INTRODUCTION TO STAR FLEET BATTLES CADET TRAINING HANDBOOK
(Minimal rules without instruction scenarios.)

(B2.0) SEQUENCE OF PLAY
The game is played in a succession of turns. As noted, each turn consists of a number of impulses, which are repeated for each turn. Each impulse consists of a number of steps, which are repeated for each impulse. The steps are defined on the Basic Impulse Procedure Chart. (Find this chart now and read it.) These steps must be performed in their exact order. You cannot go back to a previous step, although that step will happen again in the next impulse.

(B3.0) ENERGY ALLOCATION (Cadet Version)
In the energy allocation rules, players must determine how much power (energy) is available and how to use it most wisely. You cannot spend energy that you do not have. You can use batteries to save some energy for later use. Energy is calculated and allocated on an Energy Allocation Form. There are two of these included with the game. One is the Cadet Energy Allocation Form. The other form is the standard Energy Allocation Form. It is somewhat more elaborate, with several additional lines. Each turn during the Energy Allocation Phase, each player, for every starship he controls, must fill out the next column of his Energy Allocation Form. Specific instructions for filling out the form are given on a line by line basis, as follows:
1. WARP ENGINES: This is the amount of warp power available. Simply count the undestroyed warp engine boxes on the ship's SSD.
2. IMPULSE POWER: This is the amount of power available from the impulse engines. Simply count the number of undestroyed boxes.
3. REACTOR POWER: This is the amount of power from nuclear reactors. Marked APR for Auxiliary Power Reactor on their SSD.
4. TOTAL POWER: This is the total amount of power available from all sources other than batteries. Assuming that the ship has not been damaged, line 4 will have the same number each turn.
5. BATTERIES AVAILABLE: This is the number of batteries holding power available for use. These are charged at the start of the scenario.
6. BATTERIES DISCHARGED: This is the number of batteries previously used. The total of lines 5 and 6 will always equal the number of undestroyed battery boxes on the SSD. At the beginning of a scenario, the batteries will all be charged. Careful players save their batteries until the ship is heavily damaged and use them to fill in, temporarily, for destroyed engines. Skillful players, however, use their batteries constantly for that one additional unit of power that can be critical. Batteries destroyed in combat are presumed to have been those previously discharged, if any such
batteries are available.
7. LIFE SUPPORT: In the Cadet Game, your Chief Engineer has allocated power for this function (outside of the 20 points you will have to work with), so you need not worry about it.
8. FIRE CONTROL SCANNERS: As with Life Support, this is ignored in the Cadet Game.
9. PHASERS: Energy for phasers is explained below.
10. TORPEDOES: This line is used for photon torpedoes, plasma torpedoes, disruptor bolts, (and other heavy weapons). The allocation of energy for each weapon (system box) is recorded separately on one line here. The specific method of allocation for each weapon type is covered within the rules on that weapon type (below).
11. SHIELDS: Shields require energy, but your Chief Engineer has already taken care of that.
12. GENERAL SHIELD REINFORCEMENT: Not officially used in the Cadet Game. Once you've learned all the rules you will want to use it.
13. REINFORCE SHIELDS: Not used in Cadet. Once you've learned all the rules you will want to use it.
14. MOVEMENT: Energy is required to move the ship. This energy can come from either warp or impulse engines. No more than one unit of power can come from impulse engines, and it will provide one movement point regardless of the size of the ship. Warp energy provides movement at a rate of one point of energy to one hex of movement (For the move cost =1 ships). For example, to move at a speed of 8 would require one point of impulse power and seven points of warp power or eight points of warp power. There is a limitation on changing speed. You cannot (in Scenarios #4 through #6) increase your speed by more than eight points

between one turn and another. (This assumes that you have power available to accelerate by that much). You can slow down between turns as much as you like. For example, the Constellation moves at speed 5 on the first turn. On the second turn, it could select any speed between 13 (5+8=13) and 0. There is no requirement in the rules that a ship has to move at its top speed every turn. Note also that at higher speeds it is more difficult to change directions. Most importantly, note that power for movement must be paid EVERY turn. After Scenario six is is a limit of 10, not 8.

15. DAMAGE CONTROL: Not used in the Cadet. Once you've learned all the rules you will want to use it.
16. RECHARGE BATTERIES: Energy allocated on this line will recharge previously discharged batteries. For example, on turn 1 you want to use 22 points of power, so you use the 20 from the engines and reactors and 2 points from the batteries. On turn 2, you can use no more than 20 points of power (as the batteries are empty); you might spend two of those points on this line to recharge the empty batteries.
17., 18., 19. These lines are not used in the Cadet Game.
20. TOTAL POWER USED: This line is used as a final mathematical check to make sure that you have allocated the correct amount of power. This number cannot be more than the total of line 4 (Total Power) and line 5 (Batteries Available). It also serves to determine if you have discharged any batteries. A ship is never required to expend all of its energy, but any unused energy on a given turn cannot be used later. (It was never generated; your engineer reduced the output of the engines.)
21. BATTERIES DISCHARGED: This is a record of the number of batteries which were discharged on the current turn. It is used to adjust lines 5 and 6 on the next turn. This number will be the difference between lines 20 and 4, if line 20 is larger. If line 20 is smaller than or equal to line 4, this number will be zero. Keep in mind that each battery holds one point of power.
NOTE: Except when specifically stated to do so, energy does NOT carry over from turn to turn.
EXAMPLE: If power was allocated to movement on a given turn, this power could not be used to move the ship on a later turn. If five units of power were allocated to a ship on turn 5 and none on turn 6, the ship would move five hexes on turn 5 and would not move at all on turn 6. If energy was allocated to disruptors on turn 5, and not used, this power is lost and cannot be used to operate the disruptors (or anything else) on any later turn. ONLY in the case of phasers is power carried over from one turn to a later turn (due to the capacitors). In some cases (e.g., photon torpedoes) energy must be expended over a period of two or more turns. The energy expended on each of those turns comes from power generated during each specific turn.

(B3.0) ENERGY ALLOCATION (Graduate Version)

Several additional functions are required in the Standard Game. Note that you must use the Standard Game Energy Allocation Form rather than the Cadet Energy Allocation Form.
STEP 7 LIFE SUPPORT: All of the ships require one point of power for life support. This must be allocated every turn, or the entire crew will perish immediately.
STEP 8 FIRE CONTROL: All of the ships require one point of power for fire control. If this point is not allocated on a given turn, the ship cannot fire weapons during that turn.
STEP 11 SHIELDS: All standard ships require 2 points of power to activate their shields (i.e., for the shield boxes on the SSD to block damage). If this power is not allocated, the shields do not function and are ignored.
STEP 14 MOVEMENT: Speed cannot increase by more than double the speed on the previous turn, or by more than 10, whichever is greater.

(B3.2) FRACTIONAL ACCOUNTING

This section is entirely optional, and you may wish to skip it for now and return to it later. You will find it in Basic Set and it is important to playing Captain's Edition Star Fleet Battles. Many functions in the game require less than one unit of power. In this scenario, for example, the Orion ship needs only 2/3 of an energy point to move one hex, only 1/2 of an energy point to fire a phaser-3, and only 1/5 of an energy point to operate a single transporter. As fractions are rounded up, however, the act of moving 10 hexes (6-2/3 energy points rounded to 7), firing one phaser-3 (1/2 energy point rounded to 1), and operating two transporters (2/5 energy point rounded to 1) would require 9 points of energy. Players with passing mathematical skills can gain the effect of slightly more power by calculating all power use in fractions, rather than whole numbers. Using fractions (6.667 + 0.50 + 0.40 = 7.567 rounded to 8) you could save one energy point above, enough to fire a phaser-1. Batteries can hold less than a full point of power, so you could leave the above answer at 7.567 and store .433 points of power in a battery, if you wish.

(C1.0) GENERAL MOVEMENT RULES

Starships move across the map by impulse power and warp engine power. The speed of most ships in the game varies from turn to turn, depending on the amount of power which is allocated on any given turn for movement. Each hex moved into during the course of a given turn equals one times the speed of light.

(C1.1) PROCEDURE
Ships move from hex to adjacent hex on the map. Every time that a ship moves, it will enter an adjacent hex. A moving ship (or other unit) cannot skip hexes. A ship moves no more than one hex per impulse and will probably not move during every impulse of the turn. Each ship must always be within a single hex and must always be faced directly toward one of the six adjacent hexes.
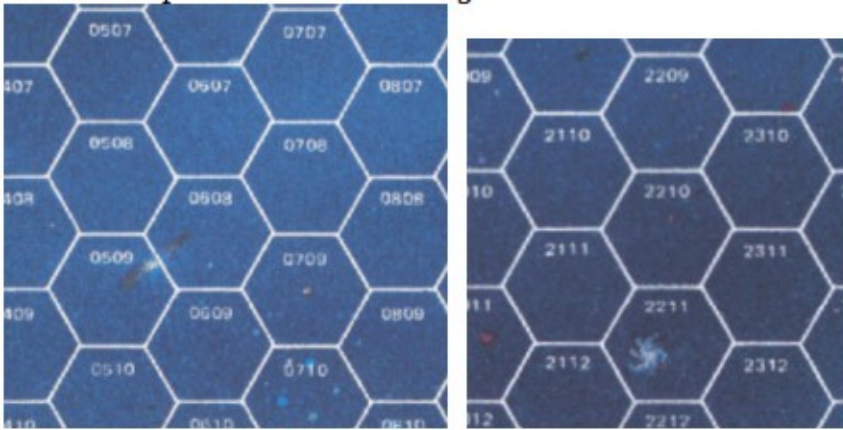

CORRECT   INCORRECT

(C1.2) FACING
A ship may be faced in any one of six different directions. These directions are designated by the letters A through F. Note hex 2603 in the top right corner of the sector B map.

Arranged around this hex are these six letters. Ships moving in direction A move in the direction they would move in IF they were in hex 2603 and were facing toward hex 2602 (the hex with the A written in it.)

Thus a ship in hex 0608 facing in direction A faces hex 0607, while a ship in hex 2210 facing in direction C faces hex 2311.

Note the six numbers around hex 0314.

These are used in some advanced rules to provide for random movement (where a die roll determines direction).

