

# Engineer's Guide to the Galaxy

ENGINEER'S GUIDE TO THE GALAXY BASIC ENGINEERING MANUAL V: 02A-310208

## I. INTRODUCTION

*"Technicians keeps the ship and its accessories in working order and make repairs after the ship is damaged."* - [Star Army Technician](#)

A starship —such as those found on a [starship](#)— is a large, complex piece of equipment, comprised of several dangerous and volatile [systems](#) which, if left to run unattended, would very likely degenerate to the point of self-destruction (or worse) within the span of a week. The humble technician ensures that these systems remain operational using both routine scheduled maintenance and emergency maintenance, and furthermore it is the technician that advances [Yamataian](#) technology with ingenious skill so that we remain ahead of our contemporaries in other services.

It is, in short, engineers who keep the Empire alive today. It is a grave oversight that the Empire does not award medals specifically for excellence in this important field, but such is the life of a technician!

This guide is designed for the Heis and the Heishos of the Technical Profession. It is not meant to be read by the officer, who need not know how close she is, minute by minute, to becoming a sub-atomic dust particle cloud, nor need it be given account by the casual reader, or those whose existence is pleasantly bereft of the heat, the sound, and the peculiar calm of a properly manned engineering space.

It is instead meant for those whose lives are short, bereft of all light, and potentially both underpaid (formerly, unpaid - see YE31 SLAVERY LAW) and miserable.

## II. Engineering Basics

Below are the basics of engineering to be discovered first through an overview.

### Overview

The duties of a technician on a starship of the [Star Army of Yamatai](#) consist of maintaining the ship's [combat readiness](#), and making everything better when the excrement hits the fan.

The term 'Engineer' encompasses a wide variety of jobs and professions, so many that new engineers can be daunted by them. Traditionally, when most people think of an engineer, they tend to picture the ratchet-turner with the goggles and a peculiar magnetic field which attracts, against all logic to the contrary, oil. This is not always the case; although the main engines and generators need regular monitoring, maintenance, and repair, the technician field of study is much broader and encompasses all

ship systems. When a power cable shorts out, an electrical technician is usually the one crawling through the maintenance tunnels to replace it. When the waste water recycling tank starts burping green pus, a utility technician is often on-scene (with appropriate chemical and smell-resistant attire). When the Tactical panel on the bridge starts displaying [Mishhuvurthyar](#) vessels in fluorescent red and green while singing Christmas carols, a computer technician is usually there to solve the problem, or at least provide complimentary eggnog.

In other words, while all engineers are expected to know everything (many brains are digital and technical manuals are free), not all engineers are expected to *know* everything. Part of the job is thinking on one's feet and being flexible in thinking.

## Common Duties

For we get to engineering duties, something should be mentioned about the behavior engineers should have as professionals. It is vital that an engineer know and understand guidelines or rules for the organization he or she works for (This usually means any rules set out by the GM and FM of the plot your in). Beyond this, each different field of engineering has its own unique set of professional ethics. Combined with an engineering Code of ethics, these rules are the guiding force that help decide what an engineer should do in a particular situation.

## Maintenance and Repair Basics

*A basic and general overview of repair and maintenance of starship parts, how to make materials, leading to a more in-depth page.*

The fundamental concept of engineering is using science to solve practical problems. Often you will be tasked from fixing impossible things in impractical limited resource situations to building MacGyver defense/attack Senteries from mere-junk. You build things out of the SARP common materials usually using tools defined by your faction. For using Shees see *Shields*.

Besides the basic repair concepts, engineers should be well versed their teams procedures and tactics especially on duty. All Engineers should also be prepared for possible [space combat](#) and should be familiar with the logistics side of such combat. So that every engineer is prepared for the heat of battle, they should be familiar with starship or base's interior structure including location of all emergency systems and location of supplies. For practice engineers can use the [Random Starship Damage Generator](#).

## Advance Tactics

For ground mission it good for Engineers to brush up on [Military Assault of a Planet](#) for both offensive and defensive scenarios.

