Space-Ops Strategy: Defining your defensive posture

http://imperialnews.network/2015/02/defining-your-defensive-posture/

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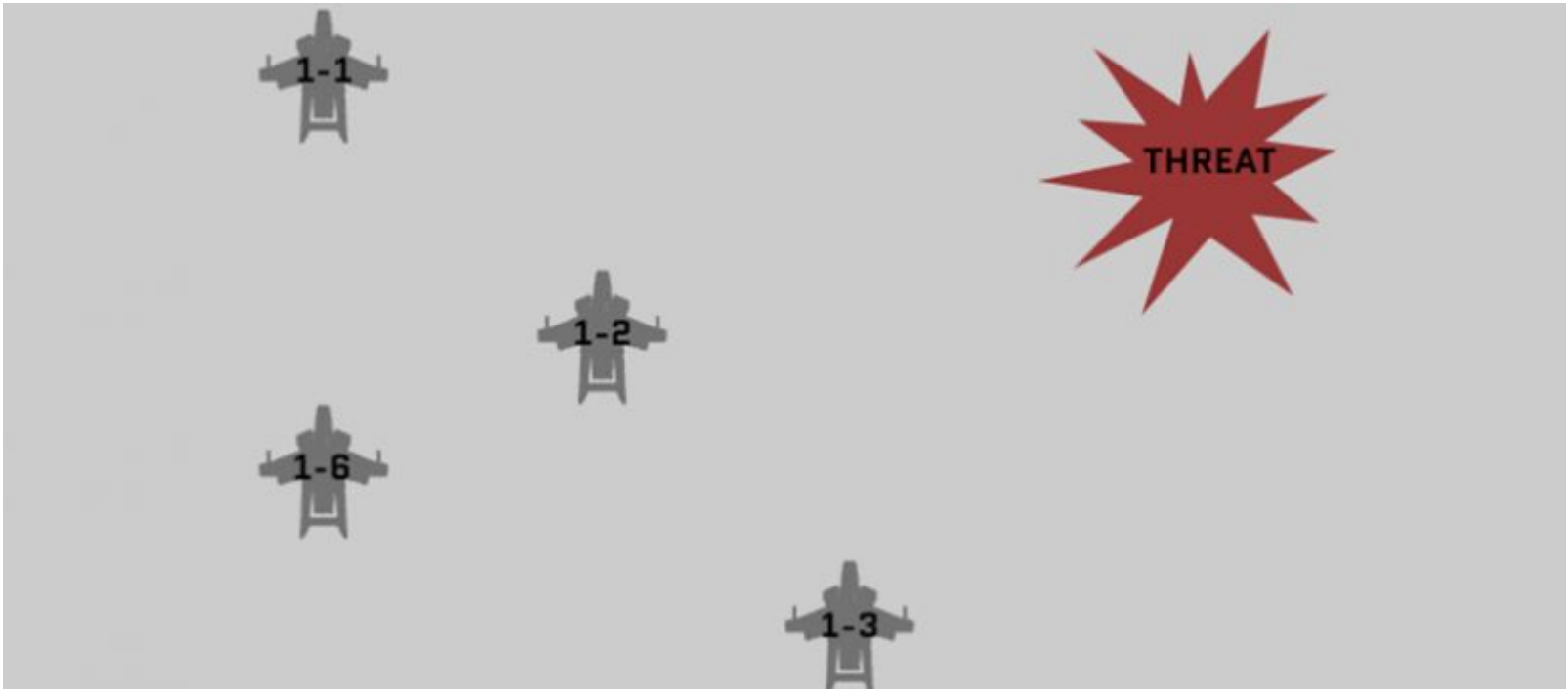