(C1.3) ORDER OF MOVEMENT
The scenarios in Cadet Training Handbook use a movement system known as free movement. Under this system, whenever the Impulse Movement Chart calls for a given ship to move, the owning player may move it in any direction he wishes, within the limits of the ship's turn mode (which tells you how often the ship can turn) and other rules. If two or more units are to move in the same impulse, they are moved in this order: Monsters (Scenario #11), ships, shuttles, seeking weapons, tactical maneuvers (Scenario #10). In each category, slower units move before faster ones. If two units are to move at the same time, the owning players write down the intended movement (secretly), then reveal these written orders and move the units as stated.

(C1.4) PERFORMING MOVEMENT
Each ship will move one hex, and only one hex, during each impulse in which movement is called for by the Impulse Movement Chart. (In the first scenarios, the ship will move in every impulse.) The specific impulses are determined by the IMPULSE CHART. The actual movement and firing of weapons is done during the Impulse Procedure. During our first few scenarios, each turn is divided into 8 impulses. Later, we will use turns divided into 16 and (eventually) 32 impulses.

(C1.41) GENERAL: Each turn is divided into a number of impulses. Depending on the game 8, 6, or 32 impulses per turn.

(C1.42) MAXIMUM SPEED: In scenarios with 8 impulses, drones, plasma torpedoes and ships will move at speed 8 unless stated otherwise. In scenarios with 16 impulses, drones(unless stated otherwise) and plasma torpedoes will move at speed 16 while ships will move at a speed between 0 and 16. In scenarios with 32 impulses, drones(unless stated otherwise) and plasma torpedoes will move at speed 32 while ships will move at a speed of no more than 31 hexes per turn. Ships can change their speed each turn; seeking weapons travel at a constant speed.

(C1.43) MOVEMENT PROCEDURE: During the Impulse Procedure, the various units on the map(including shuttles, drones, and plasma torpedoes) are moved by a proportional movement system. In simple terms, this means that if the Klingon ship (in Scenario #3) is moving at eight hexes per turn, and the freighters (in Scenario #3) are moving at four hexes per turn, and the turn is divided into a number of impulses, then the Klingon ship will move during twice as many of those impulses as the freighters and will, of course, move twice as far in the same time.

(C1.44) THE IMPULSE CHART: When the Move Ships Step appears, do not move every ship. Instead, look at the IMPULSE MOVEMENT CHART and move only those called to move. Each column represents one possible speed for units moving in that scenario. Note the speed of each moving unit. A unit moves only if there is a number in the box at the intersection of the current impulse and its speed. The number in question indicates the specific movement point that the ship will move.
NOTE: For keeping records of time, such as the 1/4-turn delay in firing a weapon or the endurance of a drone, count only to the impulses of the turn, not to the number of hexes actually moved. Let us assume, for purposes of illustration, that in turn 3 of Scenario #3, there is a drone moving at speed 8, a Klingon ship moving at speed 5, a freighter moving at speed 4, and a damaged freighter moving at speed 3. Thus, we will deal with the 8, 5, 4, and 3 columns, ignoring the 1, 2, 6, and 7 columns.

Look at the 8-IMPULSE MOVEMENT CHART. On the row for the first impulse, only the 8 column (the speed of the drone) has a number.
So only the drone will move in the first impulse, and it will move its first hex of movement.
On the second impulse, there are numbers in the 8, 5, and 4 columns, indicating that the drone, the Klingon ship, and the undamaged freighter all move.
Impulse #3: there are numbers only in the 8 and 3 columns, so only the drone (speed 8) and the damaged freighter (3) move.
Now, which units will move during the fourth impulse? Answer: The moving units are the undamaged freighter (speed 4), the Klingon ship (speed 5), and the drone (speed8).
Proceeding quickly through the remaining impulses:
Impulse 5 - drone and Klingon move.
Impulse 6 - drone and both freighters move.
Impulse 7 - drone and Klingon move.
Impulse 8 - all four units move.
No impulses are skipped, even if no unit is to move. Units may still fire and launch weapons and perform other functions on impulses in which they do not move. In reality, the units are moving, but haven't crossed the border into the next hex yet.
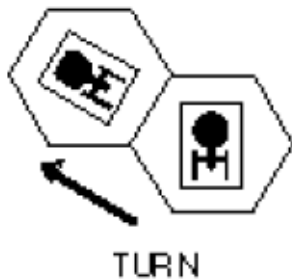
(C2.12) ENERGY COST OF MOVEMENT
Most of the ships in Cadet Training Handbook are about the same size and require about the same energy for movement (one point of power per hex moved). The hundreds of ships in the Captain's Edition include units which cost from 1/10 of a warp energy point per hex to two warp energy points per hex. This concept is portrayed in Cadet Training Handbook by the Orion Pirate Raider, which requires 2/3 of a warp energy point to move one hex. This is a simple mathematical relationship; for example, six hexes of movement require four warp energy points. A chart on the bottom of the pirate SSD shows these calculations. Regardless of the ship's movement cost, one point of impulse power always produces one point of movement. However, no more than one point of impulse power can be used for movement purposes. Unless you are using the fractional accounting, round all movement costs to the next higher whole number, e.g., 1-1/3 = 2.

(C3.0) TURNING AND TURN MODES
Each ship in the game must maneuver within the limits of its turn mode. A ship's turn mode is the number of hexes it must move straight ahead before it is allowed to turn.

(C3.1) TURNING
A ship's turn mode regulates how often a 60degrees turn can be made (that is, how far it must move in a straight line before it can turn 60degrees to one side).

TURN

The actual act of turning the unit by 60degrees is done at the start of a given impulse in which the IMPULSE CHART calls for that unit to move (immediately before moving into the next hex) and NOT at the end of the impulse (after entering a given hex). Ships only turn on impulses when they are scheduled to move and turn before conducting the movement. To reverse direction, the ship would make three consecutive right (or left) turns. If the ship's turn mode was 2, this would involve a half-circle some five hexes across.

POINT OF TURN MARKERS
The file includes POINT OF TURN markers, one for each race. These can be used as a play-aid to keep track of turn modes. Whenever a ship turns and enters a new hex, move its POINT OF TURN marker into the hex it just left (that is, the hex it turned in). This will make it obvious when the ship has fulfilled its turn mode and can turn again.

STACKING
Unlike some games, there are no stacking limits in Star Fleet Battles. Any number of units can be in the same hex. Weapons fired into a hex will damage only the unit they are fired at, not every unit in that hex. Weapons fired through a hex at a target in a more distant hex will not damage units in the intervening hex. This represents the enormous expanse of space which each hex represents.

(C3.2) DEFINITION OF TURN MODE
A turn mode is the number of hexes which the ship must move in a straight line (straight ahead) before it can turn 60degrees (to face an adjacent hex side) right or left. After each 60degrees turn, the ship must again move the stated number of hexes straight ahead before it can turn again. A ship is never required to turn and can continue moving straight ahead if the owner wishes. Remember, however, that every time the ship turns the count must be started over. Moving straight ahead for several hexes will not allow a ship to make several turns in rapid succession later. Turn modes increase with speed; also, less-maneuverable ships have higher turn modes and cannot turn as rapidly.

(C3.3) ASSIGNMENT OF TURN MODES
Each ship is assigned a turn mode depending on the details of its construction. This is shown as a Turn Mode Chart on the SSD of each ship. Determine the turn mode of each ship at its current speed, look under the column for that ship's turn mode rating for the speed bracket that includes the current speed. Then, look across on that line to find the turn mode (the number of hexes the ship must move in a straight line between each turn). For example, if the Federation Cadet cruiser is moving at a speed of 8, it has a turn mode of 2 because the second line of the turn mode
chart says 7-16 = 2.

(C3.4) RESTRICTIONS OF TURN MODES
The hex entered on the impulse the turn was made counts as the first hex of straight line movement for turn mode purposes. (C3.41) The turn mode count carries over from turn to turn. For example, a ship with a turn mode of 4 that moves (on the first turn) seven hexes in direction A and then one hex in direction B has already fulfilled one hex of its four-hex turn mode requirement. It must move three hexes in direction B (not four) on the second turn before making a turn to C or A (assuming it did not slow down and change to a lower turn mode).

(C3.42) Hexes moved in a straight line at the end of a previous turn may be counted toward fulfillment of a ship's turn mode on the current turn.

(C3.43) Unless otherwise specified, all ships have fulfilled their turn modes before the start of each scenario and can turn immediately when called on to move at their current speed.

(C4.0) SIDESLIP
The restrictions of the hexgrid used in this game create certain limitations on the movement of ships (and other units) that do not correspond with reality. To correct this situation, ships may execute a sideslip maneuver.
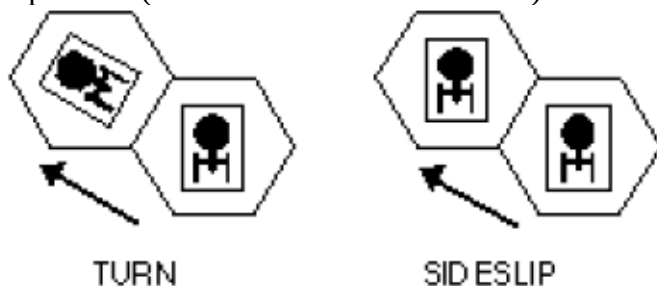
(C4.1) SIDESLIP MODE
A sideslip maneuver is a substitute for regular forward movement and may be executed whenever a unit is scheduled to move and has satisfied its sideslip mode. For purposes of sideslip maneuvers ONLY, all ships at all speeds are assumed to have a slip mode of 1. After satisfying the requirements of this slip mode (i.e., moving one hex in a straight line since the last sideslip or turn), the ship may execute a sideslip maneuver. After executing a sideslip, the ship begins counting again to satisfy the requirements of a sideslip. After satisfying the normal turn mode, it may make a normal turn; after satisfying the sideslip turn mode of 1, the ship may execute a sideslip. Normal and sideslip turn modes are recorded and satisfied independently of each other, but a ship cannot turn AND sideslip on the SAME impulse.

(C4.2) PROCEDURE
When executing a sideslip, the ship is moved into one of the hexes forward and to the side, but retains its original facing.
EXAMPLE: A starship in hex 1212 facing A has satisfied the requirements of either a turn or sideslip. If the owning player wanted to execute a turn on the next impulse when the ship is scheduled to move, it would be turned to face direction F and moved into hex 1112. If the owning player wanted to execute a sideslip, the ship would (when next scheduled to move) enter hex 1112 but retain its heading of A.

TURN   SIDESLIP

(C4.3) RESTRICTIONS

(C4.31) For purposes of satisfying the sideslip mode requirement, the hex entered during the sideslip does not count.

(C4.32) For purposes of satisfying the regular turn mode, the movement before, during, and after the sideslip counts as movement in the same direction.

