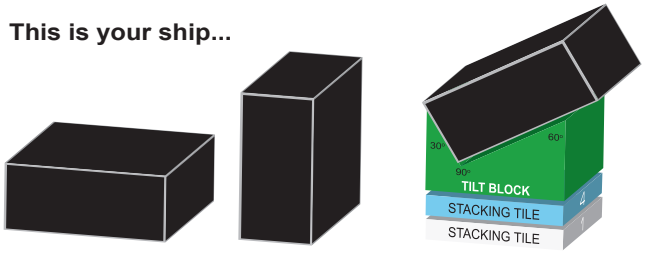
The Basics of 3D Space Combat

Saganami Island Tactical Simulator (SITS) uses the same 3-D movement and firing arc engine that ***Attack Vector: Tactical (AV:T)*** uses. This flyer covers the most challenging part of the game in one page!

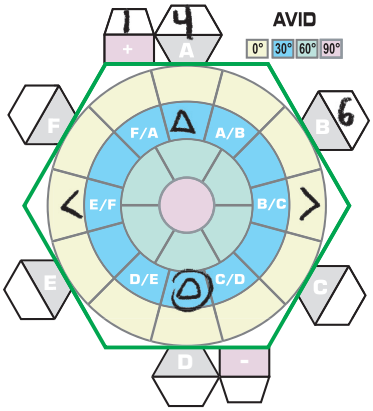
A ship's altitude and orientation is shown on the hex map, using box miniatures, stacking tiles and tilt blocks. This gives everyone the state of the battle at a glance.

This is your ship...



Level with the map plane | **Perpendicular to the map plane** | **Angled up at 30 degrees to the map and 5 altitude levels above it**

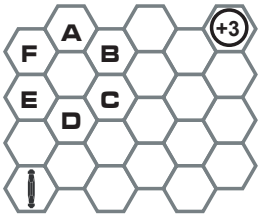
The AVID



The AVID (Attitude/Vector Information Display) handles all the math needed to fire weapons in 3-D. A small copy of the AVID is shown at the right.

The green hexagon is an enlarged view of the map hex our ship is in. Inside of it is a top down view of a sphere, with the north pole being the purple circle, going to 60°, 30° and 0° for green, blue and amber respectively. The rings are subdivided into spaces called "windows". A ship can be thought of as floating in the center of the sphere, with the nose and stern pointing at a window. In the illustration above, the ship's nose (the triangle) is facing direction A, tilted up at a 30° angle. The stern (shown by the semicircle) would be 180° (six windows) away, in the blue ring. We circle it to show that it's angled down. The port and starboard markers are 90° away from the nose and stern, and are shown with the two angle brackets, left for port, right for starboard.

The outer hexagons show our ship's vectors. This ship moves 4 hexes per turn in A, 6 in B, and 1 in +(Up).

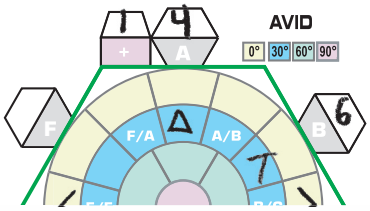


Calculating Bearing and Range

On the hex map at left, we have a ship with the orientation above, and a target 6 hexes away and 3 hexes above the ship. We'll use simple rules of thumb to find the AVID window the target is seen through, and mark it.

We know it's above us, so it'll be visible through the top half of the sphere. The next thing to ask is "do we see it through the hex side, or hex corner?" Clearly, we see it through the hex side facing B. To narrow down which ring it's visible through and the range, we use the Range Angle Lookup Table (RALT) on the weapon card. The color of the cell in the RALT shows which ring of the AVID the target is visible through; the number is the range.

4	4	4	5	5	6	7	8
3	3	3	4	5	5	6	7
2	2	2	3	4	5	6	7
1	1	2	3	4	5	6	7
0	**1**	**2**	**3**	**4**	**5**	**6**	**7**