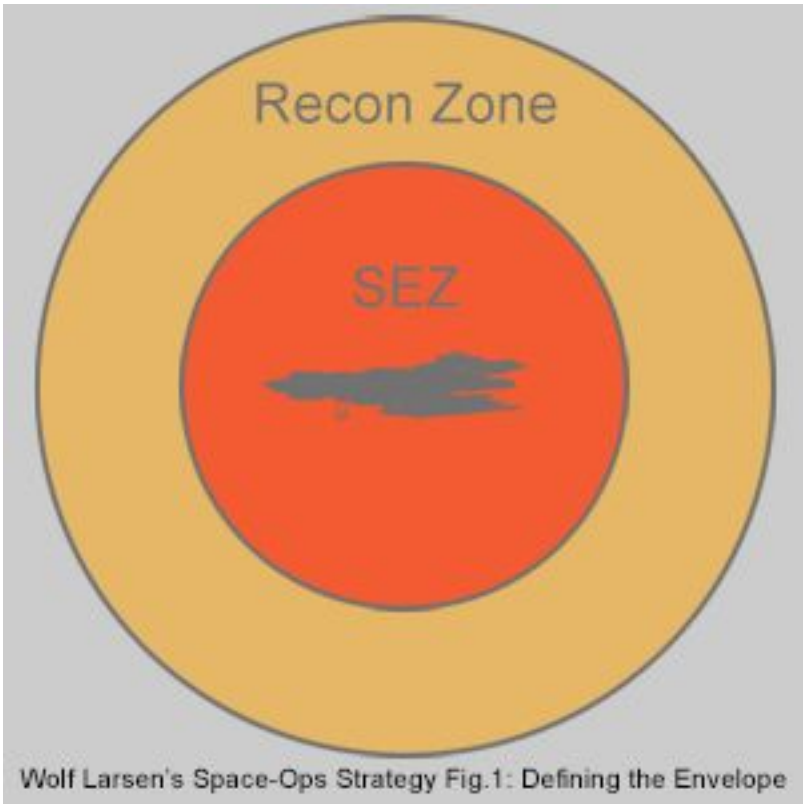
An important subject to consider when planning for the possibility of unwanted aggression during space operations is your unit's defensive posture.
Put another way, the relevant question is: How do you plan to secure your people and hard assets when traveling in space? How can you ensure your operation will be defensible?
We can further break this subject down into three equally important sub-topics:

- Planning and preparation
- Space control
- Defensive formations

I'm going to skip over planning and preparation today because this is a subject we plan to cover in-depth, in future Space-Ops Strategy posts. It's also difficult to talk about preparation as part of one strategy because it is a key activity associated with every strategy. Frankly, I'm thinking about developing a universal strategic planning framework which can plug into all operations.

Maintain space control

Similar to a planet-side naval force, it is necessary for any defensible unit or organization to maintain control over an envelope of space around their vessels. In modern naval warfare during the 21st Century on Earth, they referred to this as 'sea control' or 'command of the sea' and it extended below the vessels, to defend against submarines and above, to protect against airborne attacks.
Although it may seem obvious, it's worthwhile to point out that the term control, in this context, is quite literal. The basic, fundamental truth is that if you are able to deny aggressors access to the space around your vessel or fleet, their boarding capabilities are a non-issue.



Wolf Larsen's Space-Ops Strategy Fig.1: Defining the Envelope

The size of this envelope and the specific rules of engagement within each bubble are matters which will be decided at the discretion of the unit's commander. They are typically elastic depending on the threat profile of the current scenario and the unit's capability to efficiently control space.

As seen in figure 1 here, the envelope is actually made up of two, concentric, 3 dimensional bubbles of space around the vessel or fleet. The inner, red circle is the Space Exclusion Zone or 'SEZ'. The outer bubble is the Recon Zone, or limit of the operating unit's ability to detect incoming threats. A well-organized, and clearly communicating unit with enough vessels could further mitigate risks by expanding the Recon Zone out further, with scouts or out-riders.

As is the case with all things relative to the security of the unit or organization, the establishment and architecture of the envelope is at the discretion of the captain or commander. One possible variation is to have a declared stand-off or buffer zone around the Exclusion Zone. The unit's communications officer may go to the trouble to warn inbound, non-friendly units of their fate, should they cross into the SEZ from the buffer zone.