## Engineering Specialties (Jobs)

*This will go into more detail about specialties; I.E., Electricians, Propulsionists, Weapons and Computer Specialists, and so-on.*

### Quarter Master

A Quarter Master is the engineering specialty that worries about supplies, ammunition, and repairing all vehicles and starships. Typically this special job can be done by the Lieutenants, Head Engineer, and Warrant Officers. Normally the Quarter Master specializes typically in four or three of the other Engineering specialties, while staring engineers and NPCs typically specialize in one or two.

### Equipment and Supply Pages

- [International Starship and Cargo Standards](#)
- [Military Equipment](#)
- [Lorath Equipment](#)

### Machinists (Field Tech)

A Machinist specializes in engineering of electronics, weapons, machines, and biophysics. Typically they specialize in repair and maintaining vehicles, power armors, mechs, and making weapons. Machinist are also known as Field Techs since they are often on the front lines along with Technicians. This is because they are most advantageous in Troops of Soldiers or Power Armor Squads. Most second level officer rank machinist specialize is in making makeshift ranged weapons and makeshift vehicles from found junk and enemy parts.

### List of Vehicles

- [Complete List of Ground Vehicles](#)
- [Complete List of Power Armors and Mechs](#)
- [Abwehran Vehicles](#)
- [Abwehran Power armors](#)
- [NMX Power Armors](#)
- [NMX Ground Vehicles](#)
- [Nepleslian Power Armors](#)
- [Nepleslian Ground Vehicles](#)
- [Star Army Ground Vehicles](#)
- [Star Army Power Armors](#)
- [UOC Ground Vehicles](#)
- [UOC Power Armors](#)

## List of Firearms

- [Standard Firearm Terms](#)
- [Abwehran Small Fire Arms](#)
- [Complete list of fire arms and combat gear](#)
- [NMX Small Fire Arms](#)
- [Nepleslian Small Fire Arms](#)
- [Star Army Small Fire Arms](#)
- [UOC Small Fire Arms](#)

## Technicians (Tech)

A technician specialized in engineering of electronics, computers, communication, and shields. They are typically knowledgeable in quantum computing, computing, optics, acoustics, nanotechnology operation, digital-signal processing (DSP), thermodynamics, other electromagnetic sciences. They can repair most of the electronic systems in starship electronic systems including AIs, communication systems, shield systems, and electronic warfare systems. Most second level officer rank technicians can specialize in makeshift communication devices, makeshift cyber-augmentation, makeshift electrical explosives, and/or other electronic warfare.

## List of Misc Products

- [List of Miscellaneous Products](#)

## List of Electronic Equipment

- [Electron Countermeasure](#)
- [Star Army Electronics](#)
- [Nepleslian Electronics](#)
- [Mass Mesher Device](#)
- [electronics](#)
- [electronics](#)
- [computing\\_technology](#)

## List of Drones

*This list intentionally does not include any drone that is also a starship in its own right.*

- [The Grinder](#)
- [Remote Medical Drones](#)
- [Rill](#)
- [Star Army Drones and Robots](#)

- [Nodal Support Bits](#)

## Armorist (Repair Tech)

An Armorist or Material Science Engineer specializes in the engineering of materials, structures, and chemistry. They are typically knowledgeable in Biochemistry, Polymer Science, Inorganic Chemistry, Solid State Atomic Physics, Material Science, Nanotechnology, Architecture, and other construction and fabrication methods. All Hulls including Shuttles and Fighters. Along with a ability to fabricate and repair things at ungodly speeds, most Armorists tend to specialize in makeshift material modification/invention and makeshift [:list\_of\_general\_melee\_weapons|melee weapons]] or tend to specialize in makeshift demolitions.

