaller ethnic territories, it had the largest body of military men in uniform on the face of the Earth. While Soviet military equipment lagged behind the US (technologically speaking) in many areas, they enjoyed a significant edge in the areas of Chemical/Biological/Radiological warfare and had achieved parity (at least) in the field of mine warfare. Soviet military doctrine depended on tactical and strategic use of chemical and biological agents; they believed that limited use of tactical nuclear weapons was also a probability in any kind of major war. Accordingly, they placed a great deal of emphasis on use of (and defense against) such weapons. Decontamination equipment and training was standard in every Army unit;

Combat Engineers had specialized equipment and extensive training in it's employment. During the 20th century, many small scale conflicts were in progress around the world. The Soviets had a military presence in nearly all of them and rotated their forces regularly. This gave their NCOs and officers some real world combat experience and weeded out the less effective troops and techniques. Infantrymen, tankers, combat engineers and aircraft pilots saw the most duty in these "brushfire wars". By the time the Third World War broke out, nearly 62% of these branches of the Soviet armed forces had practical (if limited) military experience.

THE COLONIAL MARINES

When the MegaCorporations began colonizing other planets, they needed trained fighters and builders to accompany their colonists. The Colonial Marines were formed, and Combat Engineers were once again needed. They went along in the giant "sleeper" ships and helped terraform the planet, right alongside the colonists themselves. If and when a threat to the colony developed, the Combat Engineers took up arms and fought to protect it. The Colonial Marines were tough, and their Combat Engineers were some of the toughest. The steady expansion of human colonies was testimony to that.

In 2156, the Romulans appeared over the colony world of Sectis. Orbital bombardment, followed by mass landings of Romulan troops, effectively exterminated the colony to a man. Among these colonists was a detachment of Colonial Marines, including some Combat Engineers as usual. Faced with overwhelming enemy force, the unit commander formulated a plan to warn Earth of the approaching invasion forces. With Combat Engineers leading the way, the Marines slipped through the colony sewer system until they were beneath a building that had been converted into an enemy command post.

Using explosives and tools, the Combat Engineers forced an entrance up through the floor. Despite the element of surprise, a savage firefight between Marines and the enemy developed. Working in the midst of the crossfire, the Combat Engineers blew their way through another wall and a door into the communications center. Charging past the bodies of the fallen Engineers, the remaining Marines secured the communications center and barricaded themselves inside. As the Romulans counterattacked, a Marine communications specialist rerouted the enemy equipment and transmitter, sending out a distress call along with a description of the enemy forces and equipment they had seen. Less than fifteen minutes later the Marine position was overrun, but not before the communications equipment was destroyed to prevent the Romulans from using it. The invasion of Sectis was over, and the Colonial Marines had suffered their first casualties of the Romulan War.

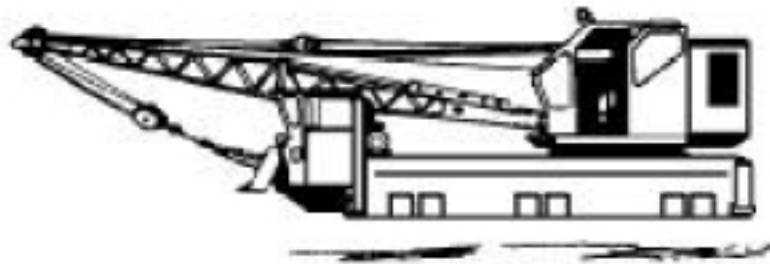
THE UNPF MARINES

As the Romulan War progressed, it became evident that to survive it, Earth was going to have to unify all of it's forces and fight as a single military organization. The United Nations nationalized all armed forces in 2158, and created the United Nations Peace Force. The Colonial Marines became part of this new organization, and were known as

the UNPF Marines. Their mission hadn't changed, only the name and the uniforms. By the spring of 2162, UNPF forces had fought the Romulans to a standstill; in March they decisively defeated the Romulan fleet at the Battle of Cheron. The War was over, and there was another change ahead for the Marines.

STARFLEET AND THE SFMC

In response to the Romulan invasion, five separate civilizations joined together to create the United Federation of Planets. The newly created Federation was founded as a peaceful and cooperative defensive organization, whose primary goals were exploration and growth. However, no one had forgotten the lessons they had learned at the hands of the Romulans. No matter how peaceful the Federation might be, there would always be the threat of war and invasion. To prevent this, the Federation created Starfleet. The naval forces of the UNPF became the core of the new Starfleet, while the UNPF Marines became the Starfleet Marine Corps. Since that time, the Marines have undergone changes in organization and tactics as well as advances in technology. One thing that hasn't changed, however, is the presence of Combat Engineers and their commitment to support those who depend on them.



25 ton Mobile Crane

Combat Engineer Traditions

There are several strong traditions in the SFMC Combat Engineer branch. The official branch color is Forest Green, which is symbolic of our work with terrain.

Another tradition is the wearing of a utility belt or harness. This belt or harness has several pouches and places for tools and equipment that a Combat Engineer would find essential in the line of duty. Worn as a belt with the Class B uniforms, the belt is developed into a harness for the Class C by adding shoulder straps and some more equipment.

Another tradition is Engineer Boots. Combat Engineers often wear steel-toe or safety-toe black boots, in a distinctive style known as an Engineer Boot. The safety toe and calf-high uppers protect the Engineer against injuries to his foot and shin, a common occurrence in traditional Combat Engineer work. The Engineer Boot is worn with Class C uniforms only, and may be bloused or not, as desired.

Lastly, the Branch Director for the SFMC Combat Engineers has a special title, similar to the Director for the Medical branch. (That person is referred to as the Surgeon General although they may or may not actually be a General officer). The Director of the Combat Engineer branch is referred to as The Engineer. This is a tradition carried forward from the 20th century's US Combat Engineers.

THE ENGINEER MOTTO "FORGING THE FUTURE"

The motto for the Combat Engineer branch is "Forging the Future". It refers to the Combat Engineer missions of construction and demolition, in or out of combat, that help build a stronger peace.

THE ENGINEER SLOGAN "CAN DO"

The traditional slogan of the Combat Engineers of Earth's 20th century was "Can Do"; it has been carried on through history to the STARFLEET Marine Corps as the Combat Engineer branch slogan. It speaks of the Combat Engineers' willingness and ability to perform any mission, any place, any time and under any conditions.

THE ENGINEER DEVICE "THE TOWER"

The device, or symbolic logo, of the Combat Engineer branch is a single castle tower made of red brick. This stands for the strength of solid construction and the defensive purpose of our work. It is derived from a similar device used by 20th century Combat Engineers, which was a red brick castle.

Organization of the Branch

PURPOSE OF THE SFMC COMBAT ENGINEERS

Combat Engineers support the STARFLEET Marine Corps combat effort by providing specially trained and equipped personnel for the primary duties of construction (building fortifications, bridges and installations) and demolition (breaching obstacles, reducing fortifications and clearing minefields). Secondary duties that support the combat effort are surveying (strategic and tactical analysis of terrain features and structures) and protected forces employment (firefighting, underwater and toxic atmosphere construction, nuclear/chemical/ biological operations). While STARFLEET has many engineers that are quite qualified to perform many similar functions, the Combat Engineers are expected to perform their duties under hazardous or combat conditions. It is one thing to build a bridge; it is another thing entirely to build that bridge while the enemy is shooting at you from the other side of the river.

FIELDS OF COMBAT ENGINEERING

The Combat Engineer branch of the STARFLEET Marine Corps has many important duties, both combat and non combat related. Because the missions and duties are so variable, the Combat Engineers have many different specialties within the branch. These specialties are organized into four basic fields (related specialties within a branch). These fields are known as Pioneer, Survey, Sapper, and Protected Forces. Pioneers are the builders; Surveyors are the field scientists; Sappers are the destroyers; Protected Forces personnel work in extremely hazardous conditions that require special equipment for breathing and protection.



*Traditional Front End Loader,
Shown without Roll Cage or Backhoe*

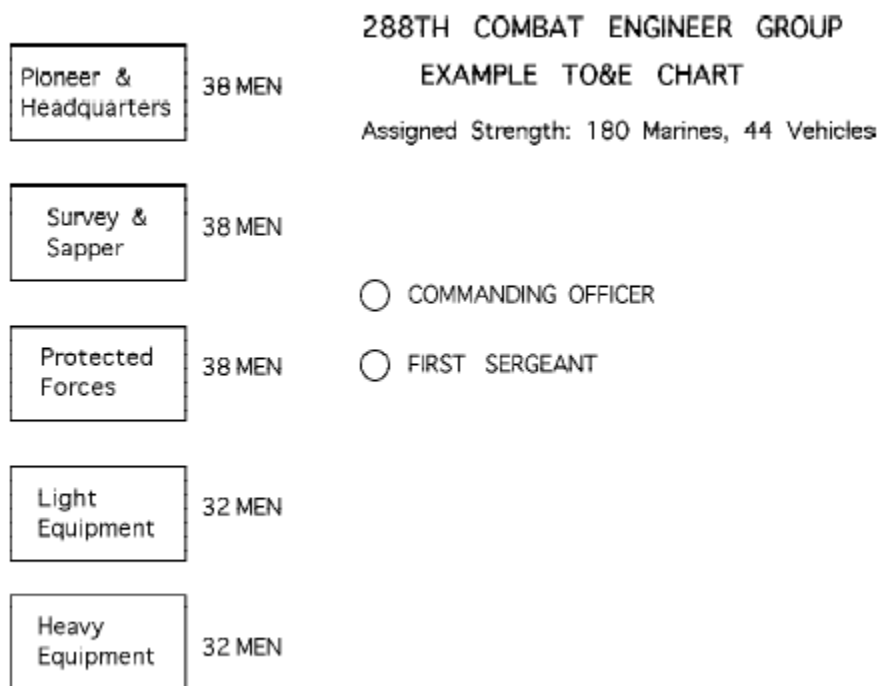
Organization of Units

Combat Engineer units are organized in whatever fashion best suits the units mission. Combat Engineer units are not normally assigned at levels smaller than a platoon. That means you won't normally see a squad of Combat Engineers assigned to a larger SFMC unit, although it could happen out of necessity. The largest homogenous Combat Engineer unit is known as a Combat Engineer Group. This unit is usually assigned to planetary bases, starbases and large starships, as it has many vehicles assigned to it. Aboard smaller vessels, Combat Engineer units are platoon sized, with squads performing duties assigned to platoons in the Combat Engineer Group.

To illustrate a typical Combat Engineer Group, the following pages contain diagrams showing the Table of Organization and Equipment (TO&E) for the 288th Combat Engineer Group ("The Wrecking Crew"). The 288th is currently assigned to the USS Broadsword as part of the 288th Marine Strike Group. The 288th has a standard strength of 180 Marines and 44 vehicles. It is a full mission range unit, capable of handling any Combat Engineer tasks. The unit is made up of five platoons, plus a Unit OIC and a First Sergeant. Three of the platoons are manpower units, with no vehicles assigned to them (although they have support equipment, like RPVs, Exoskeletons, etc. assigned to them). These platoons each have a specific platoon leader and platoon sergeant, as shown in the diagrams. The remaining two platoons are vehicle sections, and the diagrams show which vehicles are assigned to which platoon. There is no separate platoon leader or platoon sergeant in these two platoons. The senior ranking vehicle commander functions as the platoon leader. There is specific platoon sergeant,

instead each vehicle commander acts as a "squad leader" and reports to the senior vehicle commander.

In some of the slots on the charts, you will see terms like "Alien Scout" and such. These refer to non-terran Marines, whose special biology and/or talents make them useful in that section. In the aforementioned example, the term refers to Sergeant Hussk, a native of Janus-VI. She is unsuited to other tasks as a Marine, since Horta have no appendages for manipulating tools; however, her ability to tunnel rapidly and without technological implements makes her an invaluable member of the team.