(C4.33) A unit may not sideslip on the hex of movement made during a normal turn. (That is, a ship may not turn and sideslip on the same impulse.)

EXAMPLE: A given ship has a turn mode of three at its current speed. It is in hex 1616 facing in direction F. It moves one hex straight ahead to hex 1516. It has now (by moving one hex straight ahead) satisfied the sideslip requirement. On its next impulse the ship sideslips to hex 1515, maintaining its F facing. It cannot sideslip on its next movement impulse because it has not moved one hex in a straight line, so it moves ahead into hex 1414 (facing F). At this point it has moved three hexes in direction F (sideslipscount as forward movement for normal turn mode requirements), and during its next impulse it executes a right turn, moving into hex 1413 facing in direction A. Note that the one hex of movement into hex 1413 counts as movement in a straight line for turn and sideslip mode requirements. The ship could not, however, turn and sideslip on the same impulse to move into hex 1514.

(C5.0) TACTICAL MANEUVERS
From time to time a ship's captain may be unable or unwilling to move the ship out of the hex it occupies, but may want to retain the ability to turn his ship to respond to the enemy. This is a tactical maneuver. There are two types of tactical maneuvers: sublight tactical maneuvers and warp tactical maneuvers.

(C5.1) SUBLIGHT TACTICAL MANEUVERS
Players operating ships which cannot move faster than one hex per turn (for example, a badly damaged ship) or, on a given turn, do not wish to move at that speed may either move in normal movement or use tactical maneuvers.

(C5.11) PROCEDURE
A player wanting his ship to make sublight tactical maneuvers may write TAC in his movement plot(on in the delayed tab of pubpriv notes) indicating the intention to use high sublight speed for tactical maneuvers. In this case, the ship does not actually move (it remains in the hex it is in), but on any impulse AFTER the first impulse it may make ONE 60degrees turn.

EXAMPLE: A Romulan ship programmed to move one hex is in hex 0305 facing hex 0304. The owning player has the option of using normal movement, in which case he could move his ship either 1A (which would move him to hex 0304), 1B (which would move him to hex 0404), or 1F (which would move him to hex 0204). If he had plotted TAC, the Romulan would be able to turn the ship to face one of these hexes, but not enter it. However, he could make this maneuver at any time and in either direction, during the course of the turn. Note, however, that only ONE such maneuver is permitted during each turn of the game.

(C5.12) RESTRICTIONS
 A ship must spend one unit of impulse engine energy to make a sublight tactical maneuver. This energy must come from impulse engines.

(C5.2) WARP TACTICAL MANEUVERS
In certain tactical situations a ship's captain may decide that he does not want to change his position for the next turn, but that he does wish to maintain warp maneuverability.

(C5.21) PROCEDURE
 Tactical warp maneuvers are performed much like sublight tactical maneuvers. The ship remains in the same hex for the entire turn, but can turn 60degrees (several times) under certain circumstances.

(C5.22) ENERGY COST
 A given ship may make up to four tactical warp maneuvers during a given turn. Each TAC requires the same energy the ship would have expended to move one hex. Impulse energy may not be used to perform tactical warp maneuvers.

(C5.23) OPERATIONS
When a ship is designated to make tactical warp maneuvers, the number of such maneuvers paid for is announced. This is the speed used on the movement chart.

(C5.231) A ship using tactical warp maneuvers is assumed to have earned its first maneuver on the second impulse of the turn. Thereafter, it earns another maneuver each time it is scheduled to ?move by the impulse chart, except on the last impulse of the turn. Thus, a ship scheduled to make four tactical maneuvers using a 32 impulse chart would earn one on impulses 2, 8, 16, and 24 (but not 32).

(C5.232) A given ship may have only one earned and unused tactical warp maneuver at any one time. If the movement chart calls for the ship to move (i.e., earn another maneuver) and it has not used the last one it earned, the new one is lost and the ship still has only one earned maneuver.

(C5.3) COMBINATIONS
 A ship may use tactical warp maneuvers and sublight tactical maneuvers during the same turn. In this case, the ship earns tactical warp maneuvers as above and has a sublight tactical maneuver to use at any time (as per those rules). It cannot use both types of maneuvers on the same impulse.

(C5.4) RESTRICTIONS
On the turn after performing tactical maneuvers (warp or sublight or both), the ship is considered to have had a speed of zero for acceleration purposes. The count of hexes for the turn and sideslip modes are reset to zero.

(D1.0) GENERAL COMBAT RULES

Combat takes place during the various impulses of each turn. Combat consists of firing weapons at the units (ships, shuttlecraft, seeking weapons) of the opposing player(s) with the intention of damaging or destroying those units. A philosophical note: All military leaders are taught that combat is the last alternative (because it is expensive and dangerous). Star Fleet Battles, in general, depicts those cases in which there is no viable alternative to combat.

(D1.1) PURPOSE OF COMBAT
 The actions of combat are a means to an end, not an end in themselves. Combat is used to gain or maintain control of territory, or to destroy or reduce enemy forces as a means to that end. Combat involves causing damage to enemy units to such an extent as to destroy them or force them to go elsewhere.

(D1.2) OPERATION OF COMBAT
 Within the game, players will use weapons to cause damage to enemy ships. The impact of each weapon results in a number of damage points as determined by the rules on that weapon. These damage points are then allocated to cause damage to specific equipment on board the ship, thereby reducing its capabilities, and ultimately destroying or capturing it, or forcing it to disengage (i.e., flee the area).

(D1.3) WEAPONS TYPES
 Weapons are divided into two types: seeking and direct fire. Direct-fire weapons include, for example, phasers, disruptor bolts, and photon torpedoes. Seeking weapons include drones, plasma torpedoes, and, in some cases, shuttlecraft. Direct-fire weapons are those which are aimed and fired at targets; their effects are resolved immediately. A seeking weapon is launched during a specific part of the turn and is represented by a counter that moves on the map and follows its target.

(D1.4) RANGE

To determine the range to the target, count the number of hexes from the hex occupied by the firing unit to the hex occupied by the target unit along the shortest possible route without skipping hexes. Count the hex occupied by the target, but not the hex occupied by the firing unit. If both are in the same hex, the range is zero. This is the true range. The effective range"" (which may be different from the true range due to sensors, scanners, cloaking devices, and other effects that you will find in later scenarios) is the range used on the weapons tables. For the first few scenarios, true range is effective range.
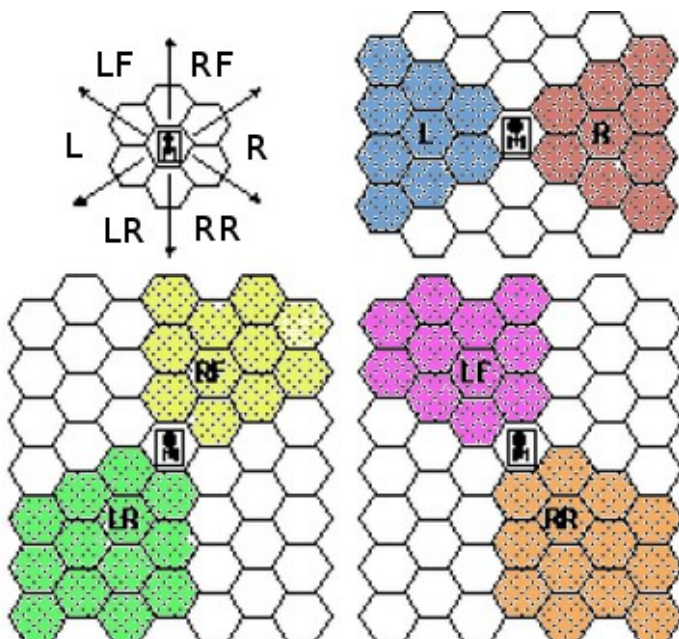
(D2.0) FIRING ARCS

All ships with weapons have these designated as to which direction they can fire. This is done in terms of firing arcs. The area around the ship is divided into six equal areas, each representing 60degrees or 1/6 of a circle. Each weapon is designated as to which of these arcs it can fire into. For example, a weapon on the left side of the ship could fire into some (not necessarily all) of the arcs to the left of the ship.

(D2.1) FIRING ARC DESIGNATIONS

Note the diagram with six arrows on this page. This diagram is used to designate firing arcs for all ships in the game. It is repeated on each SSD. The area around each ship is divided into six ?firing arcs,"" each of which is designated by code letters: LF - left forward, RF - right forward, R - right, L - left, RR - right rear, LR - left rear. Note particularly that all firing arcs are relative to the ship, not to the map. (For example, some weapons might fire on the left side of the ship, but this is not related to the left side of the map unless, by coincidence, the ship faces in direction A.) Each weapon on the SSD (except for drones, which can be fired in any direction) is marked with one or more of these designations. For example, the left rear phasers on the Klingon Cadet battlecruiser are marked: LR-L. This indicates that they can fire in the left and left rear firing arcs. Note that when several weapons are shown as a group of adjoining boxes (such as the two forward phasers on the Klingon ship), all of them can fire in all of the arcs shown. Each firing arc is a 60degrees section of the map bounded by two straight rows of hexes.

For example, a ship in hex 0915 which is facing hex 1015 (direction C) would have a left forward (LF) firing arc bounded by the row of hexes from 0915 to 1417 and beyond (directly forward) and the row from 0915 to 1910 (and beyond). All hexes on these rows (which extend to infinity) are within the LF firing arc and can be fired at by any weapon capable of firing in the LF arc (examples: 1114, 1315, 1612, 2017, and 2817). Hexes outside of this arc (examples: 0701, 2604, 0301) cannot be fired at by a weapon with only the RF designation. Note that each firing arc overlaps the adjacent arcs on each side by a single row of hexes. For example, all three phasers on the Federation Cadet cruiser can fire straight down the row of hexes extending directly ahead of the ship. Maneuvering to put a target into that hex row is known as centerlining the target.

(D2.2) COMBINED FIRING ARCS
For simplicity, some firing arc designations are combined into a shorthand version. Combined designations include:
FA = LF + RF
FX = L + LF + RF + R
RA = LR + RR
RX = L + LR + RR + R
LS = LF + L + LR
RS = RF + R + RR

(D3.0) SHIELDS
Shields are the primary defense of starships in this game. Shields will absorb tremendous amounts of punishment, protecting the ship from damage (up to a point).

