

BATTLESTAR GUN CREWS

OPERATIONAL MANUAL

The unofficial guide to Battlestar Gunnery and Operations
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A Battlestar Fanclub Group

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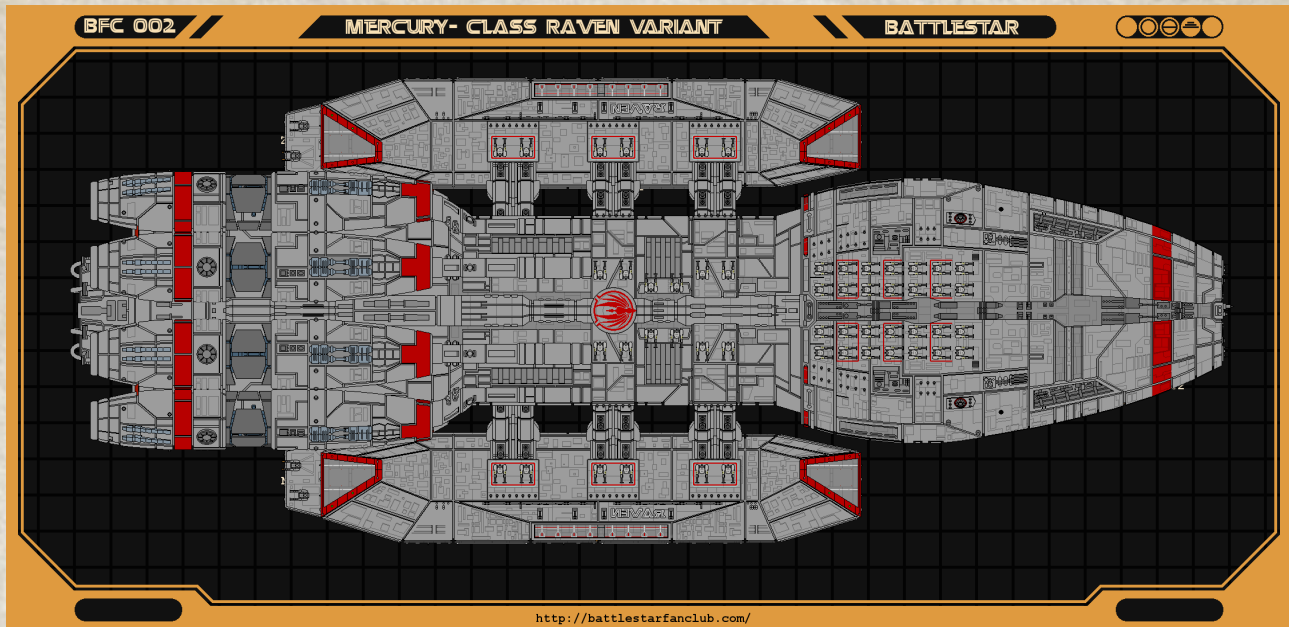
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1. Mercury-Class Raven Variant Battlestar Overview



1.1 Statistics

CLASS: Modified Mercury

AFFILIATION: Colonial Military

FTL PROPULSION: 2 FTL drives, 8 x sublight engines, 6 individual engine pods (2 on main hull between engine pods), 40 x maneuvering engines (in 10 clusters of 4 apiece)

CREW: Maximum 4200, Standard 2800, Minimum 350

ROLE: Carrier/Battleship Hybrid – Fleet Flagship/C&C Vessel

STATUS: Active

FIGHTERS: A maximum of active 8 squadrons of 10 Fighters (200 max. complement)

RAPTORS: max. 30 Raptors

WEAPONS:

4 Superheavy frontal Main Batteries

30 Heavy KEW turreted Batteries (Mercury Standard)

52 Additional Heavy KEW turreted Batteries (Raven Variant)

400+ Light Gun & Flak emplacements

Decoy Drones

Hunter Class programmable missiles

Heavy Class D warheads

Tactical Nuclear Weaponry

Electronic Countermeasure Division

Length: 5,120 feet (1,652 meters) for main hull / 2,769 feet (843 meters) for flight pods

Height: 1,086.8 feet (331.26 meters) for main hull / 408 feet (124 meters) for flight pods

Width: 2,226 feet (678 meters) including flight pods / 513 feet (156 meters) for flight pods

Weight: 66.14 million tons (60 million metric tons)

1.2 Introduction



The Mercury-Class Raven Variant is a true embodiment of colonial military might. The modified design was heavily influenced by Colonial Flagships such as Galactica at the height of the First Cylon War, greatly enhancing the Battlestars military prowess. This raw display of firepower represents not only the Colonies Triumph but also their everlasting vigilance against the looming Cylon Threat.

Unlike many specialized warships of the interwar era, the Raven Variant was designed for the sole purpose of an all out open war, serving as a top of the line flagship to large combined Battlestar Groups as well as leading deep strike operations far behind enemy lines. Thus, the Raven Variant emphasizes the Mercury Classes heritage as a direct successor to the Columbia/Jupiter-Class Battlestars that served during the First Cylon War in a similar role.

The Mercury-Class was developed to surpass older Battlestars in terms of durability, firepower, and efficiency.

While following the traditional Battlestar aesthetic, the newly designed Mercury-Class hulk houses more powerful reactors, sublight propulsion systems, and FTL drives, allowing for an overall larger frame and heavier armor. The overall appearance of the ship is, therefore, less organic than that of older designs and marked a new era of design within the colonial fleet.

At the same time, networked systems and more advanced components were used to reduce the required crew complement. More efficient space management allowed for more redundancies and protective measures against cyber warfare attacks, hull damage, and enemy intrusions.

Additionally, the ship was fitted with extensive Command and Control capabilities, allowing for combined fleet operations, coordinating dozens of Battlestar Groups at the time.

Expanded flight pods allow the Mercury-Class to carry a larger Viper and Raptor complement than previous Battlestars, aside from dedicated carriers. A maximum of two hundred Vipers and up to thirty Raptors can be operated from the Mercury-Class and dedicated facilities allow for advanced repairs and even the construction of new vessels in the hangar pods.

In addition to modified KEW Weaponry, the Raven Variant Battlestar is equipped with additional Vertical Launch Systems and an extensive Cyberwarfare Division, as well as a Network Deadman's Switch, resetting all systems to full manual control in case of a hostile takeover of networked computer systems.

