Engineering Tactics Manual

Concepts of Unconventional Ship System Applications: Theoretical Uses of Optimization of Existing Vessel Technology Version 29A

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The following are theories which may optimize or assist in the operation of vessels, with minimal upgrade or enhancement. These are merely concepts to be used in various situations.

Concept One: Stealth Mode

Many Mishhuvurthyar vessels track and attack vessels using psionics. The AND, and later the PSC, also allow this to be somewhat counteracted…but our ships still output heat and energy, both of which are also actively tracked by even the most basic Mishhu sensors. While this is a necessary thing, risk of detection can be reduced.

By evacuating key areas of the vessel and powering down key systems, as well as life support in non-critical and unoccupied areas of the vessel, the ship not only can lessen the likelihood of energy detection, but also reduce its heat signature, as the disengaged rooms will drop substantially in temperature.

A ship in Stealth Mode will likely operate in the following ways:

- Subspace silence, and generally communicate in light-speed communications; like weak radio broadcasts, laser, or other point-to-point systems.
- STL speeds reduced to 40%.
- FTL speeds reduced to 20%.
- Avoidance of sharp or semi-sharp turns that can’t be accounted for by gravitational fluctuation. This means that the vessel’s MEGAMI should computer a course that makes the ship appear to succumb to gravitational forces to reach its destination rather than shift momentum under its own power. This also applies to acceleration and deceleration changes.
- If possible, the vessel will be preconfigured to appear damaged and adrift, perhaps with superficial blast patterns on the hull, randomized values of pitch and rotation, preferably multi-axis, and the flickering of visible lights.
- Reroute all nodal devices away from areas freezing and lower, unless they are needed for repairs or maintenance.
- Personnel should be as far inside the vessel as possible, so that basic scans are less likely to detect life.

If the ship is found out, stealth mode can be altered to attain Overdrive Mode.

Concept Two: Overdrive Mode

Using the lowered thermal attributes in stealth mode, though in a more regulated fashion, it is possible to further cool the coolant fluid and act as a liquid coolant system. By making the coolant lines run even colder than normal, a higher theoretical maximum power output can be attained by most of the ship's systems.

This is accomplished by running the coolant through an area where the thermal aspect of Life Support has been dramatically reduced. The almost freezing coolant becomes more effective, and certain types of coolant that lack nucleation sites can actually be supercooled…though the latter method needs finer monitoring.

The increased thermal protection allows systems to be pushed beyond conventional tolerances.

- WARNING!!!: While the power of the vessel can be increased, the likelihood of component failure is increased, especially if Overdrive Mode is maintained for an extended amount of time. Worst case scenario, the overload will cause main Engineering to explode if left unmonitored and unattended. This will destroy the ship, and all hands.

These power boosts can be applied to various systems, but are most often used to fire main weapons while at maximum FTL speeds. Sometimes they can be used to briefly enhance shields, weapon power, or propulsion of widely varying types and generations.

All use of overdrive mode stresses the power system, so at least one technician must be actively manning Engineering when this method is used. Potential bottlenecks should be explored and watched closely, to be repaired at a moment's notice.

This can be assisted by engaging additional capacitors, or emergency Aether generators, which can take the load off of the main power system, and are already installed on some vessels.

Additional Notes on Concept Two: Safely Using Overdrive Mode--Pushing Systems Past Tolerances

- WARNING!!!: This is not recommended unless all other possibilities are exhausted. The vessel is not meant to be pushed beyond the tolerances listed in the Star Army Technical Manual or the Star Army Technical Database. If you require more power for your vessel's systems, or a specific one, it is possible to briefly push your system beyond the typical ratings, but it is NOT GUARANTEED! This should only be performed after the Commanding Officer has decided that the risk is acceptable, and that it is the single best chance for the continued safety of the vessel and crew.

It is possible to use Concept Two to boost a ship's systems past their rated level for a brief period of time, but how long it can be managed, and how much damage is caused, depend upon taking the proper measures during the Overdrive Boost.

The most likely needs of boosting power would be for one of three things: FTL speed, Shielding, and Weapons Power. In addition to maintaining the health of the power system, the system being pushed

beyond norms must also be monitored carefully. Here are methods for boosting the ship's systems briefly and with as much safety as possible.

- Use the nodal system. Not all failures in overdrive will be the major components, but merely the power pathways between them carrying too much power and burning out. It is possible to use the nodal system to make limited repairs or reinforcements in real time if necessary. This is good practice for whenever Overdrive mode is engaged.
- Have at least one technician or engineer assigned to every area which has components to be pushed past 100%, ready to make repairs at a moment's notice, as the system runs if necessary.
- Recalibrate the coolant and flow pathways automatically as the energy consumption changes in the ship's system for optimal cooling levels.
- Instead of overcharging the main gun if you want more weapon power, increase the firing rate instead. Your main weapon's charging capacity has not changed, and firing more often when additional coolant is available is FAR less likely to harm the weapon. If it is absolutely necessary to increase the output of the main gun, then redirect energy from the ship's capacitors to assist the main gun's charging system. This, however, increases the risk of critically damaging the main gun, and perhaps making the front half of your vessel explode. It is a gambit at best.
- When increasing shield strength, try to alternate which shielding emitters put out over 100%. Used in conjunction with the next Concept, the gain could be great, and the risk to the shielding emitter system minimized.
- If pushing the engines beyond maximums to attain high FTL speeds, pacing is important. It is plausible to push the system to its absolute limit on a Sakura-class Gunship for several critical minutes. However, it is possible to, for about twenty minutes, to push the engines of a gunship to 110% if the system is carefully maintained. Of course, when going beyond tolerances, the gain attained can vary widely between ships, even in the same class. It all depends on the Engineering practices used, and the quality and status of the components of the vessel.

Concept Three: WARMS CFS Integration: Dynamic Shielding

It is conventional practice to reroute CFS energy away from the paths of outgoing attacks and exhaust, or to allow ally Power Armors to enter through the resulting holes in the shields. It is not a large jump to go the other way, to reroute shield energy to the point of impact of an attack on the shields and concentrate shield energy there.

Doing this is remarkably simple: Merely connect the CFS to a WARMS system via MEGAMI (or your variant of the ship control system), and write code to have WARMS' attack extrapolation data be used to predict shielding impact points. The ship can easily do the rest, making a smarter shield. After the attack, the concentrated energy can easily be replaced across the shield evenly.

Concept Four: Inertial Dampener Reversal: The "Parking

Brake"

(Contributed by Nitô Heisho Jackson Winston-Allibaster Howard circa YE 39)

Inertial dampeners are invaluable components of modern starships. By reducing a vessel's mass, and thus its inertia, they allow a ship to accelerate and maneuver at higher capacity while conserving energy and without compromising structural integrity. However, there are sometimes situations in which a ship's capacity to move must be nullified, such as when caught in a tractor beam, imminent capture, or being forced to abandon a vessel outside of a friendly port. By reversing the equation used in the inertial dampening system, an inertial *amplifier* is created, which will act as a vessel's “parking brake” when needed. Once implemented, a ship will remain completely stationary (or at least immensely slowed down) regardless of outside forces, including its own propulsion systems.

Implementation: First, reverse the inertial dampening equation. Next, enter it into your MEGAMI so that the system can learn the equation. Lastly, for safety, set activation protocols for the inertial amplifier. The best option would be to set the MEGAMI to engage or disengage the “parking brake” only by direct command via the vessel's acting captain. That way, when something goes wrong, everyone aboard will know where to point fingers.

WARNING: Reversing the inertial dampener at speed may compromise structural integrity! Always ensure that the vessel is completely stopped before engaging the parking brake!

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