(D3.1) DESIGNATIONS OF SHIELDS

(D3.11) Each ship is surrounded by six shields. These are numbered 1 through 6, and each shield faces one of the six surrounding hexes. (For example, if a given starship was in hex 0202 and facing hex 0201, the #1 shield would be facing hex 0201, #2 would be facing 0302, and #5 would be facing 0103.)

(D3.12) The shields are fixed in position and cannot be rotated or moved. If a given shield is down, no other shield can be shifted into its position or expanded to cover a double arc. For example, the #1 shield will always be to the front of the starship.

(D3.2) SHIELD OPERATION
The shields are represented on the SSDs by the rectangular groups of boxes surrounding the ship. These are marked Shield #1, etc.

(D3.21) Each damage point on a shield checks off one box. When all boxes on a given shield are checked off, the shield is down. Damage points scored on a shield that is down penetrate to the interior and destroy systems within the ship. These are called internal hits or internal damage or simply internals.
NOTE: The drones in Scenario #2 will explode when they hit your ship (enter the same hex that your ship is in), causing six damage points. Look at the SSD for the Federation Cadet cruiser (Constellation). The #1 shield has 16 boxes; it will still have four boxes left if it is hit by two drones. The #2 shield has 12 boxes. While two drone hits (impacts, not damage points) will knock the shield down, they will not damage your ship. Shield #3 has only 10 boxes; a second drone impact there would score internal damage on the ship. Note, however, that damage scored on (or which penetrates through) one shield will have no effect on any other shield. If your #2 shield is down and a drone is approaching from that direction (and for whatever reason you cannot stop that drone), one option is to turn the ship and allow the drone to hit another shield. One of the more difficult choices in combat is to allow something to hit one of your shields when you could prevent it (perhaps by using a phaser on the drone) because you would rather use that phaser on a more important target. A ship that has no shield damage after combat may not have been used to its fullest potential.

(D3.3) ENERGY COST OF SHIELDS
For the second scenario (and the third) your Chief Engineer will make sure that adequate power is available to operate your shields.

(D3.34) SHIELD REINFORCEMENT
The purpose of reinforcement is to use some of the ship's energy to absorb damage points and prevent them from damaging the ship (i.e., to avoid marking out any boxes on the SSD). A ship can only use reinforcement if it has activated its shields.

(D3.341) Energy allocated for general reinforcement is divided by two, and the resulting number (round fractions down) is the number of general reinforcement points available during that turn. These points reinforce all shields and are eliminated by the first damage points from any direction (but NOT from each direction). For example, if 10 units of energy had been allocated, this would provide 5 points of general reinforcement. The first 5 damage points scored on the ship during this turn (regardless of direction) destroy this. If not used, these points do not carry over to the next turn; new energy can be allocated each turn.

(D3.3411) General reinforcement must be used to absorb damage before specific reinforcement is used to absorb damage.

(D3.342) Energy for specific reinforcement must be designated for a specific shield. Each point of energy adds one extra box to that specific shield for the duration of the current turn. If not used, reinforcement boxes do not carry over to the next turn; new energy can be allocated each turn.

(D3.343) A shield that is down (reduced to zero) cannot be specifically reinforced, but general reinforcement would still block fire coming from that direction up to the limit of its strength.
EXAMPLE: A ship has a front shield of 20 boxes. The ship has allocated 10 points of energy to reinforce the front shield and 6 points to general reinforcement. At a given point in the turn, 2 damage points are scored on a different shield, eliminating 2 of the 3 points of general reinforcement. Later during the turn, 15 points of damage are scored on the front shield. The first point is stopped by general reinforcement, the next 10 by specific reinforcement, and the last 4 score hits on the shield, reducing it from 20 boxes to 16. Note that without the reinforcement, the shield would have been reduced to 5 boxes.
NOTE: General reinforcement will block transporters.

(D3.4) DETERMINING WHICH SHIELD WAS HIT BY ENEMY FIRE
It is important to determine which shield has been struck by incoming fire. In the case of seeking weapons, this is the shield facing the hex that the weapon approached from. Note in the Sequence of Play that ships move first, then seeking weapons. If, for example, the Constellation was in hex 0708 (facing A), a drone was in hex 0806 (facing E), and the Constellation moved next into hex 0707, the drone would then move (on the same impulse) into hex 0707 and strike the ship. Now, which shield would the drone hit? The drone struck the #2 shield, the one facing the hex that the drone came from. If that shield had been down, you might have turned right (assuming your turn mode had been satisfied) into hex 0807, in which case the drone would have gone into 0807 and struck a different shield. Which one? Did you answer #6? That is correct. Turning stronger shields toward the enemy is a key tactic. For direct-fire weapons, the line of fire must be determined. To do this, simply draw an imaginary line from the center of the target ship's hex to the center of the firing ship's hex, and determine which shield is crossed. For example, the Constellation is in hex 0202 (facing A) and is attacked by the Destruction in hex 0305. A line from hex 0202 to hex 0305 crosses the hex side separating hex 0202 from hex 0203; therefore, it is the rear shield (#4) which takes the damage.

(D3.41) SHIELD BOUNDARIES
In the event that the line of fire (for direct-fire weapons) strikes exactly at the junction of two shields (Example: Target in 0304 facing D, firing ship in 0405 facing A, weapons strike the junction of the #1 and #6 shields), resolve the situation by the following method. Determine from the Impulse Chart which ship is to move next. Move that ship (temporarily) one hex directly forward and observe which of the two shields the line of fire enters first. That is the shield damaged by the fire. If both ships are scheduled to move next, move both ships (temporarily) one hex forward and observe which shield the line of fire enters first. If the situation remains unresolved, use the method specified in Scenario #3. See also (D3.4).

(D3.42) SHIPS IN THE SAME HEX: If two ships are in the same hex, firing directions are judged (for both shields and weapons purposes) from the positions occupied the impulse before the impulse on which the ships occupied the same hex. The range is still zero, and the ships are still in that hex.

(D4.0) DAMAGE ALLOCATION (Non chart version)

Count all damage that penetrates a single shield on one step of a single impulse as one volley. Note that damage from drones (and/or plasma torpedoes) and damage from direct-fire weapons is resolved separately because it happens at different points in the impulse. Each time internal damage is scored, the first point must be scored on a weapon (if one is left), the second point must be scored on a warp engine box (if one is left), and the remaining points can be scored on any internal boxes (not other shield boxes and not the drone rack ammunition track). The bridge cannot be destroyed. When there are no boxes (including Excess Damage boxes) remaining except the bridge, the ship is destroyed by one more damage point. For a robot ship, do not score the extra damage on warp engines or weapons unless there are no other boxes remaining. Then score them on warp engine boxes first. Each damage point scored on a warp engine reduces the speed of the ship by one point for the rest of the scenario beginning at the start of the next turn; 12 damage points scored on warp engines will bring the ship to a halt. (This approximates the energy allocation process. It is a little too generous for the robot ship, but this offsets some of the limited aspects of the robot ship system.)

(D4.1) DETERMINING INTERNAL HITS Any damage points which penetrate the shields are distributed among the interior systems of the ship by the Damage Allocation Procedure (D4.2) which uses the Cadet Damage Allocation Chart. The damage records on the SSD are not secret. Any player may examine the SSD of any ship at any time. This is unlike the Energy Allocation Forms, which ARE secret.

(D4.2) DAMAGE ALLOCATION PROCEDURE
This procedure is used to distribute any damage points which have penetrated the shields to the interior of the ship. The points are distributed by the Damage Allocation Chart.

(D4.21) CADET DAMAGE ALLOCATION CHART (DAC): The chart below is used in the Cadet Level game. A more elaborate chart is used in the Standard Level. This chart is required in Cadet Scenarios #5 and #6 and any games after that using cadet ships. Not in the Vassal module an F column has been added for Bridge and SCTY hits.

(D4.21) CADET DAMAGE ALLOCATION CHART   (c) ADB Inc. Used with permission.
(DAC): The chart below is used in the Cadet Level game. A more elaborate chart is used in the Standard Level.

This chart is required in Cadet Scenarios #5 and #6.

Die Roll	SYSTEM DESTROYED A	B	C	D	E	F	G
1	Hull	Engine	APR/AWR, BTTY, Lab, Shut,Tran	WPN	Excess Damage	BRDG SCTY EMER AUX	Explode
2	Hull	APR/AWR, BTTY, Lab, Shut,Tran	WPN	Engine	Excess Damage	BRDG SCTY EMER AUX	Explode
3	Engine	Hull	APR/AWR, BTTY, Lab, Shut,Tran	WPN	Excess Damage	BRDG SCTY EMER AUX	Explode
4	APR/AWR, BTTY, Lab, Shut,Tran	Engine	WPN	Hull	Excess Damage	BRDG SCTY EMER AUX	Explode
5	WPN	Hull	APR/AWR, BTTY, Lab, Shut,Tran	Engine	Excess Damage	BRDG SCTY EMER AUX	Explode
6	APR/AWR, BTTY, Lab, Shut,Tran	WPN	Engine	Hull	Excess Damage	BRDG SCTY EMER AUX	Explode

(D4.22) PROCEDURE: First determine the number of damage points which have penetrated the shield. Each damage point must be distributed individually. All damage points scored against a given shield in a given impulse must be resolved together and are collectively known as a volley.

(D4.221) For each damage point of the volley, roll one die and find the resulting number in the die roll column of the Cadet Damage Allocation Chart (D4.21).

(D4.222) Look across (to the right) of the die roll result, and note the system listed in column A. Normally, the damage point in question is scored against one box of that type. (Remember that each damage point destroys one box.) Players must allocate EACH damage point of a given volley by this procedure. However, if there are no remaining boxes of that type on the target ship's SSD (or never were any), move one column to the right and score the damage point against the system listed in column B. If there are no remaining boxes of the system type listed in column B, move on to column C and so on. The last column is Excess Damage, that is, damage which destroys the physical structure of the ship. These damage points eventually destroy the ship; see (D4.4).

(D4.223) When a particular system is determined to have been hit, the player owning the target ship MUST mark one of the boxes on his ship identified as being that type of system as destroyed. Thereafter, that box does not exist and cannot be used. Exactly which box is up to the player. On the Cadet Damage Allocation Chart, where many systems are grouped into four categories, the player can select a box from any system within that category.