Due to the extensive modification of weaponry and other ships departments, the minimally required crew complement aboard the Raven Variant is notably larger than that of other Mercury-Class Vessels, requiring a minimum of 500 and a standard crew of 3400 to operate with full combat effectiveness.

2. Mercury-Class Raven Variant Battlestar Armament

2.1 Flak Guns and Light Guns

Mercury-Class Battlestars are armed with 400+ Flak- and Light-Gun-emplacements (2 guns per mount) distributed on all surfaces of the ship, protecting against incoming missiles and hostile fighters.

The Flak Guns fire exclusively detonating anti-aircraft ammunition that sprays shrapnel in all directions, forming a cohesive field of flak around the ship.

In addition Flak Guns, Battlestars carry extensive batteries of Light Guns of similar fashion to the Viper's MEC-A6 30mm Thraxon mass accelerator cannons. In contrast to the Flak Guns, the Light Guns fire nonexplosive rounds at a higher rate, serving as the Battlestars Point-Defense Weaponry.

2.2 Layered Perimeter Defense

Air and space defense within a Battlestar Group are built around a system of concentric layers around the Battlestar.

- The outmost layer is provided by the Combat Air Patrol (CAP) and scouting Raptors, enabling the Fleet to detect and track incoming enemy forces via DRADIS. The CAP will be reinforced by alert Vipers if need be.
- The next perimeter defense layer is provided by ship-to-ship missiles and PDMS systems carried by the Battlestar and its escort vessels. Main batteries and secondary guns of most escort vessels and battlestars can provide additional support by using Flak ammunition.
- The innermost layer of Defense consists of Close in Weapons Systems (CIWS) that operate in two subdivisions of layers at close and extremely close range.



2.3 Point-Defense Weapons Systems

Point-Defense Weapons Systems protect the Battlestar against enemy fighter craft and guided missiles. The Light Guns deployed as Point-Defense weapons aboard the Mercury Class have a smaller effective range as compared to the anti-ship batteries and work in conjunction with the defensive fields provided by the Flak Guns. Together, they form the Layered Defense System of the Battlestar.

1. A Basic point-defense missile system (PDMS) is installed aboard the Mercury-Class to serve as both a protection against enemy fighter craft and guided missile at medium range as well as a secondary anti-ship weaponry, especially against light targets. Vertical Launcher BPDMS shoot defensive missiles over the horizontal plane of the battlefield, allowing the missile to "dive-bomb" incoming targets from a favorable angle.
2. The Close in Weapons System (CIWS) employs MEC-A6 30mm Thraxon mass accelerator cannons to destroy incoming targets. It is primarily used against incoming guided missiles, but can also provide close tactical fire support for Viper Squadrons operating close to the Battlestar. The cannons are synchronized to fire alternately, ensuring maximized concentrated firepower against close targets such as heavy fighters, troop transports, and armored warheads.

Both Flak Guns and Light Guns are able to operate in conjunction with a networked targeting computer system of a Battlestar, allowing Light Guns to track all movements of friendlies and hostiles to selectively attack enemy crafts. The networked systems, however, rely heavily on the Battlestars ECM capabilities to prevent Cylon Virus Attacks from disabling the system completely. Alternatively, Flak Guns can be manually assigned to form a cohesive field of flak, while Light Guns are set on automated firing mode targeting all heat signatures.

Always keep in mind that these firing modes are not selective and will damage friendlies just as much as enemy craft. Gun Crews are always required to remain in constant communication with the CIC to ensure that friendly fire is avoided.

2.4 Anti-ship Batteries

Kinetic Energy Weapons (KEWs) are the Battlestars primary means of ship-to-ship combat and against armored targets. They are multi purpose weapons, used for ship-to-ship, anti aircraft and general bombardment depending on the mission profile.

KEWs are mounted on two barreled turrets (KEW Batteries) that fire independently or in tandem salvos. Each turret is heavily armored and extends below the deck to a secured magazine. The armored housing is outfitted with two barrels that move independently from each other, allowing each rifle to engage independent targets along the long (x-) axis and targeting weak points on enemy capital ships.



Mercury-Class Battlestars carry 30 turreted KEW Batteries and 4 forward mounted Super Heavy KEWs, allowing for unmatched forward firepower.

The Raven Variant fields 52 additional turreted KEW Batteries, totalling the Battlestars KEW Armament at 82 turreted Batteries divided into 11 Battery Detachments.

Similar to the Light- and Flak Guns, the Anti-ship Batteries of the Mercury-Class can be networked with the CIC, target and guidance systems to maximize damage output by tracking enemies, weak points, damage reports and ammunition flow all at the same time, feeding information to automated targeting systems.

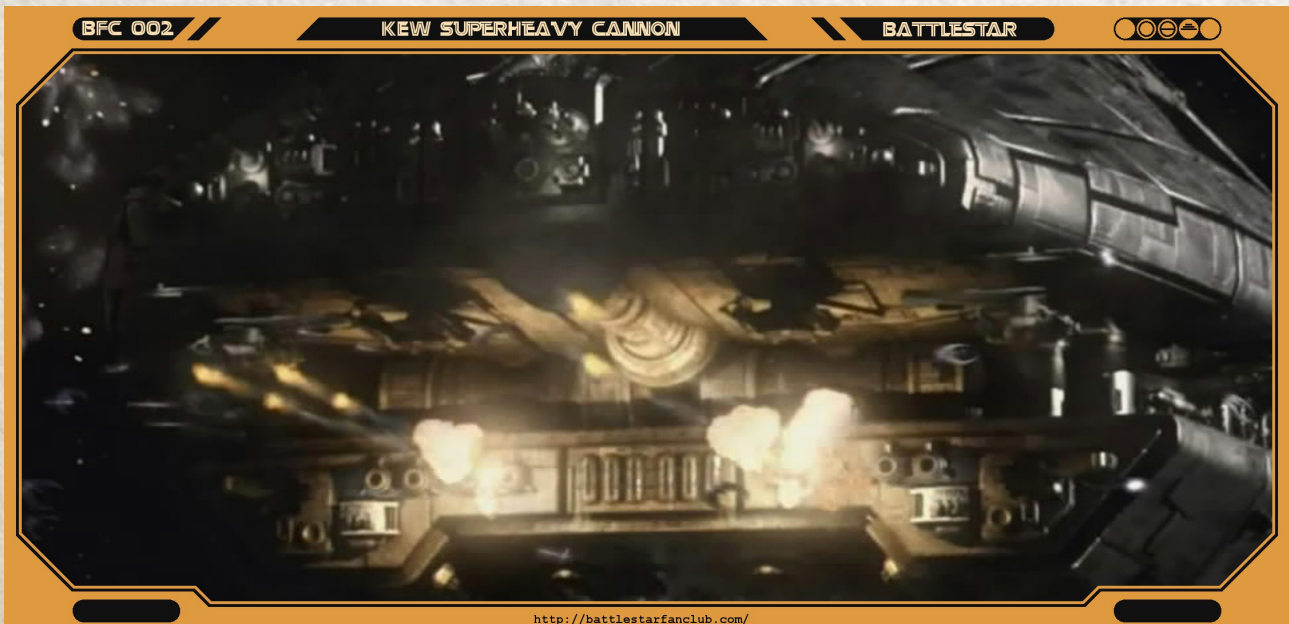
Alternatively, each turret can be operated independently, relying on its own targeting systems and communications from the CIC for correct data.