Survey/Sapper Platoon

Platoon Leader (01-03)

Platoon Sergeant (E7)

| <u>1st Squad</u> | | <u>2nd Squad</u> | | <u>3rd Squad</u> | | <u>4th Squad</u> | |
|-------------------------|--|-------------------|--|-------------------|--|--------------------|--|
| Squad Leader (E6) | | Squad Leader (E6) | | Squad Leader (E6) | | Squad Leader (E6) | |
| <i>Aerial Recon</i> | | <i>Analysis</i> | | <i>Sappers</i> | | <i>Demolitions</i> | |
| RPVA Opr. E4 | | Cartographer E4 | | Sapper E4 | | Demo Spc E5 | |
| RPVA Opr. E3 | | Geologist E4 | | Sapper E4 | | Demo Spc E4 | |
| RPVA Opr. E3 | | Oceanographer E4 | | Sapper E2 | | Demo Spc E3 | |
| RPVA Opr. E2 | | Cbt Ecologist E5 | | Sapper E2 | | Demo Spc E2 | |
| <i>Subsurface Recon</i> | | <i>Scouts</i> | | <i>Sappers</i> | | <i>Demolitions</i> | |
| RPVB Opr. E4 | | Surveyor E4 | | Sapper E5 | | Demo Spc E5 | |
| RPVB Opr. E3 | | Surveyor E3 | | Sapper E4 | | Demo Spc E4 | |
| RPVB Opr. E2 | | Surveyor E2 | | Sapper E4 | | Demo Spc E4 | |
| Alien Scout E5 | | Surveyor E2 | | Sapper E4 | | Demo Spc E2 | |

Pioneer/Headquarters Platoon

Platoon Leader (01-03)

Platoon Sergeant (E7)

| <u>1st Squad</u> | | <u>2nd Squad</u> | | <u>3rd Squad</u> | | <u>4th Squad</u> | |
|-------------------|--|-------------------------|--|------------------------|--|-----------------------|--|
| Squad Leader (E5) | | Squad Leader (E5) | | Squad Leader (E5) | | Squad Leader (E5) | |
| <i>Cutters</i> | | <i>Lt Construction</i> | | <i>Supply/Drivers</i> | | <i>Communications</i> | |
| Pioneer E4 | | Carpenter E4 | | Supply E4 | | Commo E4 | |
| Pioneer E3 | | Carpenter E3 | | Supply E3 | | Commo E3 | |
| Pioneer E3 | | Plastics Former E3 | | Driver E2 | | Linguist E2 | |
| Pioneer E1 | | Plastics Former E1 | | Driver E2 | | Linguist E2 | |
| <i>Diggers</i> | | <i>Hvy Construction</i> | | <i>Medical Section</i> | | <i>Operations</i> | |
| Pioneer E4 | | Mason E4 | | Medic E5 | | Ops NCO E5 | |
| Pioneer E3 | | Mason E3 | | Medic E5 | | Analyst E5 | |
| Pioneer E2 | | Welder E2 | | Corpsman E4 | | Draftsman E4 | |
| Pioneer E2 | | Welder E2 | | Corpsman E4 | | Clerk E4 | |

Protected Forces Platoon

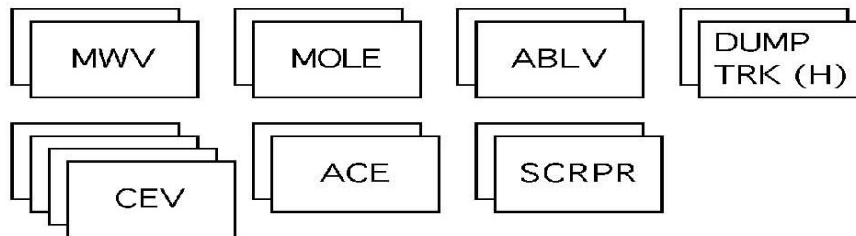
Platoon Leader (01-03)

Platoon Sergeant (E7)

| 1st Squad Squad Leader (E6) | 2nd Squad Squad Leader (E6) | 3rd Squad Squad Leader (E6) | 4th Squad Squad Leader (E6) |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| <i>Diving Section</i> | <i>Firefighting</i> | <i>CBR Section</i> | <i>Spacewalkers</i> |
| Diver E4 | Firefighter E4 | CBR Spec E5 | MicroG Spc E5 |
| Diver E3 | Firefighter E4 | CBR Spec E5 | MicroG Spc E4 |
| Diver E3 | Firefighter E4 | CBR Spec E4 | MicroG Spc E3 |
| Alien Diver E2 | Firefighter E5 | CBR Spec E3 | MicroG Spc E2 |
| <i>Deep Diving</i> | <i>Damage Control</i> | <i>Decon Section</i> | <i>Exotic Atmospheres</i> |
| Diver E4 | Civil Eng E4 | Chem Eng E5 | ExoEnv Spc E5 |
| Diver E3 | Civil Eng E3 | Chem Eng E5 | ExoEnv Spc E4 |
| Diver E2 | Mech Eng E2 | CBR Spec E4 | ExoEnv Spc E4 |
| Alien Diver E5 | Elec Eng E2 | CBR Spec E4 | ExoEnv Spc E2 |

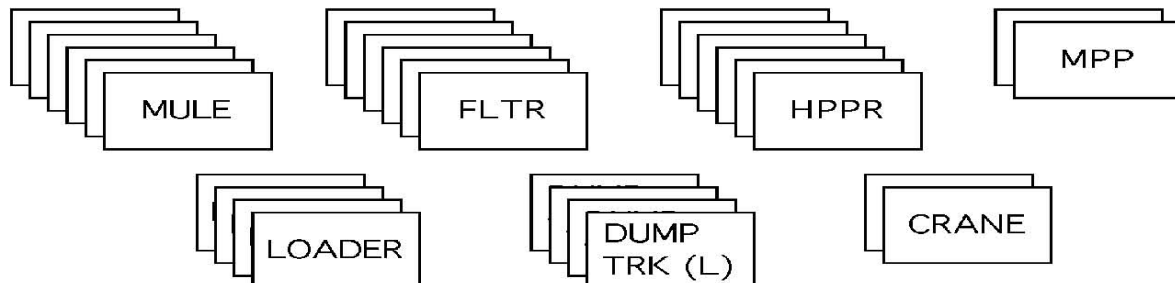
Heavy Equipment Platoon

18 vehicles and crews



Light Equipment Platoon

30 vehicles and crews



Non-Combat Missions

Combat Engineers learn new skills, and hone their old ones, by practicing them during peacetime. They do this by assisting the STARFLEET Corps of Engineers and other organizations. Construction, salvage and civil defense planning are all parts of the non combat mission of the STARFLEET Marine Corps Combat Engineer Branch. Following is a list of some common missions that are undertaken by the Combat Engineer branch.

Construction

TERRAFORMING

Changing an uninhabitable planet into a colony world is a tough, dangerous job. No one is better equipped to land on such a planet and tackle that task as well as the SFMC Combat Engineers. During the first stages of a Terraforming project, surveys have to be conducted, resources located and marked, fortified buildings for the workers have to be constructed and large scale power generation equipment installed. In some cases this means massive atmosphere processing units, in others it means pressurized undersea domes for algae farming. Most of the time, once stage two is completed, the Combat Engineers move on to another planet, but occasionally they will stay as part of a permanent garrison on that planet (after all, they know the terrain better than anyone by then!)

CIVIC ENHANCEMENT PROJECTS

This mission includes construction of anything that will improve the quality of life for members of a community, from a sports stadium to a new hydroelectric plant. Smaller communities often lack the resources to undertake such a project; we're speaking of economics as well as manpower and machinery. Combat Engineers donate time and energy to construction of the project at little or no expense to the community. This keeps their skills sharp and builds good relations with the locals (who benefit economically from the troops spending credits in the town during their off duty time).

AIRFIELDS

Combat Engineers may construct facilities for air transportation, for either large or small aircraft. This comes from the combat duty need to build tactical landing strips and support facilities for friendly aerospace fighters and supply vehicles.

PLANETARY DEFENSE SITES

As a deterrent to space borne invasion forces, heavy weapons installations may be constructed by the Combat Engineers. These are normally handed over in a "turn key" condition to the local defense forces, once construction is complete. This may include

deep well energy weapons (Phasers, Meson Guns, etc.) or hardened launch sites for missiles and spacecraft. In almost all cases, an independent energy supply is constructed on site, as a tactical necessity.

GROUND BASES

STARFLEET Marine Corps installations are usually constructed by the Combat Engineers, in conjunction with STARFLEET's own Corps of Engineers. This reduces the workload for everyone by sharing the duty, and ensures that the bases will be built to SFMC specifications.

Survey

CIVIL DEFENSE PLANNING

Along with building planetary defense emplacements like the aforementioned deep well phaser battery, Combat Engineers also build protective shelters for civilians and install civil defense command centers as well. This includes emergency power sources, sanitation and medical facilities and a host of other related civil defense system components. To insure the most efficient and useful placement of these facilities, survey teams do a detailed analysis of the site. With their experience in combat situations, Combat Engineers can best determine where and how to build civil defense projects.

DISASTER PREPAREDNESS

On a world where civil defense is already established, or natural hazards are a greater danger than possible combat the Combat Engineers may help develop and build a disaster preparedness network similar to a standard civil defense one. The emphasis is more on response to natural disasters and prevention of casualties than on combat defense. Barriers along a shoreline (to prevent storm surge) and tornado shelters are examples of this.

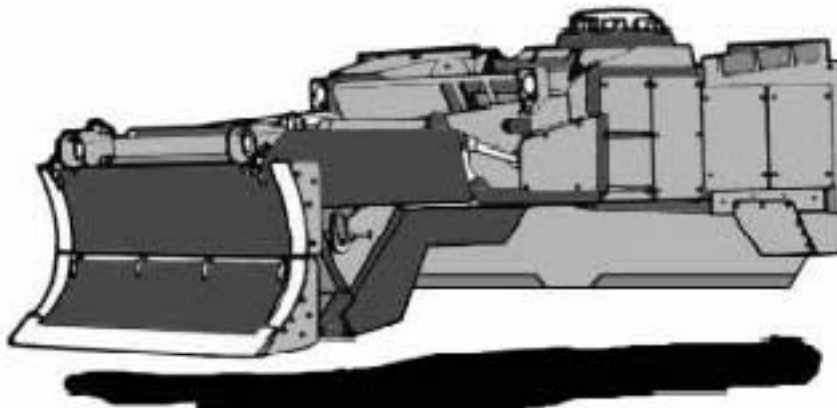
Protected Forces

SALVAGE OPERATIONS

In deep water or exotic atmospheres there are few who can match the skill and equipment of a Combat Engineer, especially where salvage or construction is concerned. The Engineer's Armored Work suit, combined with specialized cutting and demolition equipment, gives a trained Combat Engineer a definite edge in such environments. In general, the more hazardous or challenging the situation, the greater the chance that the Combat Engineers will be called in to handle it.

FIREFIGHTING

When fighting a large fire, or one that involves hazardous chemicals, Combat Engineers once again demonstrate their excellent equipment and training. Local firefighting agencies rarely have access to the heavy equipment that is standard to all Combat Engineer units (CEVs, etc.) and never to things like Engineer Mecha. This heavy equipment can mean the difference between containing a large fire and letting it devastate miles of terrain.



Armored Combat Earthmover

Combat Missions

The combat mission of the Combat Engineer branch is relatively simple, and consists of two basic concepts. First, counter the mobility of the opposing forces while enhancing the maneuver capabilities of our own forces. Second, increase the defensive capability of our forces through fortifications, while reducing the enemy defensive strength by destroying their fortifications. Military operations in hazardous or unusual environments are also a large part of the Combat Engineer duties.

Defensive Operations

FIGHTING POSITIONS

Trenches - the most primitive and basic defensive fortification, and also remarkably effective. Trenches provide cover and concealment for personnel, while allowing movement between more fortified fighting positions. Dozers, scrapers, CEVs, explosives and hand tools are all used to create trenches. Trenches can range from simple slit trenches suitable for a single occupant, to extensive networks of high traffic corridors with overhead cover. Trenches that are wide enough and deep enough pose a significant obstacle to traditional wheeled or tracked vehicles. If constructed for that purpose, these trenches are referred to as ditches.

Foxholes - Similar to trenches, foxholes are simply holes in the ground that provide cover and concealment for individual troops. They range from simple one man fighting positions to larger three or four man fighting positions, which usually operate a crew served weapon. If the foxholes are going to be used for any length of time, they will be improved by adding grenade sumps, overhead cover, and camouflage.

Revetments - A revetment is a large, below grade area for vehicles. This can be a parking area for aircraft or refueling vehicles, or a fighting position for an AFV or Self Propelled Gun. If it is intended as a fighting position, it usually has a ramp up to a firing point, allowing the vehicle to shoot from behind a low wall of dirt or concrete. When necessary, the vehicle backs down the ramp, dropping out of the enemy's line of sight. Revetments have an opening to the rear that allows the vehicle to leave easily, in case there is a need for a hasty advance or retreat. Permanent revetments will always have an area of overhead cover to park the vehicle, as protection from artillery impacts and aerial observation.