We will go into threat level management in subsequent posts at some length, but for the purposes of our discussion today, let's consider some examples:

- No threat: Assets are in hangar.
- Minimum threat: Assets are in tightly controlled UEE space.
- Moderate threat: Assets are in loosely controlled UEE space.
- High threat: Assets are in uncontrolled/lawless space.
- Extreme threat: Assets are in imminent danger of engagement.
- Engaged: Assets are in a battle.

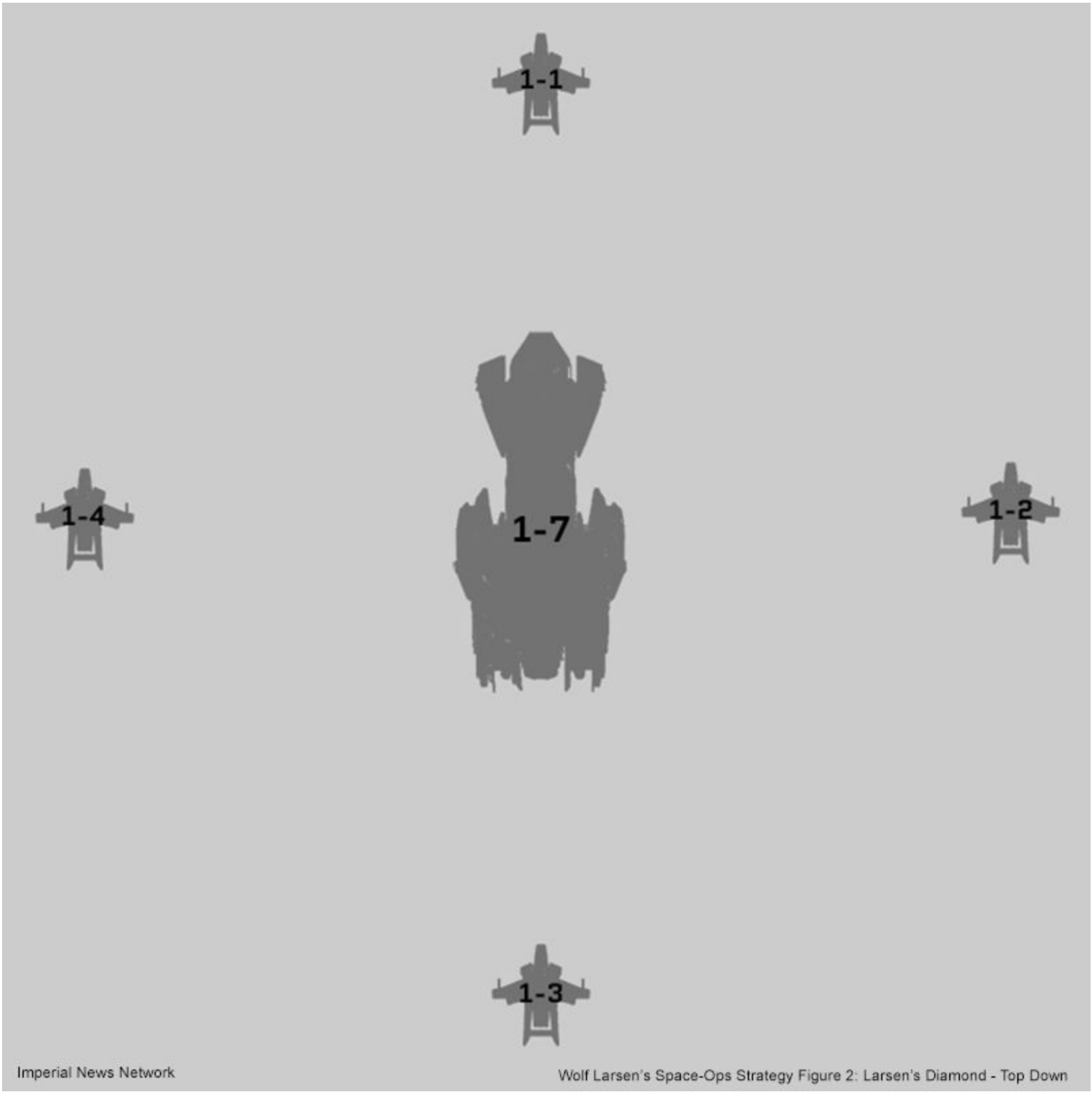
At threat levels High and above, a highly risk averse commander might give his units authorization to destroy any non-blufor (non-friendly) units which enter the SEZ without authorization.