Operating the Anti-Ship Batteries manually slows down the information processing, effectively shortening the range of the weapons and slowing the rate of fire as more time is needed to accurately target enemy forces.

2.4.1 Primary Batteries

In contrast to older Battlestars, the Mercury Class is designed to engage enemy capital ships in a frontal attack, while using guns along the long axis of the ship for perimeter defense. Its guns are not arranged in super-firing position, making it impossible to achieve 100% Offensive Fire Distribution (OFD) with all of its main batteries against a singular target due to obstructions by the hull.

This has an immediate effect on the maneuvers performed by this ship. The Mercury-Class relies on its super heavy frontal KEWs to destroy enemy capital ships in the early phases of a battle before the ship breaks enemy formations apart and engages multiple targets on all sides to bring the majority of its firepower to bear.



2.4.2 Secondary Batteries

Similar to the primary batteries, the secondary batteries of the Mercury-Class are distributed around the long axis of the ship, allowing for maximized effectiveness in perimeter defense. The secondary batteries are made of from lower caliber guns, firing at a faster rate and similar range to the primary batteries.

2.5 Stand-Off Weapons System and Vertical Launch System (VLS)

Stand-Off weapons are missiles, bombs and long-range projectiles launched at from a distance sufficient to allow attacking units to evade defensive fire. They are typically used in offensive operations and make up the core of the Battlestars long-range capabilities. The Mercury-Class deploys Stand-Off weaponry in the form of cruise-missiles, atmospheric glide-bombs, and ballistic missiles. The most well-known example of Stand-Off weaponry deployed by the Colonial Fleet is nuclear warheads mounted on long-range missiles.

Battlestars most commonly use Vertical Launch Systems (VLS) to hold and fire conventional and nuclear missiles. All Vertical Launch Systems within the Colonial Fleet have been standardized since the first Cylon War and are capable of holding missiles of all types.

Missiles are usually held in quad packs, allowing for a massive missile arsenal ready for firing at all times. Although they are not the Battlestars primary weaponry, Missiles make up an important part of the Colonial Fleet's arsenal.

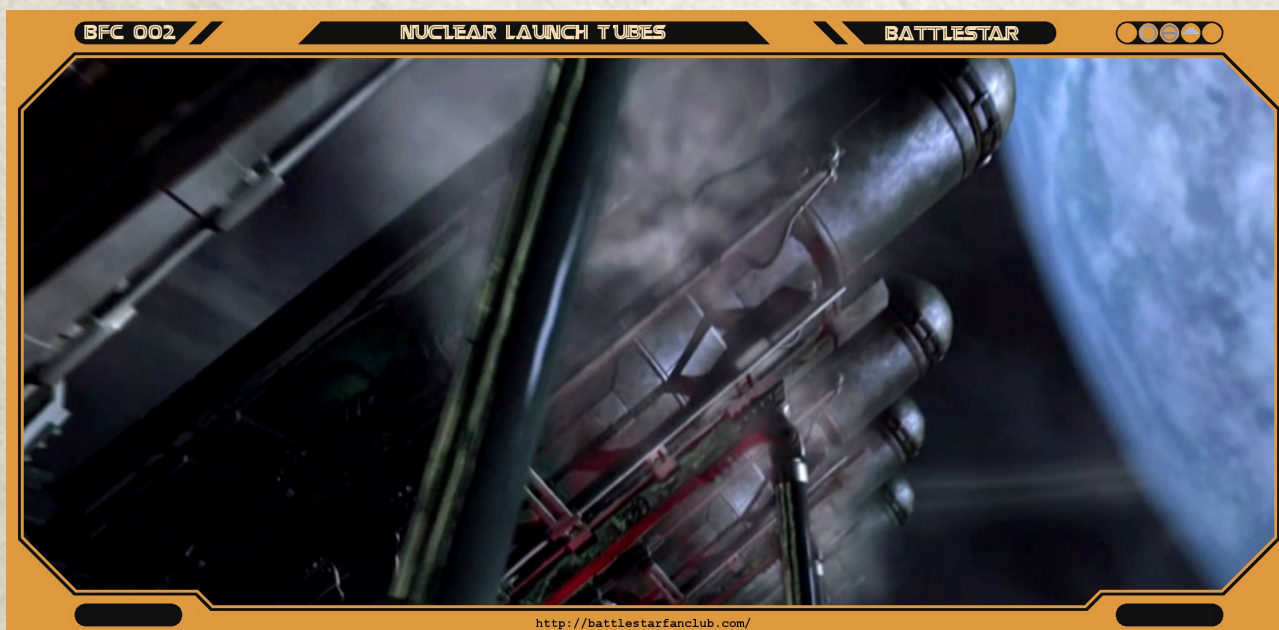
2.6 Nuclear arsenal

Despite kinetic energy weaponry becoming the primary means of ship-to-ship combat, nuclear weapons remain of critical strategic and symbolical importance to the Colonial Fleet and the entire Colonial Military.

Each Battlestar is capable of holding an entire high-yield stockpile of hundreds of nuclear weapons, although, in reality, that number is a lot smaller due to safety regulations and weapons treaties among the colonies.

The majority of nuclear warheads aboard a Mercury-Class Battlestar is fitted on ballistic missiles that can be launched via heavy missile tubes and possess both air-to-ground and ship-to-ship capability. Additionally, there are a few small warheads ready to be fitted on Battle Raptors for specialized missions.