Bunkers - Also known as strong points, bunkers are the primary fortification for heavy weapons. They are constructed of combination layers of armor, dirt, concrete, force fields, or whatever else will protect the occupants. The bulk of a bunker is below ground, making it difficult to estimate it's actual size and armament. Tunnels or trenches may connect it to other bunkers or fighting positions. Bunkers are constructed with a primary field of fire (it's 'front') and may have one or two secondary fields of fire to either side. Trenches will generally connect to the rear of the bunker, limiting it's field of fire and observation in that direction. Tunnels or elevators will enter from below ground level, allowing a completely circular bunker or even a rotating weapons turret.

COUNTERMOBILITY DEVICES

Simple Obstacles - Anything that limits an enemy force's choices in maneuver is considered a "Counter mobility Device", commonly referred to as an obstacle.

Vehicles equipped with antigravity are not significantly slowed by most simple obstacles,

although they may be used to force such a vehicle to “pop-up” as it passes over the obstacle. This allows an anti-vehicular weapon nearby to take a shot at it, possibly at a lesser armored area. Hedgehogs, log cribs, ditches, road craters and stump rows are all examples of simple obstacles. Combined with mines or razor tape, and covered by friendly fire, these simple obstacles can slow or stop an infantry advance as well as force vehicles to bypass the area.

Abatis - By felling trees with explosives or hand tools, an effective obstacle is created. The trees are felled on either side of a road or path, allowing them to fall across the road in overlapping rows. The trees should point diagonally across the road towards the direction of enemy advance, and should not be completely severed from their stumps. The trees should be cut nearly all the way through, about 1 meter above ground level. This makes removal of the obstacle very difficult. Antipersonnel mines and booby traps can be added to this obstacle to increase it's effectiveness.

Mines - A wide variety of mines are available, from antipersonnel to antivehicular. They range in size from about the size of a golf ball to nearly a half meter across. They can be purpose built items, or improvised from other materials and explosives. These are the most effective obstacle, but also require the most skill to use. Mines may be emplaced by hand, air dropped, delivered by artillery or emplaced by a Mine Warfare vehicle. When used to enhance obstacles, mines are nearly always emplaced by hand.

Razor Tape - Spools of antipersonnel wire, either single molecule polymer strands (Sinclair Molecuwire), metallic ribbon, or the more common simple polymer barbed line can be used as an obstacle to troop movement. These spools may be emplaced by hand, using a flitter or hopper, or strung out behind a vehicle like a CEV. They have almost no value as antivehicular obstacles, but are greatly improved by the addition of mines. Note that Sinclair Molecuwire requires special dispensers and handling techniques, but metallic ribbon does not.

Offensive Operations

MOBILITY

Bridging - Rivers, streams, chasms and ditches all pose a problem for friendly maneuver forces, particularly if they are not completely antigravity capable. To counter this problem, Combat Engineers have developed a number of techniques to bridge these obstacles. A hasty bridge be constructed using inflatable bridging sections (called pontoons when used to bridge a water obstacle). These are filled with a foam that hardens quickly, becoming rigid and capable of supporting vehicle traffic in less than an hour. Alternatively, an Armored Bridge Laying Vehicle (ABLV) may be used to span the gap. The ABLV moves into the gap and extends it's bridge span, allowing vehicle traffic in less than three minutes.

When the bridge is no longer needed, the ABLV retracts the span and rejoins the maneuver force. Permanent bridges may be constructed using CEVs and hand tools;

another option that may be employed in certain cases is to bring up a Digger/Tunneler and create a tunnel under the obstacle. This provides a permanent and concealed passage through the obstacle.

Breaching Minefields - Minefields pose a serious threat to maneuver forces. Combat Engineers have developed rapid and effective methods for breaching them. Depending on the tactical mission and the urgency of the situation, the Combat Engineers may use explosive devices (Bangalore Torpedoes, etc.), CEVs (direct fire or bulldozing), Mine Warfare Vehicles or hand tools to clear a path through the minefield. As most minefields are covered by enemy fire, this operation can be even more hazardous than you might expect. This is the reason that so many defensive countermeasures were developed by the Combat Engineers to protect themselves while working (anti-laser aerosols, smokescreens, etc.).

Clearing Obstacles - Simple obstacles may restrict or halt the advance of friendly troops, requiring the Combat Engineers to deal with the obstacles rapidly. Nothing works better than the CEV, since it was designed with this purpose in mind. However, other methods exist and may be employed as the situation warrants. Explosives, indirect fire, Mecha and hand tools may all be used to reduce or remove an obstacle.

SPECIAL COMBAT TASKS

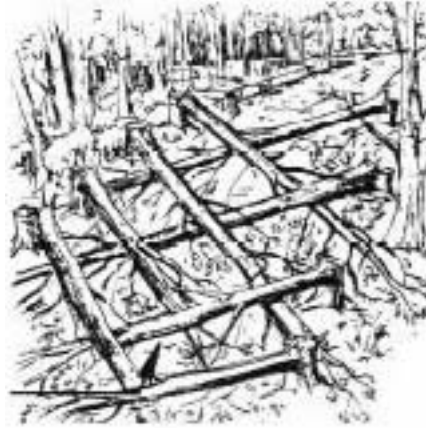
Military Operations in Urbanized Terrain (MOUT) - In very urban terrain, the Combat Engineers may be called upon to provide close support of the infantry, using their specialized training and equipment, as well as their familiarity with construction methods. This may mean anything from analyzing a city sewer system to leading a team through a ventilation network in a power plant. Explosives, hand tools and extensive knowledge of building methods are all essential in such an environment.

Subsurface Operations - Because Combat Engineers spend so much time working at or below the planetary surface, they have developed specialized equipment and techniques for tunneling, earthmoving and mining. This includes the Digger/Tunneler and the RPV/Subsurface. When combat operations move below ground, the Combat Engineers are absolutely essential to success, providing critical reconnaissance information and movement options.

CBR Decontamination - Although rarely used in combat, weapons of mass destruction have been used to great effectiveness in the past. The threat of such use remains a strong deciding factor in strategic and tactical command decisions. Combat Engineers are trained and equipped to operate in such an environment, and to decontaminate other friendly forces that may have been exposed to such weapons. This ranges from radioactive materials to chemical and biological agents to micro weapons like nanites. All of these weapons can disrupt or destroy an organization, especially if they are carried back to rear areas that are not equipped to deal with them.

Tactics 101

Following are some examples of common situations (called scenarios) that Combat Engineers encounter in the line of duty, and the tactics used to complete the mission. In these examples, the Combat Engineers are operating in a limited combined arms environment, with artillery support. In most cases, the enemy is either present and poses an active threat, or the enemy presence is expected shortly. These are only examples, and do not constitute the only possible solutions. In fact, there are as many possible solutions as there are Combat Engineer units. Combat Engineers pride themselves on finding solutions to problems, using their own unique style. For further information concerning your unit's tactical planning, consult with your unit leaders.



Example of Abatis

Offensive Operations

BRIDGING

Scenario A - An existing river bridge has had the center span blown out of it by enemy demolition teams. Friendly forces consisting of light infantry and wheeled support vehicles need to cross this bridge ASAP.

Solution One - Maneuver CEVs into overwatch positions, while staging other equipment out of line of sight of opposite shoreline. CEV's take any visible enemy fortifications under fire. Call for fire, directing supporting artillery onto enemy positions. Survey team sends RPVA to scout bridge span, looking for emplaced demolitions and booby traps. Exact measurements of bridge and gap are transmitted to ABLV automatically. Prepare ABLV for movement. Request smoke shells on enemy position, while sustaining barrage. ABLV maneuvers to edge of bridge span and begins laying smoke as it moves onto the bridge. Using stored information and inertial navigation, the ABLV remains inside its smoke screen as it maneuvers into place at edge of gap. Begin automatic sequencing of extensible bridge equipment. Signal infantry to advance through smoke, using disposable filter masks. Cross gap, secure opposite bank.

Scenario B - A wide and slow moving, but deep, canal blocks movement of friendly forces. These forces consist primarily of light infantry and some civilian vehicles commandeered to carry supplies.

Solution One - Stage bridging teams out of LOS of enemy forces, while CEVs move into over watch positions. CEVs take any obvious enemy fortifications under fire. Call for fire, directing supporting artillery onto enemy positions. Request even mix of smoke and explosive shells. Using some of the infantry to assist, assemble bridging sections and prepare to move them to water's edge. CEV's lay smoke along friendly side of canal, while artillery increases the number of smoke shells landing on enemy side. Bridging sections are brought forward as two pairs of Flitters and Hoppers cross canal at high speed, laying polymer line behind them. Hoppers fix pickets on enemy shoreline, while Flitters attach line to pickets. Both vehicle teams return as pontoon section #1 is attached to line and pushed into the water. Pontoon section #2 is attached to line and pushed into water. Bridging team spot welds sections together with portable molecular welding equipment, as process is repeated. If more speed is required, pontoon sections are spot welded together on shore and lead section is hooked to flitter cable. Flitter drags bridge across river as fast as sections are connected. If necessary, an ABLV can cross canal and bridge last 50 meters of span. Cross pontoon bridge, secure opposite bank.

Solution Two - Move CEVs into overwatch positions, taking any obvious enemy fortifications under fire. Begin tunnel out of LOS of enemy, using Mole. Call for fire, directing supporting artillery onto enemy positions. Request even mix of smoke and explosive shells. Dig tunnel under canal, until just before breakout on enemy side of canal. Exit point of tunnel should be behind observed enemy positions. Move infantry assault elements into tunnel until directly behind Mole. CEVs lay smoke on friendly side of canal, while artillery increases the number of smoke shells landing on enemy side. Artillery ceases explosive barrage, switching completely to smoke as Mole breaks out of tunnel and infantry follow. Enemy, misled into belief that standard bridging action (as in Solution One, above) is occurring, is taken by surprise from rear. CEVs may advance across canal on AG units, for close assault. If enemy Command Post is apparent to Mole crew upon breakout, vehicle is used to destroy it. Once enemy side of canal is secure, support vehicles are brought through tunnel. Mock bridge is built across canal, 500 meters downstream, to deceive future enemy efforts to block crossing of canal.

BREACHING OBSTACLES

Scenario A - A series of wire entanglements have been emplaced by the enemy to restrict access to a landing field. Commandos and infantry personnel are prepared to secure the landing field, but the wire obstacle must be breached first.

Solution One - Bring up two CEVs, laying smoke if necessary. Use demolition guns (firing HEP rounds) to blast a hole in the entanglement and clear away mines that may be present. Drop dozer blade, setting depth to 1 meter and offset angle to 45 degrees right (CEV #1) and left (CEV #2). Plow through obstacle side-by-side, clearing a two vehicle wide corridor for follow on forces.

Solution Two - Sapper team inspects entanglement for mines. If none are present, Bangalore torpedoes or the charge line launcher from a Badger are used to clear a path through the obstacle.

CLEARING MINEFIELDS

Scenario A - Friendly forces have encountered a dense minefield as they advance on a small town. Before the town can be secured, the minefield must be breached.

Solution One - Using pairs of CEVs, advance to edge of minefield, laying smoke as necessary. Drop dozer blades, setting depth at 1.5 meters and offset angle to 45 degrees right and left. Use demolition guns to blast a path ahead of CEVs, as they plow forward.

Solution Two - Use charge line launcher and Badger to clear a path through minefield, protecting vehicle as it works with smoke and covering fire from friendly forces.

Scenario B - The enemy has retreated, leaving a large minefield blocking a major highway. The minefield appears to extend at least three hundred meters to either side of the highway, through rough terrain. No direct enemy action is expected, but large numbers of refugees will be traveling down this road soon. It is imperative that a completely safe path through the minefield be created, as soon as possible.

Solution One - Sapper teams inspect minefield, determining type and probable dispersion. A Badger may be brought up to breach the minefield, with portable scanning units used by the sapper teams as a safety check of the badger's work. Pickets with visible and audible warning devices are emplaced along the safe route, 1 meter inside the safe corridor, marking the path for friendly forces.

Defensive Operations

MINELAYING

Scenario A - Enemy forces are advancing, and a hasty minefield must be emplaced to slow their advance, gaining time for friendly forces to prepare defensive fighting positions.