### List of Common Materials in SARP

This list includes both the standard starship armors and other materials used in SARP. A starting Armorist *knows only the materials specific to their faction or army; they are also the only kind he can build rapidly* For Starships most of the materials can be found here [List of Starship Armors](#). Those that are not on the list above, for various reasons, are listed below:

- [Custom Clothing Materials](#)
- [Cerocrete](#)
- [CSEIA Energized Tungsten Armor](#)
- [Endurium](#)
- ["Failover" Damage Control System](#)
- [NAM Fluctuating Pigmentation Coating "Snakeskin"](#)
- [Stone Thread](#)
- [Star Pillow's feathery material](#)
- [Strodirm](#)
- [SythSetae](#)
- [High-dEnsity Conductor-laced Atibium Crystal](#)
- [Veyrinite](#)
- [Yarvex](#)
- [Yarvex Foam](#)

### List of Fabrication and Repair Devices

#### Universal

- [Star Army CASTER Tape Dispenser](#)
- [Matter Collection System](#)
- [Portable Repair Kit](#)
- [Utility Goo](#)

#### Faction-Unique

- [The Grinder](#)
- [Handheld Plasma Cutter](#)
- [Na-G2-01a Medtech/Terratech TEK](#)
- ["Mobile Spanner" Drone](#)
- [Standard Star Army Fabrication Area](#)
- [Star Army Tool Locker](#)

## Starship Engineers (Propulsion and Reactor)

Propulsion and Reactor Engineers specialize in engineering of reactors, quantum mechanics, aerospace, propulsion, shields. Thus they typically are knowledgeable in aerodynamics, electromagnetic physics, FTL propulsion, nuclear physics, atomic solid state physics, quantum mechanics, plasma physics, statistical mechanics, shield engineering, and other sciences related to reactors or propulsion.

### List of Ships Compartments

Generally all SARP starships can be found at [Starships](#); however, fighter and bombers can be found at [List of Aerospace Craft](#).

- [List of Starship Systems](#)
- [NMX Ship Compartments](#)
- [Nepleslian Starship Systems](#)
- [Star Army Ship Compartments](#)
- [Star Army Starship Systems](#)
- [Abwehran Ship Components](#)

### List of Engineering Bays

- [Ascendancy-class Engineering Section](#)
- [Ahmida Engineering Bay](#)
- [Iroma Engineering](#)
- [Lorath Engineering Monitoring](#)
- [MFY Engineering](#)
- [Star Army Engineering](#)

## Engineering Department Structure

*This will explain the chain of command utilized by engineering on most star-ships. It will be a general structure rather than a precise one. Point of reference will be the YSS Miharū, YSS Eucharis, and YSS Senbu*

## Chief Engineer

Engineering aboard starships is most often headed by a “Chief Engineer” - an Officer or Warrent Officer who has either a specialty in Engineering, or several years experience on-board the specific class of ship. The Chief Engineer is responsible for the maintenance and condition of the entire ship, top to bottom. She reports directly to the ship's Captain, but is required to keep the First Officer informed. The chief engineer reviews and authorizes all maintenance, fabrication, and work requests aboard the ship. If the ship is not capable of producing its own parts for whatever reason, the Chief Engineer is also responsible for submitting the work request to an outside entity and supervising the work or repair in question. Other responsibilities include drafting the watch-bills for the engineering department, approving all requests for leave and liberty, maintaining correct and updated technical data entries, ensuring that the crew is provided proper damage control equipment, recommending her technicians for advancement, and assuming any peripheral duties that the Captain of the vessel deems fit.

Most Star Army ships, due to their size, only require one Chief Engineer. However, she is authorized to delegate her responsibilities as she sees fit, with the exception of damage control. Most Chief Engineers choose to delegate, if not only to relieve the stress of the job somewhat, but also to reward their Technicians and provide them with training and valuable experience. A good Chief Engineer looks after her soldiers.

During combat, the Chief Engineer takes command of damage control and firefighting efforts, prioritizing and directing repairs from either the bridge or main engineering. She maintains a damage control plotting with information viewable at both stations, and keeps the Captain or First Officer informed of ship status at all times, or when requested.