In terms of destruction and lasting effects, nuclear weaponry is much more effective when used within the atmosphere of a planet, allowing for lasting nuclear fallout and an atmospheric shockwave to cause major destruction around the blast zone.



When used in space warfare, nuclear warheads are of limited destructive capabilities. Battlestar armor is capable of withstanding multiple nuclear blasts when in good condition. Nuclear weapons can be massively effective, however, if the targets primary hull has been breached and the warhead explodes within the enemy craft.

Among the Colonial Fleet, the usage of nuclear weaponry both in space and on the ground is still considered a weapon of last resort.

3. Kinetic Energy Weapons and Turrets

3.1 KEW Battery placement

Kinetic Energy Weapons are mounted on double barreled turrets that have been standardized throughout the colonial fleet.

In its standard configuration, the KEW turret can turn on all axis (left-right-up-down) and can be elevated to achieve super-firing position. Both rifles mounted on each turret can move independently to a limited degree, allowing for independent targeting.

During operations, it is the primary goal to achieve maximized Offensive Fire Distribution against the enemy. Simplified, that means that as many guns as possible must be able to achieve a firing solution against enemy targets.

To achieve that goal, the CIC will track all enemy forces and guide the Battlestars movement into optimal firing position. It is important to note that maximized OFD is the highest priority for the Gun Batteries, but not necessarily for the ship as a whole. Maneuvers will take into account the entire tactical situation, forcing gun crews to adapt rapidly to new positioning, new target priorities as well as changes firing mode and ordnance.

3.2 Rate of Fire and Range

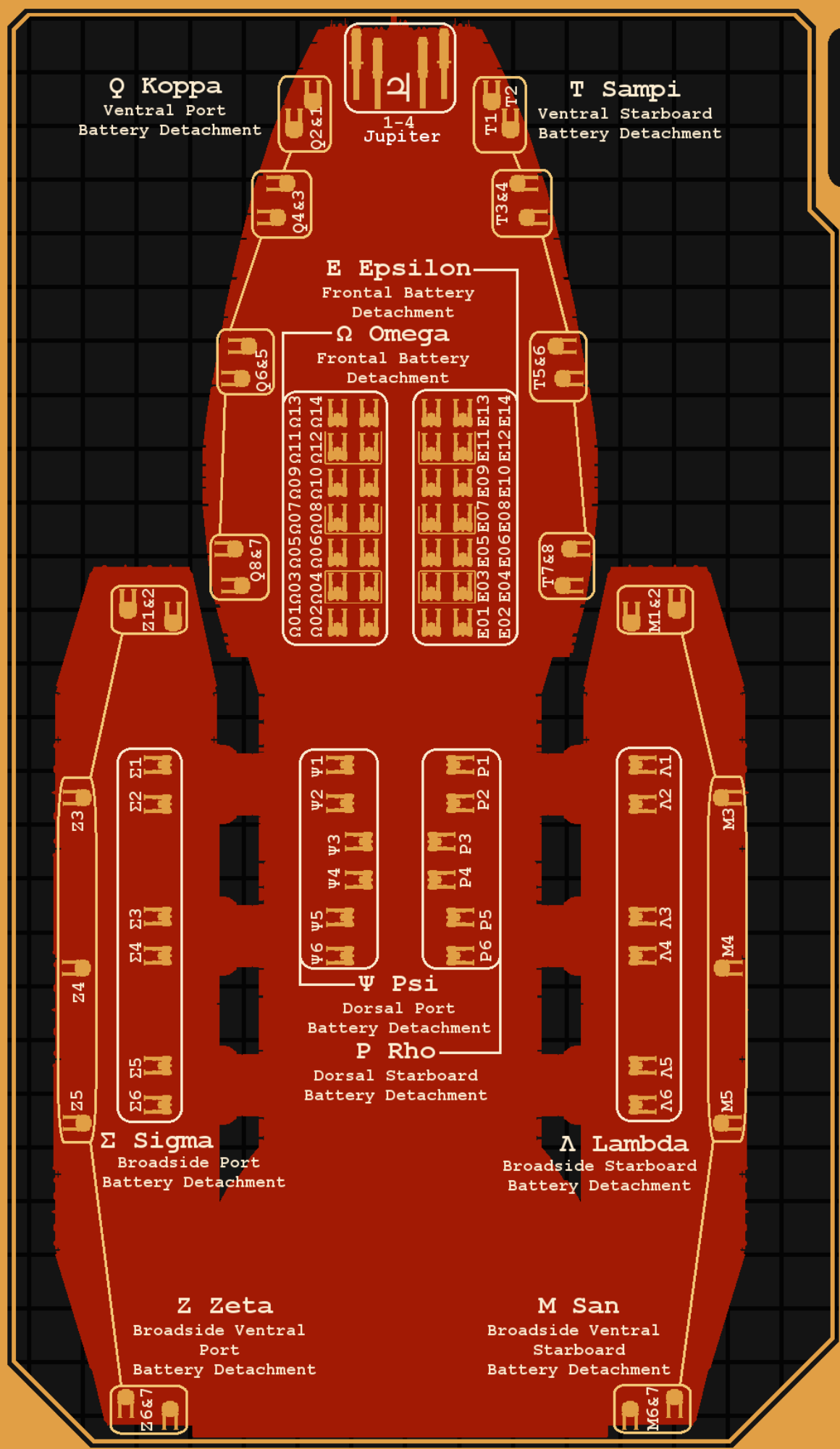
A standard heavy Kinetic Energy Weapon fires at a rate of one round per rifle every 3-4 minutes, which amounts to 15-20 rounds/minute (30-40 rounds/minute per battery). Thus, a Mercury-Class Battlestar outfitted with 28 KEW turrets is capable of firing between 840-1120 rounds/minute. That theoretical maximum is limited by several factors including:

- **Offensive Fire Distribution**
- **Aquisition of targeting solutions**
- **Detection and tracking of enemy forces**

These are also the determining factors for the KEWs effective range. As the first law of motion states: "an object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force". For all practical purposes, no such force is acting upon a projectile within the confines of a battlefield, making the KEWs raw weapons range virtually infinite.

However, the effective range of the KEW is not. It is determined by the ability to detect and track hostile targets, allowing for an effective target acquisition.

In other words, the effective range of ships batteries depends on how quickly sensors, CIC, and gunnery are able to communicate information. Because of this, a networked computer system can enhance a ships weapons range considerably, as times to achieve firing solutions are shortened and reaction times get faster.