Solution One - Using a Badger, a 30 meter mixed belt of scatter able AP/AV mines is laid across a road, while pairs of AV smart mines are emplaced at either end of the minefield, using the Badger's transporter arrays. Artillery is used to drop SCAMS in front of and onto advancing enemy columns.

EMPLACEMENT OF FORTIFICATIONS

Scenario A - Friendly forces have stopped advancing, and are taking up defensive positions in a city. An enemy counterattack is certain, as soon as the enemy can marshal enough forces for an attempt. The 288th Combat Engineer Group has been tasked to take any and all actions to improve the defensive fortifications.

Solution Two - Pioneer teams cut down trees to form Abatis obstacles, marking them for later mine laying by Badger. Sapper teams emplace Type 88 floating mines in the sewer systems, along possible avenues of enemy infiltration. CEVs and Woodchucks prepare vehicle fighting positions and bunkers, while ACEs and other construction equipment dig trenches and demolish any unnecessary buildings. The rubble is used to form barricades and strengthen the defensive fortifications elsewhere. Badgers lay mines along probable enemy paths of approach, while Moles undercut riverbanks, ridges and rubble filled streets that may be used for cover by enemy vehicles. Coded transponders are emplaced in these areas, then the cut is backfilled with debris and a few mines. Artillery units check the transponder signals and then pre-register their batteries on these target reference points. Flitters and Hoppers are used to emplace wire obstacles in areas where enemy infantry will have to advance; these are later mined by the Badgers with a mix of antipersonnel and antivehicular mines. Survey teams scout enemy positions with RPVAs and program RPVBs to patrol underground sewers and tunnels. Once primary defensive positions are completed, fake defensive positions are constructed to mislead the enemy. Areas that contain false trenches and or bunkers are mined with a mix of antipersonnel and command detonated area effect mines.

COUNTERMOBILITY ACTIONS

Scenario A - An enemy force consisting of infantry and a mix of wheeled, tracked, and AG equipped vehicles is advancing. They must be channeled into a smaller area, where friendly forces can concentrate fire and destroy them. The Combat Engineers are tasked with restricting or redirecting the enemy advance through the use of obstacles.

Solution One - Pioneer teams rapidly construct log crib obstacles and emplace them across wheeled vehicle routes. Sappers place antivehicular mines in depth along probable avenues of enemy approach, mixing acoustic and AG sensing mines in areas where wheeled vehicles cannot travel. Flitters weave tangle foot through forest terrain, while Hoppers fix pickets at random intervals in tall grass, sinking pickets to within 6 inches of ground level. Flitters then affix Molecuwire to these pickets, forming a hidden obstacle to infantry and ground vehicles. CEVs demolish any rock faces that overlook travel paths, blocking them with rubble. These barricades are later mined by a Badger. All obstacles are emplaced at a slight angle to the enemy path of approach, encouraging them to turn into the channeling area.

DENIAL OPERATIONS

Scenario A - Strategic considerations are forcing friendly forces to withdraw from a city. In doing so, they will have to abandon a large amount of vehicles and equipment. These materials may be captured and used by enemy forces in the near future. The 288th Combat Engineer Group is ordered to take actions to limit the usefulness of this material to enemy forces.

Solution One - Vehicles are maneuvered into positions where removal will be difficult (elevated or subterranean parking garages, highway underpasses, canals, rivers, ditches

or pits). Pioneers then salvage any parts they can from vehicles. Critical components are demolished with sledgehammers and portable torches. CEVs then use their demolition guns, phasers and dozer blades to bury the vehicles, collapsing structures on top of them or pushing rubble over them. Badgers lay mines over the area, concentrating AP mines in the rubble piles and AV mines nearby, to discourage salvage operations. Flammable materials are piled on top of abandoned fortifications and ignited with incendiary devices. Nonflammable materials that will be deformed or melted by intense heat are piled nearby, and then pushed into the blaze by an ACE or CEV. Demolition teams plant explosives in all remaining fortifications and destroy them. Any existing minefields are left in place, and any mines laid in the denial operation are recorded for future reference.

Solution Two - All salvageable parts are stripped from vehicles and critical components are smashed. A nearby dam is destroyed by sapper teams, flooding a large area with water. CEVs and ACEs push vehicles and debris into abandoned fortifications. AP and AV mines are laid in, on and around them below the water surface. Any flammable materials left above the water surface are destroyed by incendiary devices. Any buildings that are above the water level and may be used by the enemy are demolished by the CEVs and demolition teams. Protected Forces personnel enter the sewer system and destroy any natural drainage areas, using explosives and hand tools. This prevents the flooded area from draining away easily, and hampers enemy efforts to do so.

Tactical Issues in Combat Engineer Deployment

BRANCH STRENGTHS

Combat engineers excel in missions that call for construction or close range demolition, and they make decent infantry in close quarters (especially if they have their CEVs available as support). Certain weapons and tools that they carry are optimized for close quarters combat, making them effective in restricted areas like underground tunnels or machinery filled industrial areas. Underground, underwater or in space, Combat Engineers do very well, as the enemy is more hampered by the environment than they are. The farther from normal the environment is, the better they are equipped to handle it.

BRANCH WEAKNESSES

They have very little in the way of heavy weapons, being limited to a few vehicle mounted weapons (the CEV's demolition gun, etc.) and one or two tools that can be used as improvised weapons (thermal lance, demolition charges, etc.). This means they can fight as light infantry when necessary, but cannot stand up to armor or powered infantry forces. They also lack air defense capability, making them easy targets for enemy aerospace assets. They lack long range weapons altogether, making them nearly

helpless in open country.

GRAV VEHICLES VS. WHEELS OR TRACKS

The primary mode of propulsion for all SFMC ground vehicles is through antigravity units. There are several major advantages to this and one possible disadvantage. The advantages are standardization of repair parts and ease of repair (through interchangeable parts), very high mobility and a smoother ride, eliminate the need for the complex suspension systems used in 20th century vehicles, and lower maintenance costs (in terms of trained personnel and time to repair the simpler designed vehicles). The disadvantage to this system of propulsion is that AG units have sometimes proven unreliable in high radiation areas, a possibility in certain aspects of combat and in the Combat Engineer mission overall. For these special cases, the SFMC has more traditional tracked and wheeled vehicles that perform similar duties as the ones listed here. Training on these less technologically advanced versions of vehicles and equipment is part of the standard training in each branch of the Corps.

ARMOR STANDARDS

Most SFMC vehicles (and all Combat Engineer vehicles) are constructed of a combination of three or more of the following: Polysteel, high tensile strength ceramic composites, blended polymer resins, duranium, Nitrium, Terminium, Toranium and/or Duralloy. Armor for fighting vehicles comes in a variety of types, all providing the same levels of protection for a given rating. This might mean 4 cm of Polysteel layered under 1 cm of duranium and 1 cm of Toranium in one case, and 2 cm of duranium under a sandwich of spaced composite ceramic and Polysteel layers in another. For further information, check your specific vehicle's technical manual.

ARMOR RATINGS

To simplify the various technological terms that arise from these differing forms of construction, a rating of Light, Medium, Heavy and Very Heavy has been used to designate the armor rating for each vehicle. As a general guideline, the following equivalents to the ratings are given (listing the materials in order from inside layer to outside layer):

Light - 2 cm Duranium base, 2 cm spaced ceramic composites, 1 cm Terminium. Refractive crystals of Kelbonite embedded in final topcoat of paint.

Medium - 3 cm Duranium base, 2 cm spaced ceramic composites, 2 cm Nitrium alloy bonded to 1 cm Terminium. Refractive crystals of Kelbonite embedded in final topcoat of paint.

Heavy - 4 cm Duranium base, 1 cm honeycombed layer of NoFyre foamed resin bonded to a 2 cm layer of spaced ceramic composites, 1 cm layer of Rodinium, 2 cm layer of

Nitrium alloy bonded to 1 cm of Toranium. Refractive crystals of Kelbonite embedded in final topcoat of paint.

Very Heavy - 5 cm Duranium base, 1 cm layer of honeycombed NoFyre foamed resin bonded to a 2 cm layer of spaced ceramic composites, 2 cm layer of woven Terminium mesh, 1 cm layer of Rodinium, 2 cm Nitrium alloy bonded to 2 cm of Toranium. Refractive crystals of Kelbonite embedded in final topcoat of paint.

FORCE FIELDS VS. DEFLECTOR SHIELDS

There is a great difference between a force field and a deflector shield. Deflector shields are used by starships and other space going vessels as a defense against physical and energy based weapons. They do this by altering the gravity level (along a plane perpendicular to the incoming force) to extreme levels, bending the energy waves away from the hull and completely destroying physical objects like missiles, etc. Obviously, doing this inside of a planet's atmosphere would be a bad thing. This is why force fields are used by ground units and in-atmosphere aircraft. A force field is a barrier to incoming energy (kinetic, electromagnetic, heat, etc.) that distorts, absorbs or deflects that energy away from the unit generating the field. A sufficient amount of energy is capable of overcoming any force field, regardless of the source of that energy. This is why force fields are not as useful as deflector shields—a physical object traveling at high enough speeds carries a tremendous amount of kinetic energy, and may penetrate a force field. Against a deflector shield, that same object has absolutely no chance of penetrating. However, the technology to create and maintain a force field is much simpler and cheaper to produce than that used to create deflector shields. That is why force fields are so common. From the simple personal weather shelter to the active defense system on a Grav tank, the force field is extremely useful. And for that same reason, you will find them in use by the SFMC on certain vehicles and equipment.

FORCE FIELD RATINGS

As a measure of their relative strength, force fields are rated from a Level Zero (nominal) to Level Ten (maximum defense rating). As a guideline, the following general equipment ratings are given:

Zero (nominal) - slow leakage of atmosphere, will not stop physical objects at all (used for tents, etc.)

One - resists physical penetration, stops gases and liquids (used as a water barrier, maintenance areas, etc)

Two - limited ballistic shield, limited energy defense (personal diplomatic shields, standard confinement areas)

Three - Light defensive field (crew served weapons, support vehicles)

Four - Standard defensive field (heavy weapons, light combat vehicles, powered infantry armor)

Five - Medium defensive field (explosive concussion, medium combat vehicles, heavy ballistic weapons)

Six - Heavy defensive field (heavy combat vehicles, some installations)

Seven - Installation Defense Screen (used for fortifications)

Eight - Light Orbital Defense Screen (standard defense for medium fortifications, minimum level for targets expecting orbital bombardment)

Nine - Medium Orbital Defense Screen (hardened sites, heavy fortification)

Ten - Heavy Orbital Defense Screen (planetary defense sites)

Glossary of terms

Here is a list of common terms, abbreviations and acronyms that appear in the manual with definitions. There may be some references to terms that are common to the SFMC, but are not listed in this glossary. Those terms should be listed in the Marine Force Manual or in the relevant SFMC Guidebooks.

Antiaircraft

Any ground based weapon system that is used to shoot down aerospace vehicles like fighters. This is most often missiles and directed energy weapons, but can refer to any weapon system that is capable of reaching and then damaging aerospace vehicles.

Abatis

A simple obstacle consisting of trees that are cut down by explosives or hand tools, but left attached at the base of the trunk. They are dropped in overlapping layers, pointing towards the direction of the enemy.

Ablative

Any material that heats up when energy is applied to it, and then burns away, taking part of the energy applied to it away as it does so.

ABLV

Abbreviation for Armored Bridge Laying Vehicle.

Aerospace Fighter

A tactical spacecraft used to destroy ground targets or other aerospace fighters. Usually having a crew of one or two, and are not warp capable although they are not limited to atmospheric operation.

AFV

Abbreviation for Armored Fighting Vehicle. A vehicle that is armed and armored with the specific purpose of fighting as a vehicle unit (as opposed to APCs, which are primarily designed to carry troops and are armed and armored to protect those troops). What the 20th century Marines would have called a "tank".

AG

Abbreviation for Antigravity or Antigrav.

AG Skimmer

A one or two person sports car, very fast and agile. It uses antigravity units for propulsion.

AG Sport Cycle

A one man antigravity propelled motorcycle, extremely fast and agile. They are used in sport racing, and require great skill to use at high speed.

AGL

Abbreviation for Automatic Grenade Launcher.

Airfield

An installation whose primary purpose is the launch and recovery of aerospace vehicles.

ALA Smoke

Obscurant created by heating and dispensing ALA Solution, that takes the form of a thick white cloud of smoke. This can be delivered by artillery shells, vehicle dispensing systems, or man portable sprayers and grenades. ALA Smoke blocks vision, most sensors and disrupts focused energy beam weapons like phasers and lasers. It is semi-toxic and requires the use of filter masks when operating inside a vapor cloud.