(D4.3) EXPLANATION OF THE CADET DAMAGE ALLOCATION CHART RESULTS HULL (This includes the hull boxes on the SSDs.)
ENGINE: This can be scored on impulse or warp engines.
WEAPON (WPN): This can be scored on phasers (PH-1/2/3/G), photon torpedoes (PHOT), plasma torpedoes (PLS/R/F), disruptors (DISR), fusion beams (FUS), plasmatic pulsar devices (PPD), expanding sphere generators (ESG), or drone racks (DRN).
OTHER: This can be scored on transporters (TRAN), laboratories (LAB), auxiliary power reactors (APR),batteries (BTTY), or shuttles (SHTL). EXCESS DAMAGE: On the Excess Damage Track.

NOTE: The bridge and security boxes cannot be destroyed in the Cadet Game. The modified chart with an F column treats them as the last hits before destruction.

(D4.3) DAMAGE ALLOCATION RESTRICTIONS AND CONDITIONS
Several conditions, restrictions, and special rules are involved in the Damage Allocation Procedure.

(D4.31) BOLD-FACE RESULTS (FULL Sized Ships DAC)
Note that some of the results on the Damage Allocation Chart are printed in BOLD underlined type. These results are treated specially. A given BOLD result can only be scored ONE time in each volley. For example, if three hits were scored, and the allocation die roll was a 12 in each case (unlikely, but possible), then these three hits would be scored against: auxiliary control, emergency bridge, and scanners. If the three allocation die rolls had all been 9, then the hits would have been scored against left warp engine, forward hull, and forward hull. Note, however, that the prohibition against scoring a BOLD result twice is against the position of the chart, NOT against the given system. If allocation die rolls of 10 and 4 were obtained, both would be scored against phasers.

(D4.32) SPECIAL WEAPONS CONDITIONS

(D4.321) PHASER DIRECTIONAL HITS
In the case of damage points scored against (not by) phasers, these must be scored against a phaser that is capable of firing in the direction from which the volley came. For example, if a Federation cruiser in hex 0619-A was hit from the direction of hex 0719 (the #2 shield) and a phaser hit was called for, the owning player could mark this hit against either a forward or right phaser since these could fire in this direction. However, the damage point could not be scored against the left or rear phasers (which cannot fire that direction) since the hull protects these from the blast. If such a hit cannot be scored against a weapon bearing in that direction, it is then (and only then) scored against the system in the next column of the Damage Allocation Chart. Hits marked as any weapon may be scored against phasers regardless of direction. ONLY phasers use the direction rule for damage allocation.

(D4.322) MULTIPLE WEAPONS
Ships with several types of a given weapon must score every third hit in a volley against one of the more powerful types. In Cadet Training Handbook this only affects those ships which have two kinds of phasers (1 and 2 on the KR, 1 and 3 on the Orion and Lyran ships, 2 and G on the Hydran ship).

(D4.323) ALTERNATE HIT RESULTS
The result TORP on the Damage Allocation Chart is applied to disruptor bolt, photon torpedo, and plasma torpedo boxes on the SSDs.

(D4.324) ANY WEAPON HITS
An any weapon hit could be scored on a phaser, drone, or torpedo. It could also be scored on a shuttle box occupied by a shuttle, but this isn't required.

(D4.325) SHUTTLE HITS
A shuttle hit can be scored on any shuttle box. The exact box chosen is up to the player, but if it contains a shuttle, that shuttle is also destroyed.

(D4.33) SPECIAL FUNCTION TRACKS
On each SSD are four Special Function Tracks (sensor, scanner, damage control, and excess damage). These will be explained later. The boxes on these tracks are destroyed in order, from best (top or left) to worst (bottom or right). The last box on the sensor, scanner, and damage control tracks is NEVER marked as destroyed. This represents the residual capability (if any) existing after the system has been effectively destroyed. (The last sensor box is always 0, the last scanner box is always 9, and the last damage control box is always 0.)

(D4.34) MULTI-SHIP VOLLEYS
It is possible for a volley striking a given shield during a given impulse to include hits scored by two enemy ships firing from two slightly different directions. This causes a problem when phaser hits (which have a directional restriction) must be resolved. In such a case, first resolve the damage points from the unit which caused the most damage, then from other units in the order of the damage they caused. The volley is still resolved as a single volley; this procedure governs only the direction of fire for the phaser hits.

(D4.35) SPECIFIC DAMAGE CASES

(D4.351) HULL HITS
These are differentiated as Forward and Aft (or Rear) Hull; this is marked on the SSD. Some ships (War Eagle, Orion) have only one group of hull spaces. These center hull spaces are destroyed on any hull hit (forward or aft). Other ships have two groups of hull spaces. In this case, the forward group (marked F) is destroyed on forward hits, the aft group (marked A or R) on aft (or rear) hits. If one group is completely destroyed, its hits are NOT transferred to the other group but go to the next column of the DAC. The Gorn cruiser has three groups of hull spaces; the central group absorbs forward hits after all hull boxes in the forward group are destroyed and aft hits after all boxes in the aft group are destroyed. Some ships, such as the Federation cruiser, have two groups of hull spaces that are in an identical position with respect to forward and aft, but in opposite positions (right versus left) with respect to longitudinal symmetry. Such groups are considered to be the same (as they are marked); they are drawn in this way only for artistic purposes in making the SSDs as symmetrical as possible. Some aft hull boxes are marked with an R in one box.

(D4.352) ENGINE HITS
Warp engines are designated as left, right, or center; damage allocated to a left engine can never be transferred to the right or center engine, or vice versa.

(D4.353) BRIDGE
The bridge can now be destroyed by the DAC. Most ships have an Emergency Bridge and an Auxiliary Control room; each is hit on a separate entry.

(D4.354) FLAG BRIDGE
These hits are scored on the Security Stations of Klingon ships. Only the Lyran ship has a Flag Bridge, other ships in Cadet Training Handbook just move to the next column of the DAC.

(D4.4) HOW SHIPS ARE DESTROYED
When there are no Excess Damage boxes remaining, and one additional excess damage hit is score, the ship is destroyed.

(D4.41) At the instant of destruction, the ship is removed from the game, all personnel on board are assumed to have perished, all drones on the map guided by that ship lose their tracking guidance and are removed, and the ship is considered destroyed for victory purposes.

(D4.42) Self-guiding weapons (plasma torpedoes) are not affected by the destruction of the ship that launched them. They continue to follow their targets without external guidance. This is known as Romulan Revenge.

(D4.5) EXAMPLE OF SHIELD OPERATION AND DAMAGE ALLOCATION
During the second impulse of the second turn, the Klingon D6 battlecruiser Destruction is struck on its #2 shield with two damage points of long-range phaser fire. These points reduce that shield from 12 boxes to 10. During the fourth impulse, a photon torpedo scores a hit on the #1 shield. As photon torpedoes cause eight damage points, this reduces the front shield from 16 boxes to 8 boxes. Finally, during the eighth impulse, a second Federation cruiser has closed to three hexes away and directly ahead. Both photon torpedoes are fired, but only one hits (eight damage points), and the three phasers score an additional 13 damage points. These 21 damage points are scored as follows: The first 8 damage points are scored on the forward shield, destroying it. The remaining 13 are scored on interior systems (determined by the Damage Allocation Chart, D4.21) as follows:

Hit #	Die Roll	System Destroyed
1	2	Hull (one of the forward boxes)
2	6	Other (the lab)
3	5	Weapon (the right rear phaser)
4	3	Engine (one impulse box)
5	4	Other (shuttle bay)
6	2	Hull (the second forward box)
7	5	Weapon (the drone rack)
8	1	Hull (one of the rear boxes)
9	3	Engine (the second impulse box)
10	1	Hull (the second rear box)
11	3	Engine (one box from left engine)
12	1	Hull (As there is no more hull, move to the right, which says "Engine." The hit is scored on the right warp engine.)
13	3	Engine (second box from right warp engine)

(D4.0) DAMAGE ALLOCATION (Graduate Version)

The standard SSDs require the standard Damage Allocation Chart (DAC) and certain additional rules.

(D4.12) ARMOR: One ship included in Cadet Training Handbook, the Romulan War Eagle, has armor installed in its hull. All damage points which penetrate any of the shields strike the armor. When all armor has been destroyed (by the first five points of internal damage), use the DAC to distribute further internal damage from then on.

(D4.21) DAMAGE ALLOCATION CHART

Note that the more elaborate standard Damage Allocation Chart must be used with the standard ships. This requires the use of two dice. This chart is used in Scenarios #7 through #12 and some Instant Replays.

(D4.5) EXAMPLE OF DAMAGE ALLOCATION

This example shows the resolution of a volley of 55 damage points striking the forward shield of a Klingon D7 battlecruiser. The first 30 are scored on the forward shield, destroying it completely. The remaining 25 are scored on interior systems (determined by the Damage Allocation Chart) as follows:

Hit #	Die Roll	System Destroyed
1	6	One forward hull box
2	7	No cargo on SSD, so one forward hull box
3	9	One left warp engine box
4	2	One bridge box
5	7	No cargo, so one forward hull box
6	4	One phaser Klingon picks right wing phaser
7	10	One phaser, Klingon picks left wing phaser
8	7	No cargo, so the last forward hull box
9	8	One aft hull box
10	11	One disruptor bolt box
11	7	No cargo or forward hull, so one battery
12	6	No forward hull, so one impulse engine box
13	3	One drone rack
14	8	One aft hull box
15	5	One right warp engine box
16	7	No forward hull, one battery
17	8	One aft hull box
18	4	The phaser on this line has been hit, so one transporter
19	5	The right warp engine on the line has been hit, so one aft hull
20	10	The phaser on this line has been hit, so one tractor beam
21	12	Auxiliary control hit
22	7	No cargo or forward hull, so the last battery
23	9	The engine on this line has been hit, and there is no forward hull, or cargo, or batteries, so the hit is scored on the lab
24	7	There is no cargo, forward hull, battery, or center engine, scored on a shuttle box
25	2	Flag bridge (Security Station)

(D6.0) SENSORS AND SCANNERS

The standard ship SSDs include tracks known as sensor and scanner. These represent the ability of the ship to detect targets and guide weapons. Since you are using these large ships now, you must learn how to use sensors and scanners. Be advised, however, that until these tracks receive damage, there is no practical effect to the way you have been playing. Ships use their sensors and scanners to detect, identify, and (sometimes) direct weapons to targets. The ships in Star Fleet Battles use a system functionally similar to 20th century radar (although operating on different principles because the ship and its target are usually moving faster than light). Sensors and scanners broadcast an electronic pulse which will be reflected back by any target or object. Computers analyze the returns to gain information about the target. Certain types of known targets (asteroids, Klingon frigates, plasma torpedoes) have distinctive patterns that can be recognized.