3.3 Types of Ordnance

Kinetic Energy Weapons are capable of firing a number of different types of ammunition, depending on mission profile and combat situation. Gun Crews and CIC Tactical must always be aware of the exact ordnance fired by each gun battery, to ensure maximized efficiency.

1. **Anti-Aircraft Ammunition (AAA)** When used against enemy fighter craft, the Battlestars primary and secondary batteries act as anti-aircraft-artillery. AAA ammunition utilizes explosive charges and either proximity fuses or time fuses to detonate in a determined Flak area, to spray a maximized amount of tailored shrapnel. This ammunition is effective against light enemy attack craft such as fighters, as well as missiles. Against armored targets, the effect is extremely limited.
2. **Kinetic Energy Penetrator (KEP)**
KEP rounds are the primary ammunition against a heavily armored target such as enemy capital ships. This ammunition does not contain explosives and instead uses kinetic energy to penetrate the target, which is a function of mass and velocity. If the armor is penetrated, heat released by the impact and spalling (particle spray caused by armor penetration) can cause massive damage and secondary explosions within the hostile target.
3. **High-Explosive Anti Armor Warhead (HEAA)**
High Explosive warheads contained shaped charge explosives that use the Munroe effect to penetrate armor. Upon impact, the explosive charge melts a metal liner to form a high-velocity superplastic jet that is capable of penetrating armor steel to a depth of up to ten times the diameter of the charge. Like KEP rounds, the effect is purely kinetic in nature. HE warheads less effective against composite armor, but remain an important part of the colonial arsenal.

3.4 Security and Magazines

KEW turrets are high-priority targets for the enemy forces, alongside launch tubes and Vertical Launch Systems. Their position is easily detectable for the enemy and often exposed to enemy fire, especially on older Battlestar designs that heavily rely on turrets on the top and bottom side of the hull.

On Mercury-Class Battlestar KEW turrets are deliberately located in more secure firing positions, but still remain vulnerable targets to enemy bombers and guided warheads.

To prevent secondary explosions and chain reactions, ammunition is not directly stored in the turret, but hoisted up through the armored barbette from fixed stowage below deck. Both the turret, barbette, and storage are divided into armored compartments that automatically seal up in the event of a critical hit.

The ships magazines are located deeper within the hull and automated conveyor systems are critical to providing the turret with a constant flow of ammunition.

Additionally, each turret is equipped with independent life-support systems, energy supply and medical emergency kits and fire suppression systems.

3.5 Turret & Gun Deck

The turret of a KEW battery consists of two interior compartments that are heated and pressurized. Personnel is nonetheless required to wear a protective suit, helmets, and a lightly armored vest at all times.

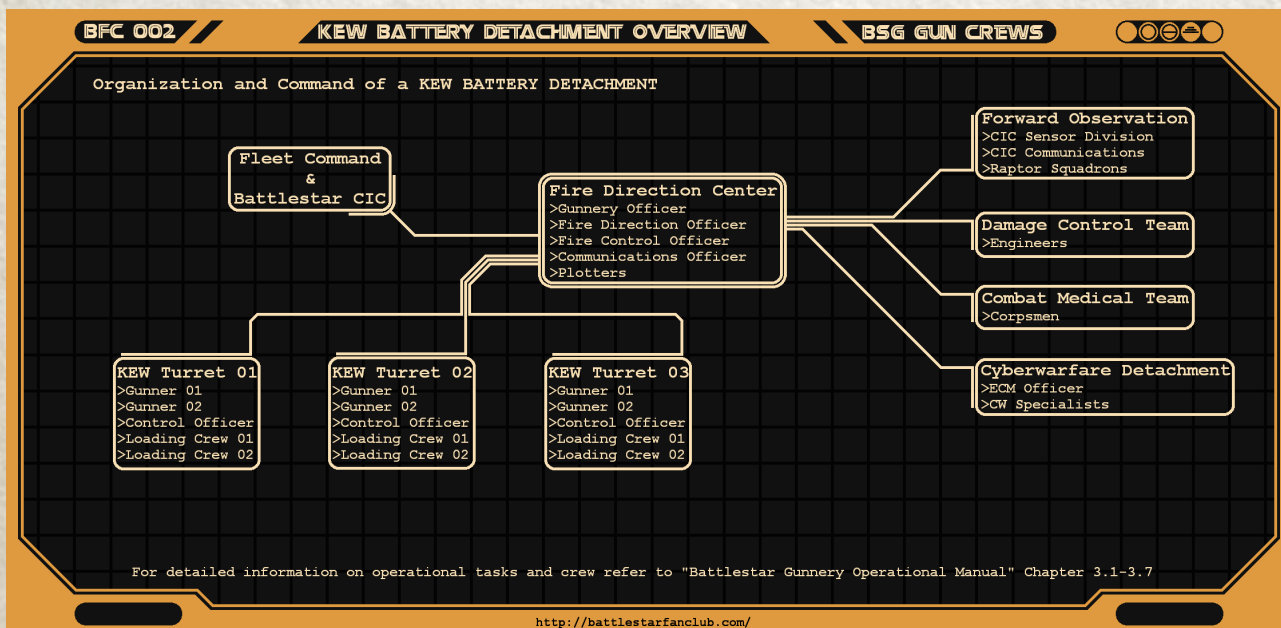
The frontal compartment contains two gimballed seats that keep the gunners always level with the ships horizontal axis. The gimballed seats also prevent blows and vibrations from affecting the Gun Team.

Gunners have access to a row of monitors and consoles for information provided by the Fire Direction, Forward Observation, and CIC. Additionally, there are independent DRADIS screens, communications devices, and Emergency Medical Kits.



The aft compartment allows access to ammunition hoists, automated loading machinery, and an emergency exit hatch should dramatic decompression be imminent.

4. Battlestar Gunnery Crews & Detachments



4.1 Battery Detachments

Both primary and secondary batteries aboard a Battlestar are divided into several gun detachments, usually based on their placement or ordnance for a specific mission. Each gun detachment is comprised of three divisions: Forward Observation, Fire Direction & Guns/KEW Turret Operation. All three work in close conjunction with the CIC communications and sensory divisions.

4.2 Forward Observation (FO) & Fire Direction

To effectively perform offensive operations, it is of utmost importance to first detect, identify and track the enemy. This holds true for all subdivisions of a Battlestars armament.

The Forward Observation division acquires information via sensors and sends instructions to the Fire Direction Center. These include brief target descriptions, recommended munition and any special instruction for focused fire or friendlies in the target zone.