ALA Solution

A combination of micro crystals of duranium, fistrium, kelbonite and other energy resistant metals in a liquid solution. When heated and exposed to air, it forms a thick white cloud of ALA Smoke.

Algae Farming

A method for growing large quantities of simple food material, while simultaneously enriching a planetary water-based ecosystem. Used extensively during Terraforming of colony worlds and as a cheap source of food for overcrowded planets.

Allies/Allied Forces

One of two alliances of countries that fought Earth's infamous World War Two. It consisted of Great Britain, the United States of America and other countries.

American

Anything related to the United States of America, one of the superpowers of Earth's 20th century.

Anti-laser Aerosol

Term used to describe the cloud of vapors generated by ALA Solution when it is dispensed. Used as a defensive weapon.

Antigrav

Short form of Antigravity.

Antigravity

Method of propulsion that uses an antigravity field generator and an impeller to move a vehicle. Antigravity units are common in the 24th century, and form the basis for most forms of transportation within an atmosphere. They are sometimes unreliable in areas of high radiation.

Antipersonnel

Anything designed to negatively affect personnel, whether to hinder their movement or physically harm them.

Antivehicular

Anything designed to negatively affect vehicles, whether to hinder their movement or physically damage them.

AP

Abbreviation for Armor Piercing or Antipersonnel, depending on the context in which it is used.

APC

Abbreviation for Armored Personnel Carrier.

Armor

Any physical substance used to shield or protect an individual or object.

Armored Bridge Laying Vehicle

The standard assault bridging vehicle of the SFMC Combat Engineers. It's nickname is "Troll", because trolls (in fairy tales) usually lived under bridges, where the ABLV crew is usually located during a bridging operation.

Atmosphere Processor Unit

Huge industrial machinery used to create or convert a planetary atmosphere into one suitable for colonization. Usually uses geothermal, nuclear or M/AM power and enormous heat exchangers. The movie Aliens took place in and around one of these units.

Automatic Grenade Launcher

A rapid fire support weapon, that fires RAM grenades.

AV

Abbreviation for Antivehicular.

Ballistic

A weapon that relies on some form of physical projectile to damage the target, either through kinetic energy (like a bullet) or through the use of explosive warheads (like grenades and missiles). Ballistic weapons may be fired indirectly, in most cases, although with varying degrees of effect.

Ballistics

A field of physical science that deals with the behavior, performance and effectiveness of projectiles.

Bangalore Torpedo

A modular explosive device used to breach wire obstacles and some minefields. It is shaped like a long tube, and comes in short sections of pipe (each filled with explosives of some type). The sections are assembled together one at a time and the torpedo is pushed into the obstacle as it gets longer. Once in place, a delay fuse is activated and the sapper team leaves the area. The Bangalore torpedo explodes, clearing a narrow path through the obstacle.

Barricade

Any material that is piled in a heap to provide protection or obstruction.

Beam Phaser

A phaser that fires a continuous energy beam, rather than short rapid pulses.

Biological Agent

A weapon of mass destruction, usually some form of bacteria, germ or virus that is specifically developed to cause illness and/or death in a certain species.

Booby Traps

Improvised traps, either explosive or not, that are intended to injure unsuspecting or careless enemy soldiers and civilians. The term comes from World War One, where wine bottles were trapped with explosives and left for enemy soldiers to find while looting. There was a common, but not very intelligent bird known as a "booby". If you were dumb enough to pick up one of these trapped bottles and got killed, you were said to have been killed by a "booby trap".

Branch

A group of related jobs within the STARFLEET Marine Corps, like Combat Engineer, Aerospace or Armor. There are eight branches of duty within the SFMC.

Branch Director

The individual charged with creating, directing and guiding the materials concerning the respective branch that he is the Branch Director for.

Breach

To make a hole or path through something.

Breaching Obstacles

To make a hole or path through an obstacle, allowing friendly forces to pass through it without harm or delay.

Bridging

The act of spanning a gap that would otherwise inhibit ground movement.

Brushfire War

Small, relatively minor conflicts that raged during Earth's 20th century. In the 1980s, for example, there were more than 300 brushfire wars being fought at once all over the planet. In time, the term has come to mean any limited conflict.

Bulldozer

A heavy duty vehicle used for ground clearing, earthmoving and other excavation. It is typified by a large blade that is mounted to the front face of the vehicle, which is used to push dirt and rubble ahead of itself as the vehicle moves.

Bunker

Defensive fortification built at or below ground level, and usually housing heavy weapons of some sort. Bunkers are very hard to penetrate or destroy, and in some cases may not be detected until they open fire.

Bunker Busting

Slang for combat operations relating to the destruction of bunkers and other heavily fortified defensive positions. A Combat Engineer specialty!

Cable

A flexible rope, made of bundles of much smaller diameter wire, usually metal (although plastic polymers are sometimes used). Cables are much stronger than single strand of wire of equal thickness, but are not as flexible. Cables can be made of more than one type of material, and may or may not have a protective outer covering called a sheath. One disadvantage that cables have over a similar thickness of wire is that dirt and other debris can work it's way in between the fibers of the cable. These small abrasive particles eventually cut through the smaller bundles that make up the cable, weakening it. It is very difficult to detect this damage before the cable becomes dangerously weak, which is why a protective sheath is usually used on cables that will be in very dirty environments.

Camouflage

Any material or technique used to hide an object or individual from detection. This can range from simple paint applied in different colors that help a vehicle blend into the foliage around it to sophisticated electronic scanner scrambling devices.

Can Do

The Combat Engineer slogan, it describes their willingness and ability to perform any mission, any place, any time and under any conditions.

Cardassians

Alien race seen regularly on Star Trek: Deep Space Nine. They are hostile to the Federation and make formidable ground troops.

Cargo Hauler, General Purpose

Flatbed vehicle used for general cargo carrying purposes. It is a standard SFMC vehicle, used by most branches for a wide variety of purposes, and has more than a dozen common variants.

Cartographer

Someone who makes maps. These can be either 2 dimensional or 3 dimensional, and can be in any number of formats. Most cartographers are also skilled in orienteering, which is the use of a map and compass to navigate over land.

Castle

Ancient fortification, usually built of stone (although early models were made of wood) and surrounded by ditches, moats or palisades. Some of the most solidly constructed ones survive to this day.

Catapult

Primitive indirect fire weapon that used either torsion or counterweights to generate tremendous force, throwing rocks, barrels of oil and other missiles at opponents. Large, very cumbersome and had a very slow rate of fire.

Cavalry

Ancient form of military units, consisting of men mounted on horses or other fast animals. Most fought from horseback, using lances, swords and in some cases bows. During the period that cavalry saw the most use, they were the fastest and most mobile units available. Cavalry was still used as late as the 21st century, although they no longer used animals (helicopters and fast armored vehicles replaced the horse). Cavalry units were eventually phased out, as armored vehicles became fast and heavily armed. In the SFMC, the Armor branch performs most of the roles that cavalry fulfilled, as well as the traditional function of armored fighting vehicles.

CBR

Abbreviation for Chemical/Biological/Radiological.

CEV

Abbreviation for Combat Engineer Vehicle.

Chaff

Traditional term for material used to confuse radar homing missiles. Originally it meant metal foils strips, cut to the same length as the known enemy radar wavelengths. When dispensed, it formed a cloud of reflective material, suddenly giving the missile hundreds of targets. Modern chaff used by the SFMC consists of small particles of various alloys, some charged and some not. These particles radiate in the same range of frequencies as most known enemy sensors packages, with results similar to traditional chaff. The effectiveness of all chaff relies on knowing what kind of enemy sensors are being used to detect the target. Chaff is ineffective against heat seeking missiles, for example.

Charge Line Launcher

A device used to clear surface laid mines and other area effect obstacles, like concertina wire. A long and flexible explosive line is fired out of a launcher, unwinding a spool of similar material as it travels over the target. Once the line falls to the ground, it is detonated. This explosion will blow a path 10 meters wide by 1.5 meters deep, in most cases.

Charge Pack

A much larger and more rugged version of a standard power cell. These are used to power vehicles, and are rechargeable from fusion plants (or in some cases, solar cells).

Chassis

The frame or body of a vehicle, to which other components are mounted.

Chemical Agent

Any chemical compound used as a weapon. They may be further classified by their lethality (lethal, non-lethal), manner of application (liquid, gas, sprayed mist) and whether or not they are persistent. Persistent agents remain effective in an area for a long time, posing a long term threat. Non-persistent agents become harmless after a short length of time, allowing unprotected personnel to enter the area without harm.

Chemical Analyzer

A specialized device similar to a tricorder, used to sample solids, liquids and atmospheric gases for the presence of chemical agents. These are almost always short ranged, although slightly longer range versions are available on certain vehicles. The hand held versions are powered by a standard power cell, while the vehicle mounted ones are powered by the vehicle's power plant or charge pack.

Chemical Propellant

Chemical compound found in RAM grenades, rockets, missiles and other projectile weapons. It burns very fast, giving off gasses that are expelled from the rear of the projectile, propelling it forward.

Chemical/Biological/Radiological

Term used to describe three weapons of mass destruction. It refers to chemical agents (nerve gases, etc.), biological weapons (bioengineered viral plagues, etc.) and nuclear weapons (also known as atomic weapons).

Cheron, Battle of

Decisive battle of the Romulan War, where the Romulan Fleet was destroyed by a Federation one, near the planet of Cheron. This was the last major battle of the Romulan War, as it crippled the Romulan Empire's offensive strength.

Chill Can

Disposable refrigerant canister, used on the Combat Environment Suit to reduce or eliminate the wearer's thermal emissions.

Chlortheragen

The most deadly of the known Klingon chemical agents. Causes extreme agony in victims, before tremendous hemorrhaging and death.

Class A Uniform

Category of formal, or dress uniforms, worn by members of the SFMC.

Class B Uniform

Category of duty uniforms worn by members of the SFMC.

Class C Uniform

Category of combat uniforms worn by members of the SFMC.

Clearing Obstacles

The process of destroying, or rendering ineffective, natural or artificial obstacles. A primary mission for Combat Engineers.

Colonial Marines

One of several historical Marine organizations that evolved into the present day SFMC.

Combat Engineer

Marine trained in one or more of the traditional skills of demolition, construction and surveying.

Combat Engineer Vehicle

Standard vehicle of the SFMC Combat Engineers, used to clear obstacles and create or destroy fortifications.

Combat Environment Suit

An airtight, lightweight and loose fitting jumpsuit used to protect the wearer against hazardous environments and reduce thermal emissions. It does not provide any armor protection, however.

Combined Arms

Military term for operations that involve more than one branch type of unit (Aerospace and Armor, Mecha and Infantry, etc.)

Complex Obstacle

An obstacle that is created when you combine two or more simple obstacles and/or mines. As an example, a concertina wire barrier is a simple obstacle. With the addition of mines, it becomes a complex one.

Concertina

Coils of barbed wire or razor tape, which are compressed into smaller bundles for carrying and expand (like an accordion or concertina) when deployed. These coils, when expanded, form long tubes of sharp barbed wire or razor tape, and can be stacked to form a larger and more effective obstacle.

Condition One

Term used in scenario planning that refers to an active enemy presence. (The enemy is present, and they are trying to stop you from achieving your goals.)

Condition Two

Term used in scenario planning that refers to an unknown enemy presence. (The enemy may be present, but laying low, or they may show up before you get the job done.)

Construction

The process of building or fabricating things like buildings, fortifications, etc.

Countermine

Archaic term, used to describe a tunnel dug for the specific purpose of intersecting with a tunnel dug by the enemy. Also a modern term used to describe either clearing of enemy mines.

Counter mobility Device

Anything used to restrict or obstruct movement by personnel or vehicles.

Crew Served Weapon

A non-vehicular weapon system that takes two or more personnel to operate. Examples include heavy machine-guns, mortars, and field artillery pieces.

Crusades, The

Period during Earth's history, where Christian knights repeatedly invaded Moslem territory, hoping to capture Jerusalem and other "Holy Lands". They were unsuccessful in the end, but learned a great deal about warfare at the hands of the Moslem armies.

Crush Depth

The depth at which a vehicle or Work suit is no longer able to withstand the incredible pressures exerted on it. Implosion occurs, destroying the vehicle and its occupants. Crush depth for a standard EAW underwater Work suit is 550 meters, and the composite hard shell/force field suit has a crush depth of 1300 meters.

