STARSHIP SYSTEMS

After many attempts to put together the ideas presented in the *Narrator's Guide* regarding Sensor Systems on a starship I have given up. Not because they are inaccurate, the creators of this game definitely brought the essence of Star Trek to the game, but not in a manner that it is understandable for me. I also see some areas where the game system is left weak and so I have taken the time to put my thoughts into clarifying starship sensor operations, range and ship contact. This will combine the concepts I have read in both the *Narrator's Guide (NG)* and *Starfleet Operations Manual (SOM).*

SENSORS

In the *Narrator's Guide* on page 101-103, an extensive description of sensors and how they operate is given and I am not going to present any changes in regards to these rules. Table 7.2: Sensor Test Modifiers and Table 7.3: Extended Sensor Test TN's are re-presented in this addendum but it is to be understood by the reader that I have made no change to the tables nor how they are to be used.

TABLE 7.2: SENSOR TEST MODIFIERS

Scan for	TN Modifier
General Information (mass, diameter, spectral class, radiation, atmospheric content)	TN 5
Locate abundant specific element, specific life-form (iron, granite, nitrogen, radiation)	TN 10
Uncommon specific element (uranium, dilithium, duranium, a specific Human among aliens)	TN 15
Rare or difficult to detect elements (antiprotons, kelbonite, a specific Human among Humans)	TN 20
Specific elements beyond sensor capacity (solanagen, silicon based life-forms)	TN 25

* Sensors can be recalibrated to detect specific elements, reducing the TN (see "Recalibrate Sensors," page 102 *Narrator's Guide*.

TABLE 7.3: EXTENDED SENSOR TEST TN'S

Area	AGGREGATE TN
Planet	TN x 10
Continent	TN x 8
City	TN x 6
City Block / Large Ship	TN x 4
Building / Small Ship	TN x 2
Room	TN

SHIP EMISSIONS

A starship is a very intricate piece of machinery and it is very rare that a vessel at any great speed will not be emitting some type of radiation. From navigation beacons, sector scans, radio communications, or deflectors, there are many detectable emissions coming from a ship. Even the ship's warp core will leave an evident trace of its passing.

To keep the ship and crew safe, many systems need to be running to make sure there are no collisions with some object in space or even another ship. Still, a captain in a tactical situation may wish to control the level of emissions that his ship is sending out into the void to gain an advantage over an enemy or to approach undetected – it is called Emission Control or EMCON. I have developed three levels of EMCON that a ship can travel under (based upon information taken from both the NG and the SOM. It is to be understood that the emission levels listed do not account for Cloaking Devices, which I believe have been represented very well in the core books.

EMCON 1

Under EMCON 1, basic systems are left operational – life support, navigational deflectors, and passive sensors. All of the following systems must also be shut down – communications, active sensors, warp drives, weapon systems, and even internal lights at times.

This emission level is called running silent (as in the NG). In this state, the ship can still attempt to detect other ships passively (a difficult task made easier or more difficult by the other ship's EMCON level) but its purpose is to primarily disappear electronically and perhaps sneak in on a target. Understand that no matter how many systems a ship can shutdown, it will not detriment another vessel that is running at EMCON level 3.

EMCON 2

Under EMCON 2, the ship primarily runs on long-range navigational sensors and a full array of passive sensor systems. Depending on the mission, the captain may order a full sensor sweep – including active sensors – in periodic intervals.

This emission level allows a captain to take quick looks about his ship to make tactical or strategic maneuvers as needed. It protects the ship from any possible obstructions in its path but does not blatantly give the ships presence away. Even if another ship should detect the EMCON 2 level ship's momentary active sensors scan, it may not confer enough information to allow a lock or to locate the target.

EMCON 3

Under EMCON 3, the ship is running at full active sensors and other radiations. Usually ships within known sectors of space will use this tactic to make sure nothing has slipped by; also ships on science missions will radiate in this manner.

A ship at EMCON 3 is rarely spoofed by another ship at a lower EMCON level but they do give their presence away much more easily by their radiation.

TABLE 0.1: EMCON SUMMARY

EMCON 1	Running Silent
EMCON 2	Periodic Sensor Scans (SOP for ships Under Weigh)
EMCON 3	Full Active Sensors (SOP for ships on Survey and Scientific Missions)

TABLE 0.2: EMCON MODIFIERS

Detecting Ship	Radiating Ship		
	EMCON 1	EMCON 2	EMCON 3
EMCON 1	+15	+0	-5
EMCON 2	+10	-5	-10
EMCON 3	+5	-5	-10

Passive versus Active

How does a captain manage their mission – does the ship need to travel stealthy or is it on a science mission of discovery? Anytime a ship radiates, it makes it easier for it to be detected, but at the same time for it to detect a target. Unfortunately for a radiating ship, it gives itself away more easily than the chance it gains by its active sensors in detecting a quiet ship. Think of it as two people in a pitch-dark room and one has a flashlight. The individual without the light can easily see the other (even at great distances) while still being hidden, but once the light is cast on them they will have a hard time from then on to evade.