Another question relative to the architecture of the envelope is the size of each zone. Naturally, the primary consideration is efficient control of space, but at threat level high or above the question is likely to be more about maximum range of standoff weapons. In essence, the prudent commander would do well to ensure the boundary of the SEZ is within his maximum range, but above the maximum range of his most likely aggressors. Hopefully it goes without saying, maximum range for Blufor includes escort vehicles within formation.

Formations for success

Within the military, police, and security industries, there is no debate on the value of employing scenario-specific formations or other maneuvering disciplines such as bounding, peeling, or tactical spacing. The fact is, better unit maneuvering mitigates risk and leads to better outcomes. There is little reason to believe this will not also be the case for units operating in space.

However, operating in space also has unique challenges and opportunities so the standard land, air, and sea formations such as wedges, lines, and columns are likely to come up short. First of all, space is 3 dimensional and attacks may come from any bearing (Azimuth) or altitude above or below the unit's beam. Coincidentally, the unit's direction is the direction of the command vessel (command vessel) and the unit's beam is the beam of the command vessel. For those without a nautical background, the beam of a vessel is the measurement of the width of the ship at it's widest point. It is also a plane 90 degrees to the center line or keel.
Consider the following, top down view of a formation I'm egotistically calling 'Larsen's Diamond'.



Wolf Larsen's Space-Ops Strategy Figure 2: Larsen's Diamond - Top Down

For the purposes of this discussion it doesn't matter what the exact hull types are. Our unique classes in the example are command vessel and fighter/escorts. Unit 1-7 is the command and the remaining vessels are fighter/escorts.
Unit 1-1 is the 'point' and her position should be at 1-7's zero degrees, abeam. (Neither above or below). 1-2 is abeam at 90 degrees, 1-3 abeam at 180, and 1-4 abeam at 270 degrees. As described in the previous section, their range would be set by the Commander's discretion and would likely be the boundary between the SEZ and Recon bubbles.