Notable Chief Engineers; - Shosa [Kage Yaichiro](#), Former Chief Engineer, [YSS Eucharis](#) - Mike Quakenbush, Chief Engineer, [SS Raider](#) - Santô Juni [Tom Freeman](#), Chief Engineer, [YSS Miharu](#) - Nitô Hei [Katsuragi Suzaku](#), Senior Engineer/Technician, [YSS Senbu](#)

## III. Main Propulsion

### FOLD THEORY



*Explaining, in general, the concept of fold, and the distortion drive and combined field system, with appropriate references cited.*

In Star Army, the concepts of folding through hyperspace to go faster-than-light, distorting the space-time continuum to go faster-than-light, or traversing wormholes not only differ between races but between ships of the same fleet as well. This primarily due to the fact that many people have different interpretations of how hyperdrive and FTL should work.

Fundamentally, though all fold drives and other FTL devices are plot devices designed to allow travel between solar systems and planets. In star army, FTL-devices were once used in combat to improve ship maneuverability and weapons. However, *insert summary of GM's reason for the decline of CDD as in combat and “Faster Than Light” Lasers.*

## Hyperspace-FTL

**Hyper-drives** and other fold-drives are special systems in a star ship that allow it to enter and exit hyperspace, an extra dimensional space, through space folding, an extra dimensional . They are so complex they seem to enter and exit hyperspace as if by magic, but engineering wise you fix them just like you repair an active sensor, radar, or a radio. The exact definition of hyperspace, beyond being just a plot device, varies depending on who you ask. In fact you, the reader, probably have your own definition. There are however 2 very common definitions of hyperspace:

- hyperspace is another name for,  **Minkowski Space**, four-dimensional space-time of special relativity (ref  **hyperspace**)
- hyperspace is any topological space who has some of its elements are a subsets of another space, but not all elements are subset. In other words, hyperspace is space of dimension  $N+1$  or higher for a space of dimension  $N$ . Thus the hyperspace of Minkowski Space would be a space-time of dimension 5 or greater.

In SARP, people use the definitions interchangeably. For the purposes of this article however, we will refer to hyperspace as the space-time of dimension 5 or greater, we will call 4D space-time Minkowski Space. This is primarily because if you really think about it we live and sense in a 4D space where everything is limited by the speed of light.

Know that as an engineer its important to know the essential parts of any hyperdrive system. Their are four main components to the fold sytem – a ship's fold drive or fold system (motor), sensor systems (headlights) , shield system (air-bag), and sublight engines (break).

### Advantages

- For the amount of ship energy and systems that FTL requires per speed, Hyperdrive FTL tends to be one of the most efficient and fastest methods of travel.
- If a failure occurs with the hyperdrive system or hyperdrive sensors, a ship will typically stay in hyperspace. Since a good pilot will plot a safe straight line path, this allows repairs to be done while still traveling faster-than-light. Almost all starships come with a manual emergency back up system if one needs Failure situations can still be dangerous especially when in a fleet, so its good to exit warp if you have any feeling that you already passed by you destination.
- FTL tends to handle situations involving interdiction or Anti-FTL devices better than wormholes. This is why makes FTL good system for entering or exiting combat.

### Disadvantages

- *(GMs check and edit the line here, then removed this note)* Charging the hyperdrive typically requires the long charge time compared to other fold systems like wormholes or CDD. Typically this requires anywhere from 5 - 15 to 45 - 60 sections . For large fleets or very large distances, this may take up to 15 minutes. Check the GM of your plot or (insert any link to charge time here), for specifics.



- Failures with a ship shield system can be catastrophic for FTL just like they are for CDD. If possible one should exit warp, away from any solar systems, until the shield is repaired. This is because the shield protects the ship and sometimes weapons from any high velocity collision with dust, other ships in the fleet (typically the mistake of rookie pilots), or asteroids.
- Hyperspace FTL systems can only move in a straight line. Even though one can overcome this disadvantage through point-to-point FTL jumps, hyperdrive tend to be the worst and slowest at turning out of all the fold systems.