Cubic Meter

Unit of measurement, representing a volume of space that is 1 meter wide by 1 meter tall by 1 meter deep. There are 1000 liters of water in a cubic meter.

Decontamination

The process of removing harmful contamination from personnel and vehicles.

Decontamination Trailer

A mobile vehicle used to decontaminate vehicles and personnel. Powered by its own internal power source, but towed behind other vehicles (usually a Mule).

Deep Water Operations

Any underwater operation that takes place at a depth of greater than 500 meters.

Deep Well Energy Weapon

A planetary defense weapon, constructed like a well, with the barrel of the weapon lining the well shaft. One or more independent power sources provide the firing energy, allowing the weapon to damage or destroy ships in orbit. These weapon sites have limited fields of fire, but are very powerful.

Defensive Operations

Operations whose purpose is to defend against an enemy offensive operation.

Deflector Shield

Standard defense field for starships, based on the ability to alter gravitational effects across a plane perpendicular to the incoming threat. Deflector shields (also known as "shields") do not function safely or effectively inside a planetary atmosphere.

Defoliant

Any chemical compound used to kill plants.

Demilitarized Zone

An area of land, usually between two hostile countries, that no military forces are allowed to cross. A land based version of the Neutral Zone, if you will.

Demo

Slang for demolition.

Demolition

The process of destroying something, usually through the use of explosives.

Demolition Gun

Main weapon of the CEV. Fires a 175 mm HEP shell, destroying targets through explosive force. Used primarily to destroy obstacles and fortifications.

Demon

Slang for demolition specialist.

Denial Operations

Operations whose goal is to deny the enemy use of materials and supplies, usually those materials that are being abandoned by friendly forces.

Digger/Tunneler

The standard SFMC vehicle used to dig trenches, ditches and tunnels. It's nickname is "Mole".

Direct Fire

A method of weapon employment, where line of sight must exist between the firing weapon and it's target.

Ditch

A wide trench, used to obstruct the movement of ground vehicles.

DMZ

Abbreviation for Demilitarized Zone.

Dragon Teeth

Short pyramid shaped obstacles, made of concrete. Used to obstruct movement by ground vehicles.

Drawbar Pull

The amount of force a bulldozer can exert against a load of dirt or other material. Roughly, the amount of material it can push around.

Dry Suit

A suit worn by divers that keeps the wearer dry and warm. Usually used in extremely cold water, or in liquids that may be contaminated with pollutants like oil, etc.

Dump Body

The part of a dump truck that tips itself up, dumping the cargo onto the ground. It raises itself from the front, dumping the cargo out the rear of the dump body.

Duralloy

Extremely strong blend of metal alloys, used as standard construction material for metallic items like vehicles and some structures. Duralloy is not magnetic, nor does it rust.

Duranium

Extremely hard metal alloy used extensively in starship construction.

EAW

Abbreviation for Engineer Armored Worksuit.

ECM

Abbreviation for Electronic Countermeasures.

Electronic Countermeasures

Technique for countering enemy sensing and targeting attempts, through jamming, misinformation and distortion of their sensor signals.

Emplace

To put something into place.

Emplacement

Term for a fixed weapon or firing location. A gun emplacement, for example, is a permanent firing location for a weapon system mounted there.

Endoskeleton

A skeleton or framework that is inside of the body it supports. Humans and most other humanoids have endoskeletons.

Engineer Armored Work suit

Variation of the standard SFMC Powered Infantry armor suit, used for working in hazardous or non-standard environments.

Engineer Boots

Traditional footgear of all Combat Engineers. Black leather boots that extend to mid calf, with safety toes. Some versions come with square toes, some with rounded ones.

Engineer Mecha

A Mecha that has been modified to perform limited Combat Engineer tasks, particularly welding, construction and salvage.

Engineers

Slang for Combat Engineers. Sometimes confused with STARFLEET Engineers, which are not the same thing.

Eugenics Wars

Devastating wars that took place in Earth's history, as genetically engineered humans (who believed themselves superior to non-engineered humans) tried to conquer the world. They were led by Khan Noonian Singh (the same fellow you saw in the movie, Star Trek II: The Wrath of Khan).

Exoatmospheric Operations

Operations that take place outside of a planetary atmosphere.

Exoskeleton

A skeleton or framework that is outside of the body it supports.

Exotic Atmosphere

Any non-standard atmosphere that is composed of toxic, corrosive or high pressure gases.

Extensible Span

A length of bridging equipment that can extend itself over a certain length, bridging a gap.

Extruder

A mechanism that presses material through a small hole, called a die. This material forms wire or other long, flexible items.

Federation

Shortened form of United Federation of Planets.

Field

A group of related MOSs within a branch. Examples in the Combat Engineers are Survey, Pioneer, Sapper and Protected Forces.

Field of Fire

The area in front of a weapon that it can effectively engage. Turrets usually have 360 degree fields of fire. Fields of fire can be blocked by intervening terrain, like ridges or trees.

Fighting Position

A place that a specific vehicle, weapon team or individual fights from. Examples include a foxhole, revetment or bunker.

Firefight

Slang for any pitched battle involving ranged weapons. Generally implies lots of shooting, confusion and collateral damage to the surrounding terrain.

First World War

First of several world wide conflicts in Earth's history. This one started in 1914, and pitted the Allied powers against the Axis ones.

Fistrium

A refractive metal that standard sensors cannot penetrate. Commander Data (ST: TNG) was discovered inside some caverns composed of fistrium and kelbonite, which he theorized prevented the Crystalline Entity from scanning his location. This also prevented the orbiting starships from detecting the lab where he was constructed.

Flare

An incendiary device used to distract or decoy heat seeking missiles. The flare burns at a temperature hotter than the exhaust of the target vehicle, attracting the heat seeking missile away from it's original target.

Flechette

Small dart or needle sized projectiles, usually fired in a large group as an antipersonnel weapon. Flechettes are usually ineffective against armored vehicles and buildings. Flechette is pronounced "Flah-SHAY", and the plural is pronounced "Flah-SHAZE".

Flitter

One man AG propelled vehicle, used to dispense wire or cable.

Fogger

Slang for an ALA Smoke dispensing canister, similar in use to a grenade. These are 1 kg in weight and make a cloud 3 meters in diameter.

Force Field

A defensive technology, consisting of an energized field that that protects a target by deflecting, diverting or absorbing a certain amount of energy per millisecond. For simplification, these force fields are rated in strength from Zero to Ten.

Forging the Future

The motto of the STARFLEET Marine Corps Combat Engineer branch.

Fortifications

Anything that is constructed to provide cover and protection from enemy weapons. This can be as simple as a trench or as complex as a mountain fortress.

Foxhole

One or two man fighting position, usually composed of a hole in the ground and some form of cover to the front of the position. More elaborate foxholes have overhead cover and tunnels that connect to other foxholes.

France

European country that participated in all three World Wars. One of the Allied powers.

Fusion Plant

A small fusion based power generating unit. Not nearly as powerful as a M/ AM reaction, but still quite powerful.

Germany

European country that started two of the three World Wars. One of the Axis powers.

Grenade

Disposable explosive device, usually thrown by hand (hand grenade) or launched by a rifle or other projectile weapon (rifle grenade or RAM grenade).

Grenade Sump

Small hole at the bottom of a foxhole, into which enemy grenades will roll, detonating without injury to the foxhole's occupants. Pretty effective, unless filled with water.

Groundhog

Nickname for Armored Combat Earthmover. Also nickname for Combat Engineers and other ground units.

Gunpowder

Chemical propellant made of saltpeter, charcoal and sulfur. Used for centuries in rockets, small arms and cannons.

Hand Tools

Traditionally speaking, any man portable tool that requires only muscle power to operate. In the SFMC, this definition has been enlarged to include man portable power tools (chainsaws, hand welders, etc.).

Hardened

Term used to describe a building or fortification that has been constructed to resist damage from enemy weapons. This can be done by improving the design, using stronger materials etc.

Hard point

Point on a vehicle or fortification where weapon systems are mounted.

HEAP

Abbreviation for High Explosive Armor Piercing.

Heavy Weapons

Weapons designed to affect vehicles or large areas. In most cases they require more than one person to operate.

Hedgehog

A type of obstacle made of angle iron welded together to form a three axis cross. The name comes from a small Earth animal that is covered with quills.

HEP

Abbreviation for High Explosive, Plastic.

High Explosive Armor Piercing

A type of warhead that uses a shaped charge to penetrate armor, while retaining a blast effect.

High Explosive Plastic

A warhead made of plastic explosives, and which has a tremendous blast effect. Primary weapon of the CEV, used to destroy obstacles.

Hopper

One man AG propelled vehicle, used to emplace pickets, posts and other vertically oriented obstacles.

Incendiary

Anything that is used to start fires.

Indirect Fire

A method of weapon employment, where line of sight does not have to exist between the weapon and target. Usually involves high trajectory arcs, such as used by mortars and other artillery pieces.

Induction Module

A modification of a standard transporter array. The induction module converts material into it's component atoms, by translating them into energy (like a transporter does when it begins beaming someone up). Induction modules are paired with replicators and sophisticated computer systems to separate the various elements and reform them into more useful materials.

Inertia

Term for the tendency of a moving object to continue moving and a stationary object to remain stationary.

Infantry

Basic military unit, and the cornerstone of the SFMC organization. A separate branch of duty within the SFMC, as well.

Ingot

Term for a solid block of a metallic substance. Ingots come in three weights (10 kg, 25 kg, and 100 kg) and therefore vary in size depending on the density of the metal used to make up the ingot.

Ironmongery

Slang for vehicles, weapons and equipment used by an organization.

Isolinear Data Chip

Standard data storage device used by STARFLEET. They look like skinny, translucent plastic strips with circuitry embedded in them.

Jump Seat

A folding seat mounted in some vehicles, used for temporary passengers or extra crewmen.

Kelbonite

A refractive metal that standard sensors cannot penetrate. Commander Data (ST: TNG) was discovered inside some caverns composed of kelbonite and fistrium, which he theorized prevented the Crystalline Entity from scanning his location. This also prevented the orbiting starships from detecting the lab where he was constructed.

kg

Abbreviation for kilogram.

Kilogram

Standard measurement for weight used in the metric system. One kilogram is 1000 grams, or about 2.2 pounds.

Kilometer

Standard measurement for distance used in the metric system. A kilometer is 1000 meters, or about 0.6 miles.

Klingon/Klingons

Alien race seen regularly on all the various Star Trek series and movies. Have been allies and enemies over the history of the Federation. Excellent ground troops, if a little more direct than other races.

km

Abbreviation for kilometer.

Korean War

Conflict that took place in Earth's mid 20th century, in an Asian country called Korea. Severe weather made an already brutal war even more of a challenge for those who fought there.

kph

Abbreviation for kilometers-per-hour, a measure of velocity.

Krak Des Chevaliers

Possibly the best fortress ever constructed on Earth during the Middle Ages. It is located in what was known as Syria in the 20th century. The castle never fell to besieging armies, and only once through treachery and deception. It is a marvel of combat engineering of that time period.

Legion

Standard Roman military unit, consisting of between 600 and 1000 men. They were the world's most disciplined and effective infantry forces for hundreds of years.

Lethal

Deadly. Toxic. Bad stuff. Fatal, even.

Light-hour

A measurement of sunlight needed to recharge a battery pack. One light-hour is equal to one hour of direct sunlight striking the collector array. Not to be confused with a light second, which is a measure of how far light travels in one second.

Log Crib

A simple obstacle consisting of logs cut and stacked to form a box or triangle, which is then filled with rocks and dirt. These are effective against wheeled and tracked vehicles, especially in restricted areas like narrow mountain roads.

m

Abbreviation for meter.

M/AM

Abbreviation for Matter/Antimatter.

Magnetic Accelerator

Device that propels metallic objects at very high speeds, using magnetic fields. Variations of this are used as rail guns, etc.

Magnetic Grapples

Powerful electromagnets, mounted in manipulator arms and other devices. Used to grip magnetic materials like steel, etc.

Manipulator Claws

The two or three pronged "hands" used by robots and Heavy Duty Powered Exoskeletons to grip objects.

Manipulators

Mechanical equivalents to the human hand, which may use tentacles, claws or articulated digits to grip objects.

Marine Occupational Specialty

The specific "job" or function to which the individual Marine is trained to do. Groups of related MOSs are called Branches. More info about MOSs can be found in the MOS Handbook.