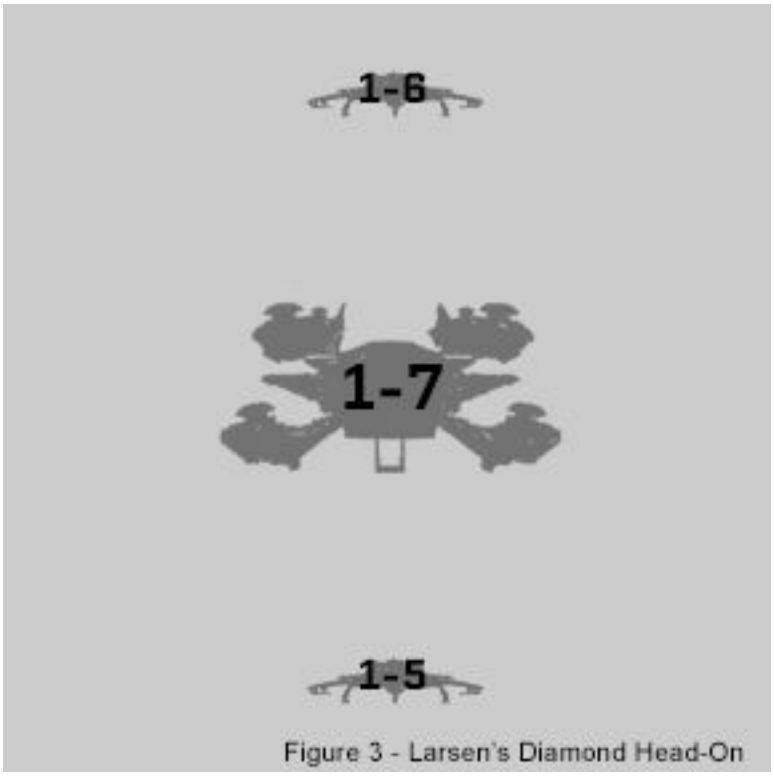


Figure 3 - Larsen's Diamond Head-On

Of course, this is not the full picture. Unlike a standard diamond formation, Larsen's Diamond includes an escort gunship at 90 degrees high, and 90 degrees low to round out the bubble, indicated here by units 1-5 and 1-6.

At the time of this writing members of Ghost SRE and the INN editorial team were still debating on how to call out the bearings of enemy contacts. I am personally leaning towards using compass headings relative to the command unit for azimuth and 1-90 degrees plus high! or low! for altitude headings.

Interestingly, this issue of how to call threats is a matter various commanders throughout the 'Verse should come to some consensus around. Otherwise it's going to make ship to ship and affiliated organization communication near impossible. Future editions of Space-Ops Strategy will be dedicated to the subject of tactical communication in space operations.

Larsen's Diamond is a great general purpose formation and can be used for maintaining security in any situation where the threat vector is presently unknown. In essence, it is a good way to monitor 360 degrees of space.

The Larsen Diamond can also scale infinitely. For instance, imagine a scenario where you are the captain of a single Constellation Andromeda with your own 6 fighter escorts. In this scenario your unit of 7 vessels are the point (1-1-1) for a massive battle wing in a Larsen's Diamond around a capital ship. In total, this fleet would be made up of 43 vessels. (1 capital ship, plus 7 vessels at each node in the Diamond).

But what if the threat vector is known, and you have time to reorganize your unit to provide appropriate mass in the right direction? Consider the following example, where you are the commander of a squad traveling through lawless space in a Larsen's Diamond in uncontrolled space and your 1-1 calls out:

1-1: "1-7 this is 1-1 I've got contact starboard side! Bearing 045 Altitude 10 degrees high. Looks like Vanduul Scavengers times four."