After firing commences, FO issues instructions to adjust fire in four dimensions (spatial and temporal). If accuracy is acceptable, Forward Observation will call "fire for effect" (FFE).

The Fire Direction center computes firing data and fire directions for the guns. To that end, it determines precise target locations, movement, and range. It also accounts for friendlies movement, the ships maneuvering and the coordination of different gun batteries. The Firing Direction Center is also responsible to send all necessary information to the specific gun crews.

- **Forward Observers** are part of the Battery Detachment, but not necessarily present on the Battlestar itself. To acquire targeting solutions, Battlestars rely not only on their sensors, but also raptors and escort ships such as scouts and other Battlestar Groups.
- **The Gunnery Officer** is in command of the Battery Detachment and responsible for coordinating all three subdivisions. While the CIC will issue general orders for primary and secondary batteries, the CO of a Battlestar will rely on Gunnery Officers to perform specific offensive actions during combat.
- **Fire Direction Officers** are responsible for the computing and processing of incoming data (see above). Data can be computed manually, using special protractors and slide rules with pre-computed firing data. If data is primarily computed via console, the Fire Direction Officer will be supported by an ECO from the Cyberwarfare Division and ECM Detachment.
- **Fire Control Officers** work in close conjunction with Fire Direction and are primarily responsible for corrections of targeting solutions and coordination of turrets within the Battery Detachment. Among other things, they determine firing mode and distribution of targets among several gun detachments.
- **The CIC Communications Officers** primary role is to serve as the contact man between Fire Directions and Combat Information Center (CIC). This encompasses not only the passing on of orders but also constant reports on maneuvers, the position of friendly units and coordination with the command staff of the Battlestar.
- **Plotters** compile the information provided by the Fire Control Officer, the Fire Direction Officer, and the CIC Communications Officer into specific instructions for the Gun Crews. There are the essential conduit between the Fire Direction Center and the KEW Turrets, providing them with data in the shortest, most precise way possible.

4.3 Guns / KEW Turret Operation (KTO)

- **Gunner Team**

Every KEW Turret has two assigned Gunner Teams (active duty & reserve). Each Gunner Team consists of two gunners that were trained together and were specifically chosen as partners. To effectively operate the KEW Turret, gunner teams must share extensive experience in combat maneuvers and training simulations.

The two gunners are assigned to the forward compartment of each KEW turret, each controlling one of the two rifles mounted onto the turret. Rifles can be linked and synchronized for tandem or salvo firing. Gunners can assume direct manual control of the rifle and are required to conduct specific corrections based on onboard instruments. Their duty also includes visual confirmation of the destruction of enemy targets.

- **Control Officer**

The Control Officer receives information and orders from the plotter. They are also responsible for additional corrections and implementation of special orders. Control Officers also control the loading crew, ordnance flow, and emergency procedures.

- **Loading crew (x2)**

Loading crews oversee the automated loading mechanism of each turret and are required to make rapid adjustments and repairs during battle to guarantee a constant ammunition flow. Their responsibilities include ordnance changes and immediate damage control.

The following is a list of additional crews and detachments of Battlestar Gunnery. For more detailed descriptions refer to Document Battlestar Armament – Operational Manual 002 [#BA-OM-002].

4.4 Point Defense Network & Layered Perimeter Defense

- *PDWS Gunnery Officers*
- *CIC Communications Officers*
- *PDWS Forward Observation Detachment*
- *Fire Direction & Control Crews*
- *Magazine & Stowage Crews*
- *PDWS Battery Gun Crews*

4.5 Stand-Off Weapons Systems

- *Missile Combat Crew Commander (MCCC)*
- *CIC Communications Officers*
- *SWS Forward Observation Detachment*
- *Fire Direction & Control Crews*
- *Silo Crews*

4.6 Damage Control Teams

Damage controls are assigned to each Battlestar Armament Detachment and are coordinated by the CIC to react to immediate battle damage. Their responsibility for the Battlestars armaments is of utmost importance to prevent secondary explosions and rapid decompression of the magazines. Additionally, Damage Control Teams are often required to keep the weapons systems of a Battlestar operational during extended battles.

4.7 Cyberwarfare and Electronic Countermeasures Detachment

On most modern Battlestars, electronic warfare is part of the Battlestars Armament and a special detachment is tasked to secure and protect the Battlestars weaponry from enemy intrusions. During a possible cyber warfare attack, it is this detachment that coordinates cyber warfare as well as electronic countermeasures against hostiles. Under extreme circumstances, it is the Cyberwarfare Detachment that has the duty to disconnect all of the Battlestars networked systems to switch to full manual control.

5. Battlestar Raven Specific Battery Detachments

1.1 *Jupiter* Superheavy Fixed Frontal Battery Detachment

4 Superheavy Kinetic Energy Cannons

The four superheavy fixed frontal Kinetic Energy Cannons are organized as the first Battery Detachment aboard the Raven. Manned by senior gun crews, the Jupiter Detachment possesses the greatest firepower out of all gun batteries, capable of penetrating even the heaviest capital ship armor in a single salvo.

Due to its size, the superheavy battery relies on maneuvers for aiming and is only practical at long range engagements and attack runs.

1.2 *Epsilon* // *Omega* Frontal Battery Detachments

2x 14 turreted heavy KEW Batteries

The Frontal Battery Detachments Epsilon and Omega each encompass 14 turreted heavy KEW batteries, making them the largest Battery Detachments aboard the Raven. Arranged in frontal super firing position, Epsilon and Omega are capable of bringing their entire firepower to bear during a frontal assault.

Extended Fire Direction Centers enable these Battery Detachments to rapidly switch between concentrated salvo fire at long range and multiple target tracking at close combat. This mostly forward oriented firepower can break up entire enemy fleet formations and clears the path for the Battlestar and its escort vessels.

When using specialized Anti-Aircraft Ammunition (AAA), the Epsilon and Omega Battery Detachments are capable of projecting flak at medium range, protecting the entire Battle Group from incoming missiles and enemy fighter craft.

1.3 *Koppa* // *Sampi* Ventral Battery Detachments

2x 8 turreted heavy KEW Batteries

Battery Detachments Koppa and Sampi are both parts of the standard Mercury-Class armament and Raven's primary ventral weaponry. These ventral batteries play a vital role in enhancing forward facing and broadside firepower and are often used to protect the ships more vulnerable bottom hull.