Materials Processor Platform

Vehicle used by the SFMC Combat Engineers to replicate building materials and other useful items, using locally reprocessed raw material.

Mediterranean Sea

A body of water on Earth, bounded by Africa to the south, the Middle East to the..well, east, and Europe to the north.

MegaCorporations

Huge industrial conglomerates of the 21st century, responsible for much of Earth's early colonization efforts and rebuilding of civilization after the devastating Eugenics Wars. Funded the Colonial Marines.

Meson Gun

An energy weapon that fires high energy mesons at a target. The weapon generates high energy mesons which are accelerated to near light speed, entering hyperspace as they leave the weapon. These meson particles decay rapidly, reentering normal space and exploding as they contact other particles of matter. By adjusting the amount of energy and muzzle "velocity", it is possible to arrange things so that the meson particles reenter normal space inside an enemy vessel, bypassing shields and armor altogether. Meson guns are extremely large and delicate, and require huge amounts of power.

Metallic Ribbon

Form of wire obstacle, consisting of a flat ribbon of razor sharp metallic alloys, which can easily be dispensed from a dispenser that resembles a large tape measure. The ribbon is twisted as it leaves the dispenser, making it dangerous to handle once dispensed.

Meter

Measure of distance, the standard on which the metric system is based. One meter equals 39 inches, or one yard plus three inches.

Microgravity

Correct term for areas of extremely low gravity. (There are no naturally occurring areas of "zero-gravity" since everything exerts some pull on everything else.)

Microweapon

Term for microscopic or smaller artificial weapon systems, like nanites.

Mine

Explosive device that is used to incapacitate or destroy personnel and vehicles that trigger it. Mines can be set to detonate through an almost infinite variety of methods. Some common examples include pressure, heat, magnetic fields, sound and vibration.

Mine Warfare Vehicle

Standard SFMC Combat Engineer vehicle used to emplace and remove mines.

Minefield

An area containing many mines, either on the surface or below it. This can vary in size, complexity and density of coverage.

mm

Abbreviation for millimeter.

Module

Term for a component or subsystem of a vehicle or other equipment that can be removed or replaced as a single unit.

Mole

Nickname for the Digger/Tunneler used by the SFMC Combat Engineers.

Molecuwire

Trademark name for Sinclair Molecuwire. A single molecule thick polymer chain, used as an antipersonnel/antivehicular obstacle. Very deadly, and difficult to emplace or counter.

MOS

Abbreviation for Marine Occupational Specialty.

Moslems

Followers of the religion of Islam, who fought the Christians during the Crusades.

Motto

A phrase or saying that sums up an organization's motivation, history or purpose. Usually in some foreign language, and formally phrased.

MOUT

Acronym for Military Operations on Urbanized Terrain.

mph

Abbreviation for miles-per-hour.

Mule

Nickname for the standard cargo hauling vehicle used by the SFMC. A one man AG propelled vehicle, which has many variations in body design.

Nanite

Microscopic robot, programmable to perform all kinds of work. Medical versions are used to clear blood clots, repair blood vessels and other extremely delicate tasks.

NBC

Abbreviation for Nuclear/Biological/Chemical.

NCO

Abbreviation for Non Commissioned Officer.

Nitrium

Extremely tough metallic alloy used to line power conduits, M/AM reaction chambers and other high energy storage areas.

Non Commissioned Officer

A Marine who holds a grade of rank of E5 through E-9, and who is charged with duties which assist and complement officers in the discharge of their own.

Non-skid Surface

A semi-abrasive coating which is applied to surfaces, to prevent an object from sliding easily along/off of it.

Nuclear/Biological/Chemical

Another term used to describe three weapons of mass destruction. It refers to chemical agents (nerve gases, etc.), biological weapons (bioengineered viral plagues, etc.) and nuclear weapons (also known as atomic weapons).

Obstacle Plan

The detailed "master plan" of all obstacles in a given area, used by Combat Engineers to allocate men and equipment in their construction.

Obstacles

Anything that hampers, disrupts or interferes with an enemy's movement.

Offensive Operations

Operations whose purpose is to damage or destroy an enemy's forces, and/or gain control of territory or material.

Orbital Bombardment

Term used to describe one or more starships firing weapons or dropping ordnance on a planetary surface. Unless the planetary defenders have weapons capable of reaching into orbit and damaging a starship, they are pretty much helpless. Orbital bombardment is not very precise, but can effectively destroy the surface of a planet in days or even hours.

Ore

Term used to describe unprocessed rock that contains metals.

PD

Abbreviation for a Point Detonating fuse.

PECM -1

Abbreviation for Personal Electronic Countermeasures Device, Model One.

PECM Unit

The standard individual "electronic camouflage" device issued to all Marines. It helps conceal the wearer's exact sensor location, by blending, distorting and blocking sensor signals. Some versions are built into weapons or helmets, others are clipped to the Marine's equipment harness. No more than one PECM can be operating at one time in a given area of effect.

Penetrating Delay

Type of fuse that delays a warhead detonation after impact, allowing the warhead to (hopefully) penetrate deeper into the target before exploding. Used against underground targets and bunkers, mostly, although it works against buildings and light armored vehicles to a certain degree.

Phaser

Acronym for Phased Rectification of Energy.

Phaser Array

The entire weapon system, including focusing lenses and targeting systems, used to fire a vehicle or installation mounted phaser.

Phaser Battery

Term used to describe a multiple emitter phaser array, synchronized to fire on the same target at one time. Usually refers to planetary emplaced phaser arrays.

Pioneer

Combat Engineer trained to perform his duties with a minimum of heavy equipment, relying instead on portable hand tools.

Planetary Defense Site

Weapon installation designed to engage orbital targets, like starships. Usually underground, well hardened and with multiple independent power supplies.

Plastalloy

A very strong, but lightweight metallic plastic. Non magnetic, does not rust.

Plastic Explosive

Malleable explosive compound that can be molded into various shapes for maximum effect. Cannot be set off by heat, pressure or electricity. Very stable. The most common version of plastic explosive used by the SFMC is known as C9, or Composition Nine.

Point Detonating

A type of fuse that detonates an explosive warhead immediately upon striking something.

Polysteel

Blend of various metal alloys, resembling 20th century stainless steel, although more resistant to rust and Polysteel is magnetic. A very common building material.

Pontoon

Inflatable bridging section resembling a plastic and transparent aluminum raft. Connected in groups to form bridges. Very lightweight and can be filled with a foam that hardens within an hour to make the pontoon section permanent.

Power Cell

An advanced form of battery, used to power small electronic devices and weapons.

Powered Infantry

The standard Heavy Infantry forces of the STARFLEET Marine Corps. They wear powered armor suits that make them stronger and harder to kill than light infantry, as well as mounting heavier weapons.

Protected Forces

The group of MOSs in the Combat Engineers that is trained extensively in operations within hazardous or nonstandard environments like underwater, deep space, etc.

Proximity Detonating

A type of fuse that detonates a warhead when the warhead gets within a certain preset distance to any object.

PT

Abbreviation for a Penetrating Delay fuse.

Pulse Phaser

A phaser that fires rapid bursts of energy at a target, increasing it's chances of a hit at the cost of some of it's destructive power.

Purification

The process of removing harmful or unwanted substances from water or other materials.

PX

Abbreviation for a Proximity Detonating fuse.

Razor Tape

Another term for metallic ribbon.

Recon

Slang for reconnaissance.

Reconnaissance

The process of scouting for information on an area, especially as relating to enemy presence.

Reflective

Any material that reflects light or other directed energy back at the source. A mirror is reflective.

Refractive

Any material that refracts light or other directed energy way from itself, usually in multiple directions or wavelengths. A prism is refractive.

Replicator

Device that creates duplicates of original items from patterns stored in memory, using transporter technology to assemble the item one molecule at a time.

Replicator Bay

A large scale replicator, used for creating large or bulk items.

Reprocessor

A combination unit consisting of an induction module and a replicator. Raw materials are fed into the induction module and broken down into component atoms. These atoms are then rearranged into useful materials, one molecule at a time by the replicator. Unused material is ejected in the form of ingots, or stored internally for later removal.

Respirator

Device that provides breathable air when worn. Usually comes in the form of a lightweight face mask and small tank that clips to the belt or back of the collar.

Ripper Attachment

A sturdy Polysteel plow-hook, mounted behind a dozer, used to break up hard packed earth.

Road Crater

Simple obstacle created by using explosives to blow a very large hole in a roadway, blocking it's use to wheeled vehicles.

Rodinium

One of the hardest metals known to Federation science. Outposts along the Romulan Neutral Zone were constructed of cast Rodinium.

Romulans

Alien race that was regularly seen on Star Trek: TNG, DS9, VOY, & ENT. Hostile at times to the Federation. They use cloaked ships and disrupters as standard technology.

Route Reconnaissance

The process of scouting a planned travel route, examining the road and any bridges for proper construction, enemy mines, etc. One of the functions of the Survey field of MOSs.

RPV

Abbreviation for Remotely Piloted Vehicle.

Salvage Operation

Any operation intended to recover all or a portion of some damaged equipment or materials.

Sapper

A Marine who has been trained extensively in the creation and removal of obstacles, especially using hand tools.

Sappers

Field of related MOSs within the Combat Engineer branch, relating to the use and employment of explosives as well as the breaching of obstacles.

Scenario

A hypothetical situation, created or discussed to examine the consequences of one's possible actions in that situation.

Scraper/Grader

Standard excavation vehicle used to level an area of ground.

Screens

Slang for force fields.

SCUBA

Acronym for Self Contained Underwater Breathing Apparatus.

Second World War

Second of Earth's global conflicts, pitting the Allies against the Axis powers.

Sectis

The first planet invaded by the Romulans during the Romulan War, and the first place the SFMC suffered casualties in that war.

Siege Engine

Primitive artillery and other mechanisms, used to attack a fortified castle during the Middle Ages.

Self Propelled Gun

Term for a mobile artillery piece. These fall under the Armor branch in the SFMC.

Sensor Mast

Specialized antenna used on some construction vehicles to receive data from a survey beacon.

Sensor Signature

The signal or emissions that personnel or vehicles give off, which can be detected by enemy sensing devices. This can be heat, electromagnetic, acoustic or some other form of energy.

Simple Obstacle

An obstacle that has not been improved by the addition of mines or combining it with other obstacles.

Simple Polymer Barbed Line

The 24th century version of common barbed wire. It is made of twisted strands of high tensile strength plastic wire, with inline molded barbs every 10 cm (4 inches) of line.

Sinclair Molecuwire

Trademark name for the standard SFMC single molecule thick polymer chain, used as an antipersonnel/antivehicular obstacle. Very deadly, and difficult to emplace or counter.

Single Molecule Polymer Strand

Technical term for Molecuwire.

Slit Trench

Narrow trench that has enough room for one man to lie in it, affording a minimal level of cover from enemy fire. Slit trenches are the fastest individual fortifications that can be constructed, taking less than a minute for a trained Marine.

Slogan

A word or phrase that reflects the morale, esprit de corps, and motivation of an organization. Usually something informal and short, like the Combat Engineers use of "Can Do!" as their slogan.

Smoke Screen

Term for a cloud of ALA smoke, used to block vision and directed energy weapons fire. Usually refers to a large amount of ALA smoke, dispensed by a vehicle.

Solar Panel

Photovoltaic cells arranged in a large flat sheet, used to convert sunlight into electrical current, which is then used to power devices or charge batteries.

Soviet Union (Soviet)

One of the superpowers of the 20th century, and an adversary of the United States.

Spaced Ceramic Composites

Type of armor designed to reduce the effectiveness of high energy weapon impacts and incendiary weapons. Consists of specially blended ceramic composites, formed into two or more layers of honeycombed plating. The spaces in the honeycomb pattern help dissipate and reduce electrical and thermal concentrations.

Spacesuit

Protective garment worn in outer space. Soft and flexible, except for the helmet. Breathing gases are supplied by an integral (and rechargeable) life support unit, housed in the suit's chest pack.

Span

The length of a bridge or other extended platform.

Special Operations

Any operation that is not considered routine, common or standard when speaking of the SFMC as a whole. CBR Decontamination is an example of a special operation.

Spy Eye

Slang for an RPVA.

Standardization

A method of increasing an organizations efficiency, by standardizing equipment, uniforms and policies. This prevents confusion, eases the logistical burden for replacement parts and limits incorrect identification of personnel.

STARFLEET

Short form of STARFLEET, The International Star Trek Fan Association, Inc. The world's largest fan run fan club, and the parent organization for the STARFLEET Marine Corps.