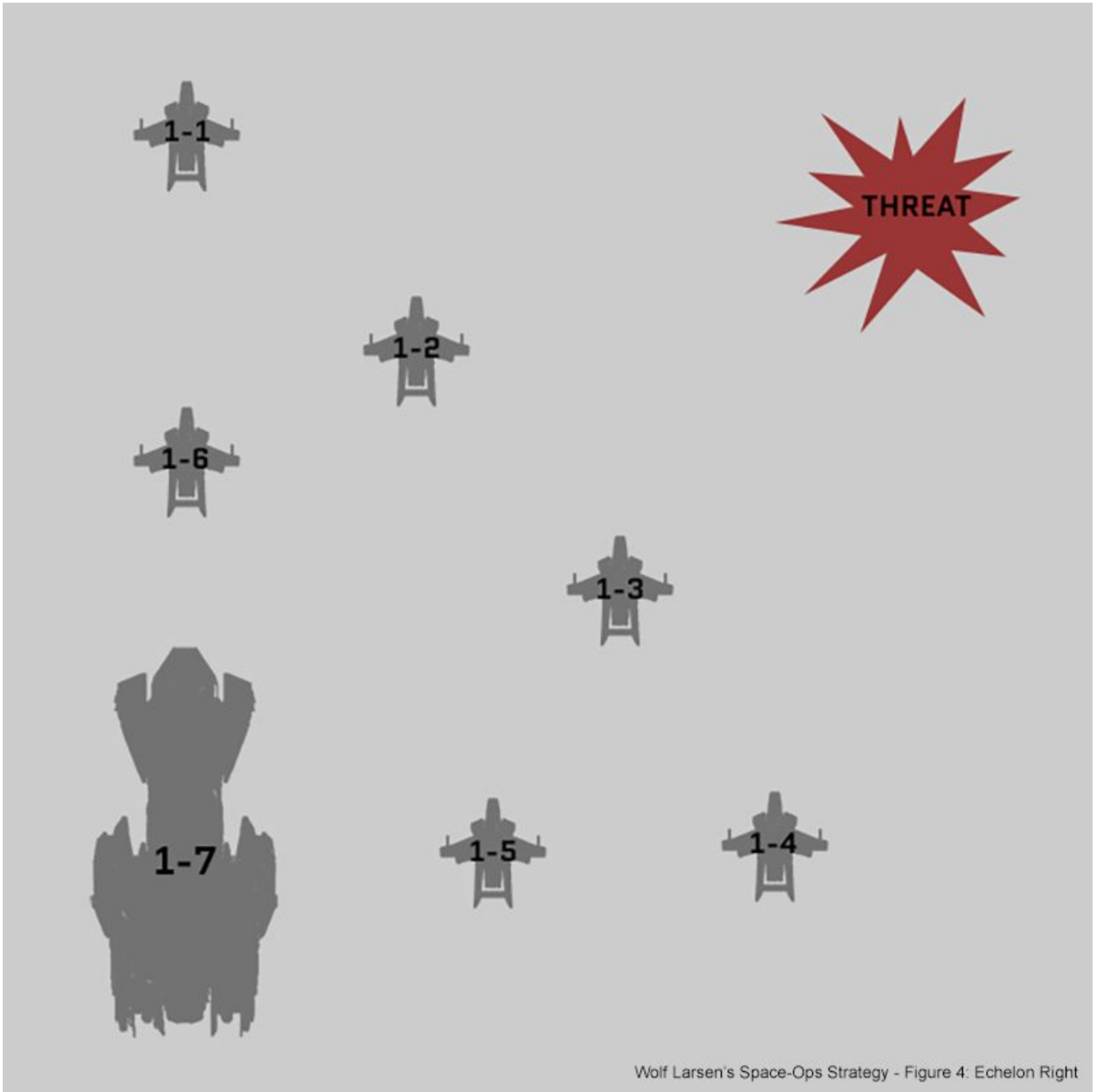
1-7: "1-1 copy that…Contacts bearing 045 altitude 10 degrees high. Fleet, move to echelon right."

1-1: "Copy, Echelon right.

1-2: "Echelon right."

etc.

In this situation the commander is ordering the fleet to move to a modified version of the old classic echelon right where the six units maintain their elevation in relation to the command vessel so 1-5 and 1-6 continue to maintain high and low security. See below:



Regardless of your specific approach to establishing and maintaining a defensive posture, the important detail is to think about this in advance, have a plan, and communicate it to your crew so everyone knows how to handle various situations.

Aarius's list of (stolen?) Ideas:

- Use reconnaissance element in circular patrol around Larsons Diamond, scanning and maintaining the "Recon Zone". See link below for CAP.
- As mentioned above, label HVU commanding unit as Actual, and base all directional callouts off of its heading. This requires a stable path of flight for HVU, which is also optimal for its gunnery battery.
- Adapt to incoming threats. Avoid sending all units to one threat, leaving the 180 vector wide open. 3:1 friendly to enemy ratio should be expected to win. 2:1 could be reckless, but depends on friendly force size and skill.

- If numbers do not allow for an acceptable response in force, a tactical retreat must be considered ASAP, and followed according to SOP.

- Escorts should be divided into a minimum of buddy pairs known as "strike groups", and ideally into larger “Elements”, labeled Alpha, Bravo, etc. Elements typically divide your force in half.

- A completely different strategy to the Larson's Diamond (ideal for PVE), is the CAP: Combat Air Patrol (ideal for PVP) https://en.wikipedia.org/wiki/Combat_air_patrol
- If you had an escort of 3 to 6 Super Hornets or Sabres, have them in relative close formation flying 3+ times the speed of HVU on a search and destroy mission around it. If you had 6 instead of 3, consider two of these instead of one.