So why use sensors at all – why not travel discreetly and rely on passive listening? This is a problem for one reason because ships do not get far on impulse travel. Warp speed allows much further and rapid rates of travel but the warp core leaves a detectable signature. To get anywhere it is necessary so cannot be avoided. Another problem with silent running is once the enemy has detected a quiet ship; the quiet ship is at a very big disadvantage, as they must now spend time bringing systems back online.

This is why EMCON is definitely a strategic and/or tactical decision that captains must choose.

Ship Range

Two starships approaching each other, whether aggressively or for any other purpose, both have an opportunity to try and detect the other but the range that they are apart also plays a role in the target number needed to be rolled.

Range and Table 7.7: Starship Range Increments are both given on page 110 of the NG. I offer the following alterations in the encounter rules given for ships and an alteration to the table.

TABLE 7.7: STARSHIP RANGE INCREMENTS

Range	TN Modifier	Approximate Distance
Point Blank	-2	1,000 KM
Short	0	10,000 KM
Medium	+2	50,000 KM
Long	+4	100,000 KM
Extended	+6	200,000 KM
Extended +1	+2 per band	+100,000 KM

The base TN to detect another ship is 10 (or the cloak rating if available) and then adjusted by both the Range and EMCON modifier. The player may then roll a Sys Ops (Sensors) test roll against the adjusted TN of the other ship. To this roll the player may add any sensor bonuses (based on the ship's quality of sensors) or personal bonuses that their character may have with the skill. Other physical modifiers or equipment modifiers may be added if the narrator deems them appropriate. Hazards may also play in to the situation and whether the ships can 'see' each other.

Once a ship has detected the presence of the other, all combat and maneuvers are performed as normal.

Bringing It All Together

Now that we have adjusted the rules on how the sensor emissions and the range between two ships can determine TN's, lets look at a couple of examples:

The U.S.S. Columbia is approaching an unknown vessel that the crew are not even aware is there yet. The Captain of the Columbia has ordered the ship to EMCON 2 as it travels through this sector of space. The yet undetected enemy vessel is a Klingon B'rel class that has snuck into Federation space and is traveling at quarter impulse and at EMCON 1. The distance between the two ships are 300,000 KM but that distance is rapidly shrinking due to the Columbia traveling at warp.

Round 1 – Columbia attempts to detect. Starting at a base TN 10 we add +10 for the radiation levels of the two ships (cross-reference on Table 0.2 from the detecting ships EMCON level to the target's level) and then we add the Range modifier of +8 for a net TN of 28. The sensor operator rolls his dice and gets a 4 and a 6 and then adds their skill total of +11 for 21 – a failure. The Columbia does not know the B'rel is there yet.

The Klingons are attempting the same thing. Starting at a base TN 10 we add +0 for the radiation levels of the two ships (cross-reference on Table 0.2 from the detecting ships EMCON level to the target's level) and then we add the Range modifier of +8 for a net TN of 18. The sensor operator rolls his dice and gets a 3 and a 2 and then adds their skill total of +9 for 14 – a failure. The Klingons are also unaware.

Round 2 – Columbia attempts to detect again but range has now just decreased to 100,000 KM. Starting at a base TN 10 we add +10 for the radiation levels of the two ships (cross-reference on Table 0.2 from the detecting ships EMCON level to the target's level) and then we add the Range modifier of +4 for a net TN of 24. The sensor operator rolls his dice and gets a 1 and a 5 and then adds their skill total of +11 for 17 – a failure. The Columbia still does not know the B'rel is there yet.

The Klingons are attempting the same thing. Starting at a base TN 10 we add +0 for the radiation levels of the two ships (cross-reference on Table 0.2 from the detecting ships EMCON level to the target's level) and then we add the Range modifier of +4 for a net TN of 14. The sensor operator rolls his dice and gets a 5 and a 4 and then adds their skill total of +9 for 18 – a success. The Klingons are aware of the approaching enemy vessel, now what to do?

Sources (Bibliography)

Many of the modifiers come from a source in the core books as listed below color of text matches pertaining modifier):

- A ship Running Silent has a +15 TN Modifier (NG page 103)
- A ship running on Survey or Sicentific Missions with all sensors active is easir to detect; so it has a –10 TN modifier (SOM page 6)
- A ship using Active Sensors reduces the detection TN by 5 (SOM page 6)
- Normal TN detection number is 15 (SOM page 6), 10 (NG page 111)