(D6.1)). Note, however, that as this factor is zero until the scanner track has taken considerable damage, it can be ignored until then.
EXAMPLE: A Klingon D7 battlecruiser has taken two hits on its sensors (reducing this factor from 6 to 5) and three hits on its scanners (increasing this number from 0 to 3). The Klingon wishes to fire. At the start of the turn, he rolled for sensor lock-on. He rolled a 6 and did not achieve lock-on. The true range is 3 hexes. This is doubled to 6 (because there was no lock-on), and then the scanner adjustment factor of 3 is added to that, resulting in an effective range of 9. At this range, the phasers of the battlecruiser will do little, if any, damage.
Note also that a cloaking device could increase the effective range by five more hexes.

(D6.1) SENSORS
Sensors are the detection system (similar to radar) used to lock-on to targets. Failure to allocate energy to fire control (B3.0-Step 8) is equivalent to failing to lock-on.

(D6.11) LOCK-ON: Ships must have a lock-on to their target to fire their weapons with their full effect. Ships roll for lock-on in the Sensor Lock-On Phase of each turn. Roll a single die, and if the result is equal to or less than the highest undestroyed number on the sensor track of the SSD, the lock-on is achieved. Note that all ships in Cadet Training Handbook have a 6 in the first box of their sensor track, and until damaged, sensor lock-on is automatic. Also note that there can be no lock-on to a cloaked target. See (G13.0) for details.

(D6.12) EFFECTS OF FAILING TO LOCK-ON
If a lock-on is not achieved, then the following restrictions are placed on the ship which failed to achieve lock-on.

(D6.121) The failing ship may not launch seeking weapons.

(D6.122) Any drones on the map controlled by the failing ship are removed from the map.

(D6.123) The firing range to all targets for other weapons is doubled. This doubling refers to the true range, not the range after being adjusted for scanners (D6.2). Note that this is part of, not in addition to, the effect for firing on a cloaked ship. The doubled-range part of that penalty represents the lack of a lock-on; the add five part represents additional cloak advantages.

(D6.13) CONDITIONS REGARDING SENSORS

(D6.131) Ships which have launched drones must attempt to achieve a lock-on every turn that they have drones on the map. Failure to achieve a lock-on causes the drones to lose tracking of their target, and they are removed from the map.

(D6.132) Sensors are used to control drones. The ships in Cadet Training Handbook can control a number of drones equal to their sensor rating (usually six). Note that the term control is not absolute; the drones must be

moved within the rules (F2.0).

D6.2) SCANNERS
Scanners are the weapons sighting systems of the ship. They are used to aim and fire all direct-fire weapons.

(D6.21) SCANNER ADJUSTMENT
The scanner adjustment factor is the lowest numbered undestroyed box on the scanner track. This is initially 0 for all ships in Cadet Training Handbook. When computing firing range, always add the scanner adjustment factor to the actual range in hexes (which may have been doubled due to failure to achieve sensor lock-on

(D7.0) BOARDING PARTY COMBAT

This section is somewhat simplified from the Captain's Edition. Ships have a limited ability to transport boarding parties onto enemy ships or freighters for the purpose of capturing them. Each boarding party consists of six humans (or five Gorns, who are larger and take more space on the transporter platform). As a practical matter, capturing an enemy starship is very difficult but not impossible. Boarding parties (BPs) arrive by transporter during various impulses of the turn. Boarding party combat is resolved at the end of the turn, after all of the impulses. To resolve boarding party combat, conduct the following steps for each ship that has boarding parties from both sides:
1. Determine how many BPs each side has on board.
2. If one side has more than 10 BPs, divide these into a group of 10 and a group of less than 10 (whatever is left over; if there are more than 20, there will be two groups of 10 plus a smaller group, etc.).
3. For each group, roll one die and cross-index the result with the number of BPs in the group on the chart below.

| DIE | NUMBER OF BOARDING PARTIES | | | | | | | | | |
ROLL	1	2	3	4	5	6	7	8	9	10
1	0	0	0	0	1	1	1	1	1	1
2	0	0	1	1	1	1	1	2	2	2
3	0	1	1	1	2	2	2	2	3	3
4	0	1	1	2	2	2	3	3	4	4
5	1	1	2	2	3	3	4	4	5	5
6	1	1	2	2	3	4	4	5	5	6

4. The result is the number of casualty points, that is, the number of enemy boarding parties eliminated. Both sides attack simultaneously.
EXAMPLE: Fourteen Klingon boarding parties are fighting 8 Federation boarding parties. The Federation player rolls a 5, producing 4 casualties. The Klingon player rolls a 3 for his group of 10 (3 casualties) and a 2 for his group of 4 (producing 1 casualty). The Federation is reduced from 8
boarding parties to 4, the Klingons from 14 to 10.
5. If all enemy boarding parties have been eliminated and additional casualty points have been scored, then each one of those points indicates one control station (Bridge, Emergency Bridge, Auxiliary Control) has been captured. (For example, to capture the Federation cruiser it would be
necessary to capture six control stations (two bridge boxes, two emergency bridge boxes, and two auxiliary controlboxes on the SSD) by scoring six casualty points over and above the number required to eliminate the boarding parties. When all enemy-held control stations have been captured, the ship has been captured. (Freighters have two control stations.)
6. A captured enemy ship may be moved and controlled by the capturing player, but the weapons cannot be fired because of the coded computer interlocks. These can be decoded, but this will take more time than is represented in one scenario.

(D9.0) DAMAGE CONTROL

Damage control is the ability of a ship to repair damage without a base or other facilities. Damage control is used to repair the shields during a scenario. It is assumed that the damage control parties are, during the course of the game, also taking action to seal off any hull areas that rupture and to prevent any fires or electrical overloads from spreading. This is factored into the various charts and tables and can be ignored.

(D9.1) DAMAGE CONTROL CAPABILITY
The current level of damage control ability is reflected in the damage control rating, which is the highest undestroyed box on the damage control track of the SSD. This rating itself may be reduced by damage taken during combat.

(D9.2) REPAIRING SHIELDS IN COMBAT
During any turn, energy may be allocated to damage control up to the highest number on the track. For each two units of energy allocated to damage control, one destroyed shield box is repaired at the end of the turn.

EXAMPLE: Four is the highest damage control rating of any ship in Cadet Training Handbook. This allows four units of energy to be used for damage control each turn; those four units would repair two shield boxes. Note that energy allocated on one turn produces shield boxes at the end of that turn, but is then expended (as with any other system) and does not produce additional shield boxes on later turns. Additional energy must be allocated (on later turns) to repair more shield boxes. Energy allocated to damage control is NOT used to reduce the effects of hits made during the turn. It can only be used to repair shield boxes damaged on a previous turn. For example, if two boxes of Shield #1 were destroyed on turn 1, energy would be allocated to repair them on turn 2 and they would be repaired at the end of turn 2, although they would not be able to stop any damage until turn 3. You must specify which shield you are repairing during the Energy Allocation Phase. Energy cannot be allocated to undamaged shields in anticipation of damage. Energy from reserve power (H7.0) cannot be allocated to damage control. If the damage control rating is reduced by damage during a turn, this takes effect at the start of the next turn.

(E.0) WEAPONS

(E1.0) DIRECT-FIRE WEAPONS: GENERAL RULES
Direct-fire weapons are fired during the Fire Direct-Fire Weapons Step in the Impulse Procedure of any impulse. Their effects are determined and recorded in the Resolve Direct-Fire Weapons Step immediately after firing. Two ships firing at each other during the same impulse are presumed to fire simultaneously. The fire of both ships is calculated and the number of damage points determined before that damage is applied to either ship. Thus, it is possible for a weapon to be destroyed by enemy fire at the same time that it fires and hits the enemy ship. Standard ships have approximately twice as many weapons as the Cadet ships, but do not have twice as much power.

(E1.1) PROCEDURE
A player simply indicates his ship and the target and says (for example): I am firing my two forward phasers at your ship. The effect is resolved by a chart and die roll (explained below). A separate die is rolled for each weapon fired. In the Direct-Fire Weapons Step, all players have the option to fire. Technically, each player must make his decision on which weapons (if any) to fire and at what targets without knowing if the other player(s) is(are) also firing. This can be accomplished by writing down the orders and exposing them simultaneously. While learning the game, or in friendly games, many players use an informal system of one player declaring his intentions and the other then saying whether or not he will also fire. This is known as me too firing and gives an advantage to the second player to speak, since he can make a more informed decision.

(E1.2) REQUIREMENTS
Direct-fire weapons require energy to fire. During the first three scenarios, your Chief Engineer will make sure that the weapons are always recharged when you need them. After that, you will have to tell him when you want the weapons charged. Each direct-fire weapon may be fired only ONCE per turn, and then only if each has satisfied its requirements for energy (see the specific rules for each weapons type). All direct-fire weapons have a definite field of fire (firing arc) which is shown on their SSD (as designations of which of the six arcs it can fire into) and cannot fire at targets outside of their field of fire.

(E1.3) EFFECTS

The effects of each direct-fire weapon are shown on the various weapons tables. The number of damage points scored by a given phaser on a given firing depends on the type of phaser, the range, and a die roll. Photon torpedoes and disruptor bolts either hit or miss their targets. The damage caused by each hit varies with range in the case of disruptor bolts, but is constant at all ranges in the case of photon torpedoes.
Note that you can fire through a hex containing a unit which is not your target without causing any damage to that intervening unit (it is a tiny point in a very large area). Also note that one weapon cannot damage two targets with the same shot.

(E1.4) FINALITY OF EFFECT

There is no means of diverting a direct-fire weapon, although shields can absorb some of their effect. While clever maneuvers will restrict your opponent's ability to get in a decisive shot, and your shields will reduce the damage he causes, there is nothing that can be done directly against the fire of the weapon. Seeking weapons, on the other hand, can be damaged and possibly destroyed before they reach the target.

(E1.5) FIRING RATES

Each weapon can be fired once (only once) during each turn; exceptions phaser-Gs and plasmatic pulsar devices. When firing a weapon twice on two consecutive turns (once on each turn), the weapon cannot be fired twice within a period of one-fourth of a turn. For example, if the forward phaser was fired during the last impulse of one turn, it could not be fired again before the second impulse of the next turn (in a turn with 8 impulses). This rule is NOT to be interpreted as meaning that a weapon can be fired more than once per turn. It is intended to eliminate the unrealistic tactic of firing a ?full broadside"" on the last impulse of one turn and then repeating it on the first impulse of the next.