## CDD

### Advantages

- Of all the fold systems, CDD handles interdiction or FTL devices the best. This is why CDD is the ideal choice in some medium and long range combat situations. However due to its high speed its a poor choice for close combat.
- *(GMs check and edit the line here, then removed this note)* CDD provides a medium speed for the amount of energy it requires. It also takes less time to charge the CDD device and create the bubble than to charge one's FTL drive. Formation time varies between ships but typically its *GM insert fold time here*
- One can turn the ship while using CDD, although turns are is not as sharp as they are with wormhole devices.

### Disadvantages

- Failures with a CDD drive while in use can be very dangerous situation especially while turning. Since most CDD systems come with an automatic emergency break, typically the ship will normally exit the hyperspace bubble, in order to do repairs. If not it is possible for the pilot to deploy the break manually by pulling a lever normally to right of where his left foot is located. Unlike FTL, safe exiting is of the bubble not always guaranteed with a broken CCD. Upon bubble exit your ship may very be will be going very uncontrollable high velocity between .7 - .98 C an enters a situation much like a hydroplaning vechile, where often the only way to stop is to lightly turn of the the ship STL engines in reverse as a brake. This is it is a good idea to make sure shields and STL engines are work before forming the bubble
- Failures with the shield, STL, or sensors systems lead be a very high risk situations when using CCD as the situation above highlights. CCD has a tendancy to want to drift slowly toward the nearest massive object much like a ball follows a slope hill. Due to these safety concerns, this guide strongly recommends, at the first sign of any trouble with the sensors or shields, halting the CCD drive and exiting the bubble in a safe location and then reporting problems to your captain. If it is a combat situation you should check with you captain first; otherwise, it is your duty as an engineer to ensure the safety and security of the crew above your captains orders.

## Wormholes

[Wormholes](#) is the concept of bend Minkowski Space to create a space-time tunnel, which serves as

shortcut between two other wise distant points. With wormholes one is thus does not go faster than light, but one simply takes a shorter path than the normal perceived straight line path that light took. In SARP [Wormholes](#), are primarily used by the Freespace and Hidden Sun clan. A long time ago Neplesia use a gate network of wormholes; however, they were destroyed in the early in the YE 31-32 war between Neplesia and NMX.

To create wormholes, one requires a energy called negative energy, or energy with the opposite sign of normal energy. Negative energy is just like normal positive energy that any particle has. In fact, the only real difference is that negative energy is associated with antimatter reactions like chemical energy is associated with chemical reactions. The reason for negative energy existence and relationship with wormholes is very mathematically complex and requires combining quantum mechanics with relativity. If one wants a spacetime, which contains a traversable wormhole, it simply turns out that there must be a local negative energy density near the throat of the wormhole for the solution to exist and be stable.

Don't try to get too hung up on negative energy. *The important thing for a SARP engineer is negative energy is used to stabilize wormholes.* The other important thing is that, negative also turns out to be exact same form energy as that infinite energy found in [zero-point energy](#) (2-D), [quantum foam](#) (Minkowski space), and [aether](#) (hyperspace). *In practice, this is why wormhole generator devices are a lot more high maintenance than normal fold systems. Engineers should treat failures with the wormhole system like a reactor failure or a core-meltdown.*

### Advantages

- Wormholes only require a only need 4D space and negative energy. This is why compared to other fold methods they require the least amount charge time.
- Wormholes are faster to turn with than CDD or FTL since you can make a 360-degree turn with only one tunnel.
- Wormholes allow the safe instantaneous transport of supplies between ships in the same system, as long as careful countermeasures are taken against anti-wormhole missiles.
- Since wormhole travel is at normal STL speeds while inside the hole, their is no danger using your wormhole drive if your shields or sensors are down. If your STL drive or another critical system fails while in the tunnel, most ships normally have a safety system, that would allow one to take emergency exit out of the wormhole. Normally though if your STL fails you would just drift through the wormhole anyway thanks to Newton's First Law.