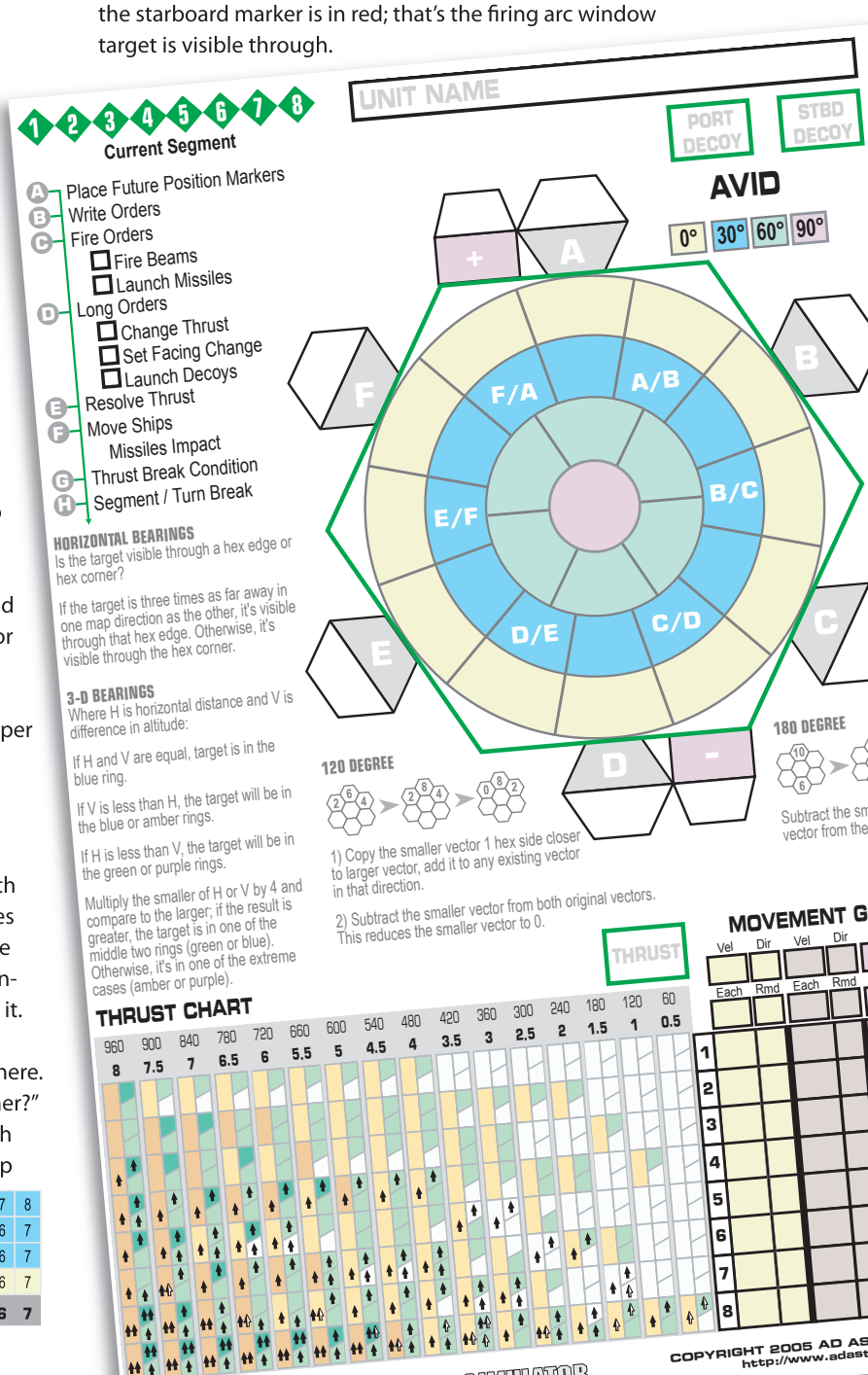


Cross-referencing the horizontal distance on the bottom with the vertical distance on the left, we see that the target is in the blue circle at a total range of 6. The bearing to the target is marked by a "T" on the AVID, shown at left.

Now we find what weapons bear on the target. We map the placement of the target on the AVID to a firing arc diagram. From the picture above, the target is one window forward (towards the nose) and above (towards the top of the ship) from our starboard side marker.

Weapon Firing Arcs

The firing arc diagram for a starboard broadside is shown here. Where the AVID is a top down view of a sphere, divided into windows, the firing arc diagram is the perspective from inside the sphere, looking out. The triangle is our nose (on the left edge of the diagram), semi-circle is the tail, and the angle bracket for the starboard marker is in the center. One window forward and up from the starboard marker is in red; that's the firing arc window target is visible through.



Introduction to Missile Defense

First we need to mark the number of incoming missiles. On the reverse side of the SCC, there's a part of the play aid with lots of small circles; these are used to mark the missiles in incoming salvoes. Each row of missiles is one complete salvo; a target taking the Reliant's full fire rate would circle 5 rows of 22 missiles.

Defenses are divided into layers, each layer acting to eliminate some of the incoming salvo or (in the case of the sidewall layer) to reduce the total damage pool. Defenses are always applied in order from top to bottom and differ in that some are based on the number of incoming missiles and some are based on the number of defensive shots.

All of the defensive layers share the same two mechanics. These are the variance roll (3d10v) and the kill chart.

3d10v is similar to 3d10+ (roll three 10-sided dice and add the results together) but uses two dice of one color (called the key pair) and one of another color. Unless the rolls on the key pair are equal, all 0 results are treated as zero, not ten. For example, assuming the first two results are the key pair, a roll of [2,0,7] is 9 while a roll of [5,5,0] is 20.

The kill chart determines how many missiles are killed, by cross referencing the effectiveness percentage and a number of incoming missiles or defensive shots. To determine the number killed, break up the number of incoming or shots into 100's, 10's and 1's, comparing each on the chart and adding the results together. For example, if 136 missiles enter a layer with an effectiveness of 28% you use the table three times, on the 100, 30 and 6 rows. The total number of kills for the layer [28+8+2 = 38 missiles] is crossed off the total incoming missiles.

The ECM layer is the first to be applied. To determine the effectiveness of the layer, add your base ECM, all active decoys, the missile quality level and a variance roll. Compare the final effectiveness with the number of incoming missiles to determine the number killed.

The next three layers (countermissiles, point defense clusters and lasers) are all calculated in the same way. First you need to calculate the number of defensive shots for each layer. This is done by multiplying the number of countermissile tubes, point defense clusters or lasers by the number of incoming salvos. Once you've done that, the effectiveness of the layer is handled like the ECM layer, adding the quality of the system to the missile quality and a variance roll.

The sidewall layer works a little differently than the previous layers. Before you apply the sidewall layer, multiply the total number of missiles remaining by the damage per missile to determine the total damage hitting the sidewall. After that, the sidewall effectiveness is determined be adding the sidewall strength to the rolled ship bonus (if any) and the variance roll. Cross reference the damage points against the final percentage, and that's the amount that strikes the hull of the ship.