(E2.0) PHASERS

The phaser is the primary weapon of most starships in the game. It is a phased-energy beam which, when striking the target, does physical damage due to its kinetic force and also creates an electrical discharge that can burn out various systems. There are four basic types of phasers used within Cadet Training Handbook, most of which uses a different table when fired at an enemy ship or other target. The phaser-G is found in Graduate Training and uses the phaser-III table.

(E2.1) TYPES OF PHASERS

(E2.11) TYPE I - OFFENSIVE PHASER

This is the most powerful type of phaser, causing considerable damage out to as many as eight hexes. This is the phaser used by the Federation ship (the one you will use in Scenario #1). It is also used by all of the ships in Cadet Training Handbook except the Klingon. It is often written as simply phaser-1 or ph-1.

DIE	RANGE										
ROLL	0	1	2	3	4	5	6-8	9-15	16-25	26-50	51-75
1	9	8	7	6	5	5	4	3	2	1	1
2	8	7	6	5	5	4	3	2	1	1	0
3	7	5	5	4	4	4	3	1	0	0	0
4	6	4	4	4	4	3	2	0	0	0	0
5	5	4	4	4	3	3	1	0	0	0	0
6	4	4	3	3	2	2	0	0	0	0	0

TYPE 1 Phaser Table — (c) ADB Inc. Used with permission

(E2.12) TYPE II - OFFENSIVE-DEFENSIVE PHASER
These are shorter-ranged than phaser-1s due to less accurate fire control. The Klingons use phaser-2s on their ships.

TYPE 2 Phaser Table (c) ADB Inc. Used with permission

DIE ROLL	RANGE 0	1	2	3	4-8	9-15	16-30	31-50
1	6	5	5	4	3	2	1	1
2	6	5	4	4	2	1	1	0
3	6	4	4	4	1	1	0	0
4	5	4	4	3	1	0	0	0
5	5	4	3	3	0	0	0	0
6	5	3	3	3	0	0	0	0

(E2.13) TYPE III - POINT DEFENSE PHASER
This type of phaser is the least powerful of all, having an effective range of only one or two hexes. They were designed to be used only against drones. In practice they are used against other ships in close combat but are, of course, less effective. The phasers carried by administrative shuttles use the phaser-3 table (which is why this table is on the Commander's SSD sheets used in Scenarios #7-#12). One other ship in Cadet Training Handbook (used in Scenario #8) uses this weapon.

TYPE 3 Phaser Table

DIE ROLL	RANGE 0	1	2	3	4-8	9-15
1	4	4	4	3	1	1
2	4	4	4	2	1	0
3	4	4	4	1	0	0
4	4	4	3	0	0	0
5	4	3	2	0	0	0
6	3	3	1	0	0	0

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(E2.1) ENERGY FOR PHASERS
It costs one point of power to fire a phaser-1, or phaser- 2 (or the phaser-G in Graduate Training). The phaser-3 costs one-half point of power for a ship to fire a phaser-3. Shuttlecraft do not use energy allocation; they can fire their phaser-3 once each turn, Hydran fighters can fire all the shots of their phaser-G each turn.

(E2.15) TYPE G - GATLING PHASER
(E2.15) TYPE G - GATLING PHASER: A particularly vicious weapon developed by the Hydrans. This weapon uses the same general rules for phasers found in (E2.0), except as modified below. The terms phaser-G, and ph-G are used interchangeably, although ph-G is the most common.

(E2.151) A gatling phaser can be fired up to four times during a single turn. Each firing may be during the same or a different impulse and at the same or a different target. Gatling phasers can fire at different targets in the same impulse. A gatling phaser cannot fire more than four shots per turn, nor can it fire more than 4 shots within a 1/4-turn period. The 1/4-turn period can include some shots fired during the final portion of one turn and some shots fired during the early portion of the subsequent turn.

(E2.152) The effect of a phaser-G is determined on the phaser- 3 table. Each firing costs 1/4 of an energy unit (a total of 1 point for all four shots).

(E2.2) RESTRICTIONS AND CONDITIONS

(E2.21) A given ship may fire any number of its phasers in a given impulse, assuming that energy has been allocated for this purpose, the ship has fields of fire that permit such firing, and other rules (e.g., frequency of operation) are obeyed.

(E2.22) In later scenarios, players must allocate energy in the Energy Allocation Phase to be able to fire their phasers. For now, your Chief Engineer is taking care of this. After a few scenarios, you will be given rules and expected to take care of it yourself.

(E2.23) During each turn, each phaser on the ship, except phaser-Gs, may be fired no more than one time. Note that all phasers have a specific field of fire, and that a ship may not have targets for all of its phasers on any given turn. Possible fields of fire for the ensuing turn should be considered when planning how much energy to allocate to phasers.

(E2.24) Each box on the SSD represents one phaser and can be destroyed by a single damage point. Each phaser operates independently. Even if two or more phasers are shown connected, they can fire at different times and at different targets; one can be destroyed without affecting the other.

(E2.4) FIRING PHASERS
When firing phasers, first determine the range to the target by using rule (D1.4). Then roll one die, and cross-index the result with the range on the appropriate phaser chart to yield the number of damage points scored.

Example #1: Look at the Klingon Cadet battlecruiserSSD. Note the phaser-2 table. A phaser-2 is being fired at a target three hexes away. The die roll is 2 which means that four points of damage have been scored.

Example #2: Look at the Federation Cadet cruiser SSD. Note the phaser-1 table. A phaser-1 is being fired at a ship one hex away. The die is rolled and the result is a 1, which means eight damage points.

(E3.0) DISRUPTOR BOLTS
Disruptor bolts are carried by Klingon ships (and certain others). Disruptors operate on the principle of an energy discharge. They are less effective than photon torpedoes, but can be fired more often. The total effect over several turns is nearly identical, but a dynamic situation is created. Disruptors cannot wreck a ship in one shot like photons can, so the Klingon must maneuver for a second shot. The arming cycle of the Federation photons force the ship to operate in a rhythm of alternating fire/reload turns.

(E3.1) DESIGNATION
Each DISR box on the SSD represents one disruptor bolt firing point. Each is recorded and fired separately.

(E3.2) ENERGY FOR DISRUPTOR BOLTS
Disruptors can be fired every turn (like phasers). They are direct-fire weapons and are fired during the Direct-Fire Weapons Step of any impulse. Each disruptor can be fired once per turn. Disruptor bolts are fired as follows. Two units of energy are allocated for each bolt which is to be fired. The bolts are an energy discharge and as such cannot be held from one turn to the next. Any bolts for which energy has been allocated, but which have not been fired by the end of the turn, are lost.

(E3.21) Energy to fire disruptors can be from any power source.

(E3.22) Disruptors are fired during the Fire Direct-Fire Weapons Step of any impulse. There is no counter for a disruptor bolt; their effect is determined by die roll and recorded immediately.

(E3.23) A given disruptor may not fire more than once per turn.

(E3.3) FIRING PROCEDURE
The number of damage points scored by the disruptor is determined by the range and a die roll. Refer to the DISRUPTOR BOLT CHART on the Klingon SSD. Using the range, look on the chart to determine the hit probability. Roll a single die. If the result is within the range of probabilities listed, the weapon has hit, scoring damage points as shown on the bottom of the chart.

(E3.31) When the effective range of a disruptor bolt is different from the true range (i.e., the target is cloaked), use the effective range to determine the probability of a hit and the true range to determine the number of damage points scored (if a hit is made).

(E3.32) The maximum range of disruptors is different with each ship class that carries them. Most ships armed with disruptors in Cadet Training Handbook have a maximum range of 30 hexes. Note that disruptors cannot be fired at a range of zero.

Disruptor Table	FF/FW≤R10				Disruptor max ranges by class.		
DIE	RANGE			DD/DW< Qship	CL/CW <	< CA/BC/BCH	DN & base <
ROLL	0	1	2	3-4	5-15	16-22	23-30	31-40
TO HIT NA	1-5		1-4		1-3		1-2
DAMAGE 5	4		3		2		1

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FF/FW Limited to Range 10
DD/DW limited to Range 15
CL/CW limited to Range 22
CA/BC/CC/BCH limited to Range 30

(E4.0) PHOTON TORPEDOES
Photon torpedoes are carried by Federation ships and certain others. They are considered to be the heavy weapons of the ship, but because they must be armed in advance and cost a considerable amount of energy to hold in the launch tubes if they are not fired immediately, their use is restricted to heavy combat situations. A Federation ship does not normally keep photon torpedoes armed because of the energy requirement to simply hold them in the tubes and for safety purposes.

(E4.1) FIRING PHOTON TORPEDOES
Each PHOTON (or PHOT) box on a Federation ship's SSD represents one photon torpedo launch tube. Each tube is kept track of separately. The Cadet cruiser Constellation has two photon torpedo launchers.

(E4.11) Photon torpedoes are direct-fire weapons fired in the Direct Fire Step of the Impulse Procedure, and whether they hit or miss is determined immediately by die roll. There are no counters for photon torpedoes.

(E4.12) To determine if a photon torpedo has hit the target, roll a single die. If the result is between the listed hit numbers (inclusive), the torpedo has hit its target. For example, let's say you are firing a photon torpedo at a target six hexes away. You roll a 3. Look at the Photon Torpedo Table on the Federation Cadet cruiser SSD. A range of 6 is within the 5-8 range bracket, so we will use that column. Under it, the Hit row says 1-3. Thus, a die roll of 1, or 2, or 3 would be a hit, while a die roll of 4, or 5, or 6 would be a miss. In this case, you hit. Now, what would be the result of a die roll of 4 at a range of 11? [Range 11, Die Roll 4, the torpedo missed the target]

Photon Table	(c) ADB Inc. Used with permission					
DIE	RANGE					
ROLL	0	1	2	3-4	5-8	9-12	13-30
TO HIT NA		1-5	1-4	1-3	1-2		1
DAMAGE			8				

(E4.13) Regardless of range, a photon torpedo does eight points of damage if it hits. The max range is 30.
(E4.14) Because of their terrible power, photon torpedoes cannot be fired at a target that is in the same hex as the ship or adjacent to it. They have a minimum range of two hexes.

(E4.2) RELOADING PHOTON TORPEDOES
Photon torpedoes require more time to arm than a phaser. Your Chief Engineer will reload the torpedoes as fast as he can, but it takes two turns to arm them. For this reason, you cannot fire the torpedoes on the first turn. You can fire either or both torpedoes on the second turn (or you can wait until the third or fourth turn if you wish). However, when you fire a torpedo, you won't be able to fire another one from the same launcher until the second turn later (rather than on the next turn, like a phaser). The two torpedo boxes are completely independent. They can be fired at the same time or at different times, at the same or different targets. A single damage point will destroy one tube and leave the other undamaged.