KEW turreted Batteries of these Detachments are organized in typical pairs that will take on different targets during combat operations. Like in the original Mercury-Class design, these Detachments primary role is perimeter defense.

1.4 *Psi* // *Rho* Dorsal Battery Detachments

2x 6 turreted heavy KEW Batteries

Similar to the Battery Detachments located on the Ravens head section, the Dorsal Battery Detachments Psi and Rho are heavily inspired by Galactica's modified configuration at the height of the First Cylon War.

Dorsal KEW Batteries have been proven to be extremely effective during combat maneuvers against enemy capital ships and were an important addition to Raven's arsenal, allowing for more effective Offensive Firepower Distribution (OFD).

Conventional combat maneuvers of the Colonial Fleet traditionally aim to keep the Battlestar subjectively 'below' enemy vessels, allowing for Psi and Rho to bring their firepower to bear in conjunction with Battery Detachments Omega and Epsilon. During broadside combat, Psi and Rho not only enhance raw firepower but also offer more flexibility in maneuvers thanks to their unobstructed firing arcs.

1.5 Sigma // Lambda Broadside Battery Detachments

2x 6 turreted heavy KEW Batteries

Both hangar pods aboard the Raven Variant are outfitted with three additional weapon platforms nearly doubling the Battlestar Boardside firepower on the hangar pods alone.

Battery Detachments Sigma and Lambda fulfill a similar role to Psi and Rho. However, their firing arcs are limited to either port or starboard.

During extensive carrier operations, Sigma and Lambda often times use AA-Ammunition to provide cover for incoming Viper Squadrons during combat landing. These operations require expert marksmanship and a comprehensive understanding of both Viper maneuverability and the exact extend of flak projected by the KEW batteries. Mistakes can easily result in friendly fire, putting both gun crews and viper pilots in danger.

1.6 Zeta // San Broadside Ventral Battery Detachments

2x 7 turreted heavy KEW Batteries

Zeta and San encompass Broadside Batteries as well as additional forward facing firepower of the Raven. Their roles are versatile, providing additional firepower to other Battery Detachments, covering fire for Viper Squadrons, perimeter defense, and ship-to-ship broadside combat. Because of this, Zeta and San are used as the "proving grounds" for new Gun Crews. The youngest ones start at the back turrets 6&7 and slowly work their way forward as they rise through the ranks.

6. Operation and Tactics

6.1 Target Aquisition

6.1.1 Detect, Track, Identify

When engaging hostile forces, a Battlestar has to perform offensive maneuvers and directly controllable firepower against enemy units to take out mission-critical targets. To achieve these goals, three steps are essential:

1. Detect

2. Track

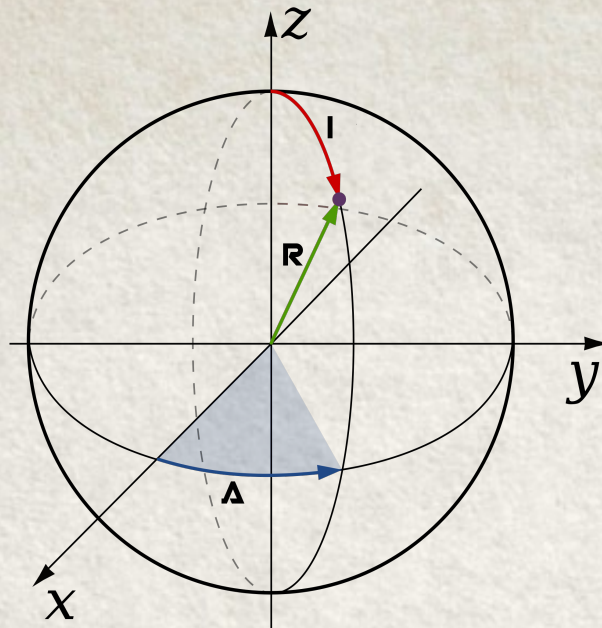
3. Identify

Any and all DRADIS and visual contacts must be detected, tracked and identified to be successfully engaged by the Battlestar's weaponry.

Once hostile contacts have been identified, **Target Priorities** are assigned to them by CIC Tactical, based on the tactical situation and operation goals.

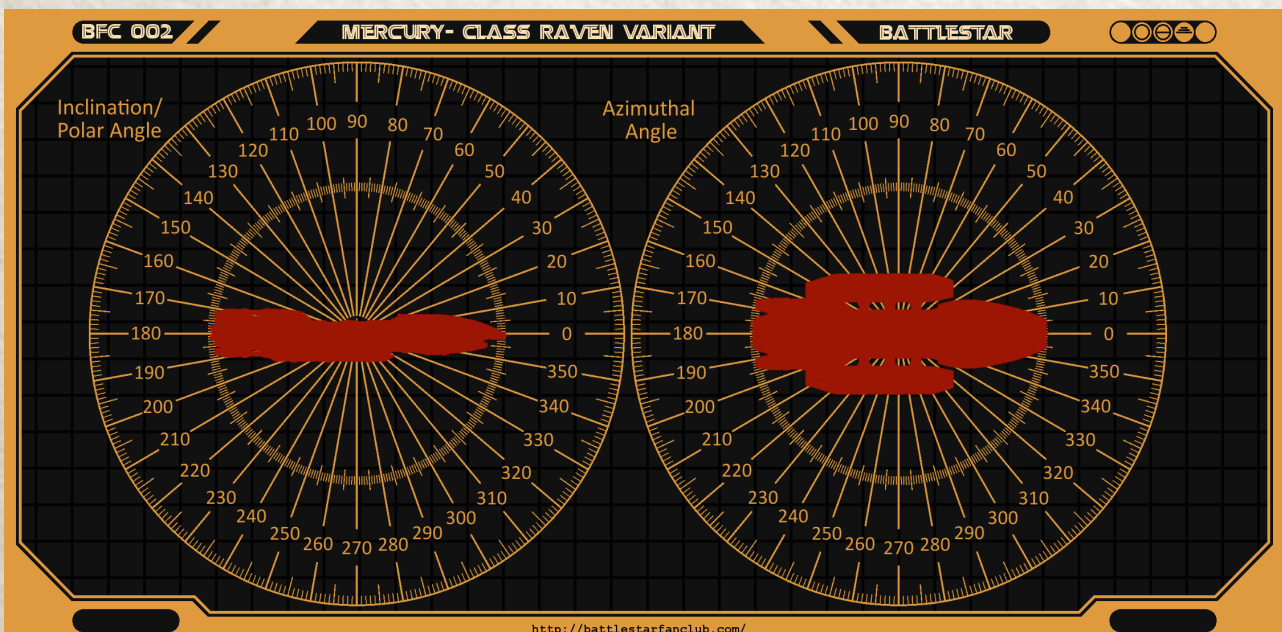
6.1.2 Target Position – Spherical Coordinates

The location of all detected contacts (C), including potential targets, is determined in a spherical coordinate system centered around the Battlestar (B).