STARFLEET Marine Corps (SFMC)

The STARFLEET Marine Corps is a component of STARFLEET, the International Star Trek Fan Association Inc. The SFMC is an office under the Commander, STARFLEET and as such reports to Commander, STARFLEET. The SFMC is part of the Ground Forces that are rarely seen in the episodes but are assumed to be a part of the Naval Fleet of the United Federation of Planets.

Storm Surge

Term for the destructive action of waves and wind that occurs during severe storms and hurricanes.

Strongpoint

A fortified fighting position, critical to the defense of an area. Usually a bunker or heavy weapons position.

Stump Rows

Another name for a belt-of-posts obstacle.

Subsurface Operations

Operations that take place below ground level.

Subterranean

Three credit word for "underground".

Survey

One of the fields in the Combat Engineer branch, concerned with the gathering of data concerning terrain, enemy presence and weather.

Survey Beacon

Transmitter used to indicate precise height and other data to nearby construction vehicles.

Survey Drone

Remotely piloted vehicle, used to conduct aerial or subterranean reconnaissance while the operator remains safely out of the area.

Surveyor

Marine trained in the science of gathering data that can be used to make accurate maps and building plans.

Synthahol

Synthetic substitute for alcohol, invented by the Ferengi. Does not cause harmful side effects like hangovers, but will intoxicate you. Not as flammable as real alcohol.

Tanglefoot

Wire or other similar material that is stretched out in random patterns, and fixed to short stakes in the ground. It is difficult to see in anything but very short grass, and can cause a running or walking man to stumble and fall. Usually mined or alarmed. Tanglefoot made of Molecuwire is extremely deadly as it is hard to see, and can maim or kill anyone who runs or crawls into it.

Target Reference Point

A location that is preplotted by artillery, so that it can be accurately be fired upon at a later time (like after the enemy has set up camp there...)

TDX

Gravitational polarized explosive. More than 75% of it's explosive force is exerted in a horizontal plane, which makes it useful for cutting down trees, tanding infantry and other vertical obstacles. It's effect varies depending on the planetary gravitational field. Somewhat unstable, compared to other forms of explosive such as C-9.

Terminium

Strong energy resistant alloy used to make photon torpedo casings. Spock's coffin was made of it in, as shown in Star Trek 2: The Wrath of Khan and Star Trek 3: The Search for Spock.

Terraforming

The process of rendering an uninhabitable planet into a habitable one.

Theragen

Klingon nerve gas, which forms the basis for several other deadly variants such as chlortheragen. A very diluted form of it was used by Doctor Leonard McCoy as a means of preventing madness from spatial interphase, during the Enterprise's encounter with the Tholians.

Thermal Lance

Hand held welding unit modified into a short ranged, but powerful energy weapon. A standard field modification made by nearly all Combat Engineers.

Third World War

Last of Earth's global conflicts, taking place during the mid 21st Century. More than 37 million people were killed.

Ton, Metric

Measure of weight, equal to 1000 kilograms.

Tongue Twister

Ancient American activity, analogous to achievement in alliteration.

Tonka

Nickname for the Dump Truck (Light Duty). Comes from an ancient Earth toy company, which specialized in construction vehicle toys. In many Combat Engineer units, the drivers of these vehicles paint them bright yellow as a 'tip of the hat' to this nickname, and as an indication of their courage (most vehicles use some form of camouflage paint scheme, so a bright yellow one will draw more fire from the enemy).

Tool Harness

The traditional uniform accessory for Combat Engineers, worn with the Class C uniform. Consists of a black web belt and shoulder straps, from which various tools and equipment are attached.

Toranium

A strategically important metal, originally discovered in Cardassian space. Impervious to standard phasers, requiring a bipolar torch or better to cut.

Tornado

Localized weather pattern made up of extremely high velocity winds, circling in a narrow funnel shaped cloud. Wind speeds in tornadoes have been recorded as high as 330 mph.

Tower, The

The symbolic logo of the Combat Engineer branch, signifying the strength of solid construction and the defensive nature of our work.

Tracked Vehicle

A vehicle which uses linked metallic tracks for suspension and propulsion, instead of wheels or AG units. Tanks and bulldozers of the 20th century had tracks, as a general rule.

TRACOM

Acronym for STARFLEET Marine Corps Training and Doctrine Command.

Transporter

Standard equipment on most starships. Transports personnel and cargo by dematerializing them into energy, beaming the energy to a receiving point and then reconstructing them into their original state.

Transporter Array

The actual mechanism used to conduct transporter operation, consisting of a dematerialization unit, a pattern buffer, and an emitter.

Tricorder

Standard hand held sensor unit, used by the Federation.

Troll

Nickname for the ABLV.

Truck, Dump

Standard vehicle used to haul dirt, rubble and other dry bulk materials. The cargo area tilts up to empty itself, hence the name "dump" truck.

Tunnel Rat

Nickname for RPV-B. Also a nickname for anyone who specializes in underground operations.

Tunneler

The standard Combat Engineer vehicle used to create tunnels and ditches.

Turret

A rotating hard point, containing weapons and/or sensor systems. Turrets usually have 360 degree fields of fire, and are well armored. They are usually on vehicles, but may also be found in some fortifications such as bunkers.

United Federation of Planets (UFP)

An alliance of approximately 150 planetary governments and colonies, united for mutual trade, exploratory, scientific, cultural, diplomatic and defensive endeavors. Founded in 2161.

United Nations

An organization of nation-states on Earth, created during the 20th century. It's focus was on international peace and cooperation.

United Nations Peace Force (UNPF)

Military forces of the United Nations, charged with peacekeeping duties and defense of Earth against aggressors.

United States of America (USA)

Nation on Earth, founded in 1776, and that world's first large scale experiment in representational democratic government. The United States was responsible for many of Earth's early achievements in space exploration.

UNPF Marines

A historical Marine organization, one of the predecessors of the STARFLEET Marine Corps.

US Army Corps of Engineers

The combined Engineer organization of the 20th century United States of America. It combined active duty military Combat Engineers, military reservists and civilian engineers.

Utility Belt

Standard black web belt with attached tools and supplies, traditionally worn by SFMC Combat Engineers.

Vietnam War

War fought on Earth during the 1960s and 70s, in southeast Asia.

Wet Suit

Rubberized suit worn by divers to retain body heat and provide limited protection from abrasion and punctures. The name comes from the fact that the diver's skin is wet while wearing the suit, unlike a dry suit. Wet suits are very thin, 1 to 5 mm in most cases, which is much less bulky than a dry suit.

Wheeled Vehicle

A ground vehicle that uses wheels instead of tracks or AG units as it's primary method of suspension.

Winch

Device consisting of cable wound around a motorized revolving drum. A winch is used (along with a block and tackle in some cases) to lift or pull items. Winches are normally mounted to the front or rear of a vehicle.

Wolverine

Nickname for the Combat Engineer Vehicle.

Woodchuck

Nickname for the Material Processor Platform.

World War 1

First of Earth's global conflicts, as Germany tried to conquer Europe and eventually drew most other nations into the fight.

World War 2

Second of Earth's global conflicts, pitting the Allies against the Axis powers.

World War 3

Last of Earth's global conflicts, taking place during the mid 21st Century. More than 37 million people were killed.

XenoBotany

The study of alien plant life.

XenoZoology

The study of alien creatures.

Zero-g

Slang for areas of very low gravity.

Zoot Suit

Slang for Combat Environment Suit.

Suggested Reading

THE ARMY ENGINEER MAGAZINE

Non-fiction, ISSN 1084-4236. This excellent magazine is published six times a year by the non-profit Army Engineer Association (AEA). Their address is Army Engineer Association, PO Box 30260, Alexandria, VA, 22310-8260. Non-AEA members may purchase a copy for \$2.50, if copies are available for sale.

THERE WILL BE WAR: CALL TO BATTLE

(Volume VII of the "There Will Be War" series), specifically the story "Iron Angel" by Don Hawthorne. This excellent series of books is edited by Jerry Pournelle, and has many non-fiction essays and articles as well as military science fiction. I cannot recommend it highly enough. Fiction, ISBN 0-81254963-5 (Canadian ISBN 0-812-54964-3). The entire series of books (over 12 volumes last time I checked) is available from TOR Books, which are published by Tom Doherty Associates, Inc., 49 West 24 Street, New York, NY 10010

"TO THE LAST MAN.."

A non-fiction book about the 10th Engineer Battalion in the Korean War, written by the men who were there. Available from the Army Engineer Association Regimental Store (their order form is in each issue of the Army Engineer Magazine).

"51ST AGAIN"

A non-fiction book about the 51st Engineer Battalion of World War 2 fame. Available from the Army Engineer Association Regimental Store (their order form is in each issue of the Army Engineer Magazine).

SUGGESTED VIEWING

ALIENS

Excellent all around futuristic Marine type flick; this is where we developed the model for the Powered Exoskeleton (Heavy Duty). You can see it (the way the SFMC uses it) in the beginning of the movie, where Ripley picks up some cargo and moves it around, and again in the final fight scene of the movie.

OTHER MATERIAL

THE US ARMY CORPS OF ENGINEERS BRANCH SONG

Audio tape, produced by the AEA. Contains instrumental and vocal versions of the traditional US Combat Engineer branch song "Essayons", as well as a oral history of the branch (given in the form of a ceremonial toast). Excellent for formal dinners, presentations, etc. and inspiration for role-playing our own branch.

References

The following references were used in creating this guidebook, as well as the personal experience of the author(s) and interviews with members of the real world US Army Corps of Engineers.

- US Army Field Manual, 5-101, Mobility
- US Army Field Manual, 5-102, Counter mobility
- US Army Field Manual, 5-103, Survivability
- US Army Field Manual, 5-25, Explosives and Demolitions
- US Army Field Manual, 5-15, Field Fortifications
- US Army Field Manual, 5-34, Engineer Field Data
- US Army Field Manual, 5-36, Route Reconnaissance and Classification
- US Army Field Manual, 20-32, Mine/Countermine Operations at the Company Level
- US Army Soldier Training Publication, 31-18-SM-TG, CMF 18 Basic Tasks
- US Army Engineer School, various courses, most notably EN 501 and EN 502 (Combat Engineer I and II)
- Combat Leader's Field Guide, 9th Edition, (Stackpole Books, 1980)
- Combat Leader's Field Guide, 10th Edition, (Stackpole Books, 1987)
- Combat Leader's Field Guide, 11th Edition, (Stackpole Books, 1994)
- Star Trek Encyclopedia (Pocket Books)
- Star Trek Omnipedia (Paramount Pictures Corporation)
- Star Trek: The Next Generation Technical Manual (Pocket Books)
- SFMC Marine Forces Manual 2005 Edition
- SFMC Arms and Equipment Manual
- SFMC MOS Handbook

Designer's Notes

This manual is the third edition of the Combat Engineer Branch Manual, revised by BGEN Chris Esquibel in September 2005 and to date, this manual holds true to COL Kelly's original concepts of this branch back in 1997. The members of the corps appreciate and thank you for the work these branch directors, like Matt Kelly did in creating these manuals. SFMC & TRACOM will strive to continue to add and advance our knowledge in this area in order to better train the men and women of the future.

SEMPER FI

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About SFMC Academy



The Starfleet Marine Corps Academy was established by Commander Starfleet in 2164 when it was determined that Starfleet Academy could no longer adequately meet the needs of both services. The historical home of the United States' Navy and Marine Corps academies, Annapolis, was selected as the new home of the SFMCA. The head of the Academy, known as Director SFMCA (DCO - Academy), is still headquartered at the main campus in Annapolis.

The motto of the SFMCA is "Facta Non Verba" or, in Federation Standard, "Deeds not Words." This is reflected in the more informal academy slogan, "We lead by example... whether we mean to or not."

The Director SFMCA reports to the Commanding Officer of the Training Command (COTRACOM) who, in addition to the SFMCA, oversees branch schools, enlisted personnel training, advanced technical schools, and periodic skill re-fresher courses. Most of these courses are held either at one of the SFMCA facilities, or at one of the many training facilities in the New Valley Forge system which is home to TRACOM. These facilities, together with an Oberth-class spacedock serving as TRACOM headquarters, comprise Station Valley Forge.

Today, the SFMCA consists of 5 campuses, 8 training worlds, and 42 ranges and field courses throughout the UFP. Together with Station Valley Forge, the SFMCA comprises one of the largest and most advanced military training organizations in the known universe.