### Disadvantages

- Despite the high turning speed, Wormhole drive is one of the slowest and sometime shortest fold methods compared to FTL or CCD. With their slow speed, your opponent could just as easily use hyperdrive to pass you then attack you when you exit the wormhole as they could fire anti-wormhole FTL missiles. This is why wormholes are a poor choice in the normal long-range and normal medium range of space combat. However, if your closer than 1 km from you enemy that may be a different story.
- Wormholes suffer the greatest from Anti-FTL and interdiction systems. This is another reason they

are a poor choice for combat

- Wormholes require negative energy in order to be stable. As a result of negative energy's relationship with antimatter and aether, wormhole device require a very high maintenance. Failures with a wormhole drive also have to be treated like a reactor failure in addition to using the emergency exit safety system.

## PROPULSION ARRAYS & POWER REACTORS

### Overview

*A quick, general overview of the four following. Note to self; Link appropriately.*

Along with the 4 major power sources, some factions rely on minor powers sources such as solar, wind, geothermal, or hydroelectric. On the industrial scale and in right environment minor power sources can actually pro. For example solar power is very advantageous when near a sun (see \*); wind power is advantageous for striped gas giants; geothermal for really rock, lava, or desert worlds; and water-based power for water worlds. However, for starships and heavy armored vehicles, another power source is typically required.

\*Unless it's a large space station, this distance is roughly typically up to the about 1-5 AUs beyond the range of the star's [Habitable Zone](#)

### list of Faction Specific Minor Power Sources

- [Solar-charged Battery](#)
- [Lorath Geothermal Generator](#)

### List of Special Batteries/Capacitors

*this list composed of any purely electrical power source categories that doesn't fit in another category. Note most starships typically have their own super capacitors. By design these are typically similar in purpose to MFY capacitors.*

- [MFY Capacitors](#)
- [Ke-M2-G3000 Shoulder Capacitor](#)
- [Ke-M2-G3001 Leg Capacitor](#)
- [Interchangeable High-Volume Capacitor](#)
- [Leyflar Supercapacitor](#)
- [Huelmu Supercapacitor](#)
- [Zaiflar Supercapacitor](#)

## AETHER



1. **Aether Power** is perhaps the least understood of all possible power sources, but rather than spend a great deal of time going on about the science behind its existence (which is a convoluted mass capable of making even the most sane mathematician retire), we will instead look at its application. Aether, due to its extremely high power output and the number of safety precautions that must be observed during its use, is most commonly used for military purposes. It is rare to see a private or civilian shipping craft using highly unstable Aether. However, on ships requiring a vast amount of power, usually to power high-grade weapons and munitions, often more than one aether generator (a primary and a backup) is utilized.
2. There is no power in the universe capable of keeping up with a properly rigged aether system, but only a comparably small amount of that boundless energy can be safely translated into electricity. This is because the Aether Generator uses a highly complex electromagnetic field to siphon energy off of another dimension. The electromagnetic energy is then translated into plain, usable electricity - albeit a tremendous amount - and is stored in capacitors. The efficiency of an **Aether Generator** is measured by how efficiently it can convert the extra-dimensional power into usable, electrical energy.
3. The larger a Generator, the larger the electromagnetic field can be and the more can be converted, but increasing the size of the electromagnetic field increases the danger of overheating, or getting 'wild' electricity. The electromagnetic field is more than a little unstable and, if complete isolation of this field can not be maintained, it will destabilize, overload the system, and cause a great deal of damage to equipment and, as a result, personnel. Therefore, an Aether Generator requires constant surveillance - both by the ship's MEGAMI and by an actual, breathing organid - and an aether engine will usually have at least one dead-man's-switch that will manually disconnect the couplings in the event of a wild power surge.
4. Another downside to Aether power is that an Aether Generator must be brought offline completely before its vital systems (such as the electromagnetic field generator or primary cable power) can be repaired. This means that in the event of a problem, the entire ship could be bereft of its main power source while it is undergoing maintenance.