Spherical Coordinates are defined by three values:

- **(A) Azimuth or Azimuthal Angle**
The signed angle on the reference plane measured from the azimuth reference direction to the orthogonal projection of the line segment BC on the reference plane. In the case of target acquisition, this reference direction is equivalent to the Battlestar's length axis.
- **(I) Inclination or Polar Angle**
The angle between the Zenith Direction and the line segment (BC)
- **(R) Radial Distance**
The Euclidean distance from Battlestar (B) to Contact (C)



<http://battlestarfanclub.com/>

Additional information about any given target includes:

Classification / Type of Vessel

Movement, Orientation, Velocity

Activity / Status

Example

A typical hostile target will typically be marked by the Fire Direction Center as follows:

FDC: "Priority Target: Cylon Basestar on 50°A / 20°I, Distance 2200, closing in, weapons ready."

6.2 Application of fire

A Battlestars offensive weaponry is extremely versatile and can adopt different types of firing for tactical purposes. The chosen application of fire depends on both the mission profile as well as the tactical situation and is determined by the CIC and Fire Direction Center based on the Data gathered by Forward Observation.

In general, each KEW Turret can either fire its two rifles independently or in tandem. Each battery detachment can either fire in salvos or independently. All KEW Turrets can use different types of ordnance for specific situations (refer to 2.3)

The following is a list of the most common applications of fire recognized by the Colonial Fleet:

- **Counter fire** has the immediate goal to defeat the enemy's means of offensive action (Anti Ship Cannons, Missile Launchers, Fighter Launch Tubes etc).
- **Suppression fire** degrades the performance of a target until it is unable to fulfill its mission, for example disallowing a carrier-type vessel to launch its fighters.
- **Harassing fire** is a random number of projectiles fired at random intervals, without any pattern that the enemy can predict. Designed to hinder enemy's movement and disturb formations.
- **Interdiction fire** is placed on an area of space to prevent enemy forces from deployment there. Commonly used to disallow oncoming enemy forces favorable attack vectors.
- **Defensive fire** is delivered to assist and protect a unit from oncoming enemy forces and fire.

6.2 Combined Arms

Like Viper Squadrons, Raptors or escort ships, no armament aboard a Battlestar is used exclusively alone during operations. The success of each mission depends on every unit ability to work in conjunction with different military assets to achieve complementary effects. The combined use of Battlestar armaments varies between operations and will thus be one of the most important issues to determine during preparations.

To enable all branches of the Battlestar Group to perform with maximum efficiency, routinely drills and maneuvers are necessary, as well as extensive training in combined arms operations. Gun Crews are required to always be aware of the specific roles each branch of the Colonial Military fulfills in each engagement, so as to understand the complementary effort of their own unit and act accordingly.

6.3 Equipment and Emergency Procedures

6.3.1 Gunner Team Equipment

- **Protective Suit**

All personnel assigned to KEW Turrets is required to wear protective gear at all times. The protective suit is a lighter version of the flight suit and provides limited life support capabilities in the event of a minor hull breach. Gun Team Protective Suits are colored bright green.

- **Light armored Vest**

The light armored vest issued to all Gun Teams provides limited protection against shrapnel in case of an direct hit against the turret. It will not protect against high velocity ordnance.

- **Saggitarius Helmet**

Specifically designed to be used in KEW Turrets, the Saggitarius-type protective Helmet offers in-built communications and a head-up display. Ear Protection is a vital part of the Gun Team's equipment, as the noise level aboard a Turret can reach critical levels that would cause permanent damage to unprotected personnel.

The helmet is not fully enclosed. In the event of a hull breach, the Saggitarius Helmet can be fully enclosed with an emergency mask, allowing for the Gun Crew to keep the Turret operational, even in the event of a hull breach.

6.3.2 Medical Equipment

Each KEW Turret is equipped with an Emergency Medical Kit "EMK" which is in a red colored case. The EMK pallet designators are A, B, C and G. The A pallet contains medications to be administered by injection. The B pallet contains items for performing minor surgeries. The C pallet contains diagnostic/therapeutic items consisting of instruments for measuring and inspecting the body. The G pallet contains a microbiological test kit for testing for bacterial infections.

6.3.3 Sustained Injuries

Should one of the gunners aboard a KEW Turret be injured during combat operations, the Control Officer is to be immediately notified. A medical team will be dispatched by CIC. The EMK may be used to stabilize the wounded.

In emergencies, the KEW Turret can be operated by a single gunner. Fire Directions will dispatch reserve Gun Teams to all Turrets that suffer casualties.

6.3.4 Emergency Procedures

All personnel aboard KEW Turrets is required to wear protective suit and helmet at all times. All damage is to be immediately reported to Damage Control and the Control Officer.

- **Hullbreach** Should the turrets hull be breached without damage to the rifles, operations are to continue. Emergency Pressure Seal kits are available in the front compartment of all turrets.
- **Fire Suppression** Fire Extinguishers are available in the front compartment of all turrets to extinguish small flames.
Uncontrolled fires are to be deprived of oxygen by opening emergency vents and releasing the atmosphere.

Airlocks and hatches will automatically be closed if damage to the KEW Turret is detected. The manual opening of closed hatches may only be executed after permission is given by Damage Control. Gun Teams and Control Officers are not to leave their post unless properly relieved.

Every KEW Weapon is to be kept operational under all circumstances.

6.4 Addendum

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- 2.^ Jump up to: [a](#) [b](#) [c](#) [d](#) "Mini Series, Part 2". *Battlestar Galactica: The Miniseries*.
- 3.**Jump up**^ Battlestar Galactica: Blood and Chrome, Battlestar Galactica: Razor webisodes.
- 4.**Jump up**^ Battlestar Galactica: Blood and Chrome
- 5.^ Jump up to: [a](#) [b](#) "The Captain's Hand". *Battlestar Galactica, 2004 series*.
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- 18.**Jump up**^

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