5. The two primary parts of an aether system are the generator or reactor and the capacitor. The Generator converts Aether (potential) energy into usable (electric) energy, which is then stored in the Capacitors. The cable from the Generator to the Capacitor is a RAW feed, whereas the power from the Capacitors to the rest of the ship can be monitored and regulated for voltage.
6. It is worth noting that inefficient Generators, due to the peculiar electric and extra-dimensional energies involved, will often produce a sort of volatile cloud of atoms which - while having no particularly damaging effect on the engine or electromagnetic field - can be super-heated directly into a loose plasma form and fired out of, oh, say, an AETHER CANNON or other [Aether Weaponry](#).
7. Every time you get blasted with Aether, just remember - that's a compress and accelerated engine exhaust they're throwing at you.

### Notable Examples

#### *Generators and Reactors*

#### *Propulsion Arrays*

- [Turbo Aether Plasma Drive](#)
- [Inline Aether to Plasma Drive](#)

#### *Related Technologies*

- [Aether Dampening Field System](#)

## ANTIMATTER



[Antimatter](#) is a substance occasionally seen in the technology of various SARP faction and corporation. Since antimatter annihilates any material it touches, this type of substance is very volatile and less popular than nuclear power. However, it does find uses in various weapons, and matter/anti-matter

reaction power reactors, and as “nitro” for Plasma or Nuclear Propulsion Systems.

- See [Antimatter](#) for more general information about how antimatter works.
- All usable antimatter produced through one of the [Antimatter Production Methods](#)

### Notable Examples

*Dear SARP member, feel free to add your approved antimatter power systems here Reactors and Generators*

- [HSC Âmanus Tyokanorjopa](#)
- [Lorath Mini-Antimatter Reactor](#)
- [UOC Tsuyosa Series Reactor](#)
- [Yggdrasill Kai's Binary Power System](#)

### Propulsion Arrays

- [Turbo Aether Plasma Drive](#) (the engine uses a pinch positrons in the plasma to give it nuclear reactions)

### Related Technologies

- [Antimatter Production Satellite](#)
- [Plasma Drive/Circulation/Transmission System \(P-DCT\)](#)

## NUCLEAR FUSION & FISSION



*Dear knowledgeable reader feel free to add anything. Just be sure to include something mentioning*

turbines.

## Examples

*Dear SARP member, feel to add your nuclear reactor here Mixed Fusion Fission Reactors*

- [Freespacer Militants Internal Nuclear Reactor](#)
- [QNC](#) (Actually this might be an example of an antimatter enhanced reactor)

*Fission Reactors*

- [Lorath Nuclear Reactors](#)
- [Nuclear Battery](#)

*Fusion Reactors*

- [Sumanâ-a Tyokanorjopa \(Fusion Reactors\)](#)
- [NAM Ultra Compact Fusion Generator](#)
- [COFU \(COld FUSion\) Reactor](#)
- [Pressurized Helium Reactor](#)
- [Heavy Water Fusion-Fission Reactor](#)
- [D-D Main Fusion Reactor](#)
- [D-H3 Secondary Fusion Reactor](#)

*Propulsion System*

- [Abwehran Fusion Engine](#)
- [Civilian Fusion Engine](#)
- [Escort Fusion Engine](#)
- [Cruiser Fusion Engine](#)
- [Station-keeping Fusion Engine](#)
- [Military Transport Fusion Engine](#)
- [Capital Fusion Engine](#)

*Related Technologies*

- [Nuclear Toaster](#)

## ZERO POINT

*Dear reader if you are a Iroma Engineer or Exhack please fill in the basic concept here*

Zero Point Energy is typically created by manipulating a Zero-Point Field. Currently only the Iroma seem to have explored this technology. *Related Technologies*

- [Zero-Point Siphon \(ZeP Siphon\)](#)
- [Null Entropy Capacitor \(NEn Cap\)](#)

# Shields: Basic Concepts and Tactics

Overriding everything else, the person who manages the plot or story you're in determines how your shields are implied. This means they determine specifically how much damage a unit takes, how much the shield absorbs, etc.

## The Barrier/Wall Shields Concept

*A basic concept of what barrier shields are or how they work.*

## Distortion Shield Concept

*A basic concept of what Distortion Shielding and how they work.*

## Shield Tactics

## OOO Notes

WIP

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