EXAMPLE: You fire torpedo A on turn 2, but do not fire torpedo B on that turn. You could fire torpedo B on turn 3; let's assume that you do. You cannot fire torpedo A on turn 3 because it was fired on turn 2 and takes two turns to reload, so you could fire it on turn 4. Torpedo B will be ready on turn 5.
NOTE: For game purposes, the exact point during the turn has no importance. You could fire torpedo A during the last part of turn 2 and then again during the early part of turn 4.

(E4.21) ARMING PHOTON TORPEDOES
To arm a photon torpedo, two points of warp energy must be allocated to a specific photon torpedo tube on each of two consecutive turns. The second turn may be the turn of firing. The Federation Cadet cruiser, which has two photon tubes, would have to expend four units of warp energy on each of two consecutive turns to fire a full spread of two torpedoes. Note that since APR power cannot be used for movement, and since only one unit of impulse power can be used for movement, a Federation ship arming photon torpedoes would be limited to a maximum speed of 13 because 4 of its 16 points of warp power are going to the torpedoes. The remaining 12 points, plus 1 point of impulse power, give atop speed of 13.

(E4.22) HOLDING ARMED PHOTON TORPEDOES
If the arming of a photon torpedo has been completed on a given turn, and the torpedo is not fired on that turn, then the ship must allocate one unit of energy for that tube for each turn until the torpedo is fired. If this holding energy is not paid, the torpedo crew will eject the torpedo harmlessly into space. The holding energy can be from any source (on your own ship).
EXAMPLE: On turn 5, two units of energy are allocated to photon tube A. On turn 6, two more units are allocated, and torpedo A is armed. If two units of energy had NOT been allocated on turn 6, the incomplete torpedo would have been expended automatically, and arming would have to begin again later. Assuming that arming was completed on turn 6, the torpedo could have been fired on any impulse of turn 6. If not, then on turn 7 the ship must either expend one unit of energy to hold the torpedo in the tube or eject the torpedo harmlessly into space. If not fired on turn 7, another unit of energy must be allocated on turn 8 to hold the torpedo in the tube, or again the torpedo would have to be ejected. An armed torpedo can be held indefinitely (well, perhaps not forever, but longer than any one scenario would last), assuming that the power cost is paid each turn. The drone in 1206 will turn and enter 1107 because this will be closer than moving straight ahead to 1106. The drone in 1109 will not turn to enter 1008, but will move directly ahead to hex 1009 since both hexes are the same distance to the target. You can replay the scenario with a live opponent controlling the Klingon drones. It will be more challenging.

(E4.23) ENERGY REQUIREMENT
The 4 points of energy to arm a photon MUST all come from the warp engines. The 1 unit of power to hold it may come from any source.

(E7.0) FUSION BEAMS

The fusion beam is the primary armament of many ships in the Hydran Fleet. The weapon is short-ranged but extremely powerful.

(E7.1) DESIGNATION

(E7.11) SSD: Each box on the SSD represents a single fusion beam generator. Each such generator is recorded separately.

(E7.12) DESTRUCTION: Hydran fusion beams are destroyed on "torp" hits.

(E7.2) ARMING PROCEDURE

(E7.21) ENERGY: Charging a fusion beam requires two points of power from any source during a single turn.

(E7.22) COOLING: If the weapon is fired, it requires one turn of cooling and cannot be armed or fired during the game turn after the turn on which it was fired. The weapon can be discharged, i.e., the power is simply dumped into space not fired at an enemy ship, in which case cooling is not required.

EXAMPLE: If a fusion beam is fired during any impulse of turn 1 (no matter whether 1 or 32), it cannot be armed or fired on any impulse of turn 2.

(E7.23)HOLDING: Armed fusion beams, like disruptors, cannot be be held over a turn break. The energy in them must be fired or released into space at the end of each turn.

(E7.24) RESERVE POWER: Fusion beams can be fired with reserve power (H7.2)

(E7.3) FIRING FUSION BEAMS

(E7.31) FUSION BEAM TABLE: Fusion beam fire is resolved on the FUSION BEAM TABLE.

Fusion Beam Table					(c) ADB Inc. Used with permission	
ROLL	RANGE 0	1	2	3-10	11-15	16-24
1	13	8	6	4	3	2
2	11	8	5	3	2	2
3	10	7	4	2	1	1
4	9	6	3	1	1	0
5	8	5	3	1	0	0
6	8	4	2	0	0	0

(E7.32) PROCEDURE: Determine the range to the target. Roll one die, and cross-index the die roll result with the range column. The result is the number of damage points scored.

(E11.0) PLASMATIC PULSAR DEVICE

At some point ISC scientists developed the Plasmatic Pulsar Device (PPD). The basic concept of the weapon is a series of intensely focused plasma energy pulses that are conveyed to a target on a carrier wave.

(E11.1) DESIGNATION

(E11.11) DEFINITION: Each box on the SSD labeled "PPD" represents one device. Each device is treated and recorded separately. The PPD is a direct-fire weapon.

(E11.12) DESTRUCTION: PPDs are destroyed on "drone" hits

(E11.15) FIRE CONTROL: Active fire control (D6.1) and a lock-on (D6.11) is required for the entire time that the weapon is pulsing, even if over two turns.

(E11.2) ARMING PROCEDURE

(E11.21) POWER: To arm a PPD, four points of power (from any source) must be allocated on each of two consecutive turns. The PPD can then be fired on the second turn of arming.

(E11.22) HOLDING: If not fired on the second turn of arming, the PPD may be held ready to fire at a cost of two points of energy (from any source) per turn. As with other weapons, if a PPD armed on a previous turn is not fired, the holding cost must be paid at the start of the new turn or the energy is lost and ejected into space. If the holding cost is paid, the weapon can be fired during that turn or held longer if the holding cost is paid each turn.

(E11.23) CYCLE: The PPD can only receive energy for one firing at a time. It cannot receive the first turn energy for one charge if it is still holding (or arming) an unfired charge. Note that, as firing takes place over a period of four impulses, arming energy can be added at the start of one turn while firing begun on the previous turn is still in progress.

EXAMPLE: The weapon was armed on turns 1 and 2 and was fired on impulse 31 of turn 2. The pulses are resolved on impulses 31 and 32 of turn 2 and on impulses 1 and 2 of turn 3. Even so, arming energy could be added during the Energy Allocation Phase of turn 3 (and the weapon fired on turn 4, assuming arming was completed on that turn).

(E11.24) RESERVE POWER: The PPD cannot begin arming with reserve power.

(E11.25) UNDERLOAD: The PPD can be loaded at less than the full charge, although arming still requires two consecutive turns with at least two points of energy, and a maximum of four, added on each turn. For every two points of energy added to the PPD, it can fire one pulse (at the same target, within the rules). An undercharged PPD can be brought to greater (or full) strength with reserve power or by holding it for an additional turn and allocating more energy (the holding energy does not increase the strength, and is not reduced for the lower strength). Note that the normal arming level requires eight points of energy and produces four pulses. See (E11.311). It is not possible to produce a PPD with one pulse.

(E11.3) COMBAT PROCEDURE

(E11.30) GENERAL: When the PPD is fired, it operates over the current impulse and the next three impulses. In effect, it gets four "shots" (termed "pulses"; there may be less than four in some cases) at the same target and rolls for a wave-lock

(E11.31) each time. [It cannot change targets between pulses of the same charge; exceptions: (E11.56) and (E11.546).] Whenever a wave-lock is achieved, all subsequent pulses automatically hit.

(E11.31) PROCEDURE: The PPD is a direct-fire weapon and is fired during the Fire Direct-Fire Weapons Step before any other fire by that side. The owning player designates the target (at the same time as all other direct-fire is designated) and resolves fire as follows: Determine the range; Roll two dice for each PPD; and If the total of the two dice is equal to or less than the wave-lock probability number (i.e., "hit number") for that range shown on the chart on the SSD, the device has achieved a wave-lock. It then begins to score damage (E11.331). See (E11.37).

(E11.311) Upon firing a PPD, the owning player must write down the turn and impulse of firing, the identity of the firing ship, and how many impulses each PPD is programmed to pulse; see (E11.25). This written record is then placed face down. After each pulse is resolved, the owning player must announce whether or not the PPD wave-lock is still present. After the wave-lock is released, the written record is revealed and confirmed. Retain this record until the end of the scenario to verify the energy allocation records.

(E11.312) In all cases, the dice roll is made at the effectiverange and the damage is based on the true range. The weapon cannot be fired if the true range is 3 hexes or less, regardless of what the effective range is, although in some cases a wave-lock might be retained (E11.521).

(E11.33) PULSES: The dice are rolled on the impulse of firing. If the dice roll indicates a wave-lock, the damage for that range is scored.

(E11.331) Unless conditions change (E11.5) and the wave-lock is lost, the same damage will be scored on the subsequent impulses until the total number of pulses for which energy was provided have been fired. If the dice roll indicates no wave-lock, the wave (or pulse) for that impulse is lost but the player rolls for another wave-lock on the next impulse (E11.34), assuming that the weapon has another pulse to fire. Once a wave-lock is achieved, all remaining pulses (from the original arming, if any) score damage unless the wave-lock is lost (E11.51). Exception: Cloaked targets (E11.473).

(E11.332) All damage scored by a given PPD during a given impulse is resolved as a single volley separate from other weapons (including other PPDs) and other pulses of that PPD. These PPD volleys are resolved before other direct-fire weapons. For purposes of phaser damage restrictions (D4.321), internal damage is considered to have come from any or all directions with penetrated shields that the specific PPD pulse came through. For example, a ship with its #1, #2, and #3 shields down hit by a PPD on its #3 shield would lose phasers able to fire through the #2 or #3 shield, but not phasers only able to fire through the #1 shield, since none of the PPD "splash" struck that shield.

(E11.333) It is not possible to voluntarily "pass" on one pulse and then continue with subsequent pulses. The weapon can be voluntarily shut down on a subsequent Fire Direct-Fire Weapons Step, but at that point all remaining pulses are lost (E11.362) The player could deliberately miss with a pulse, but would haveto roll to re-acquire wave-lock (E11.34) on the next Fire Direct Fire Weapons Step.

EXAMPLE: A PPD is fired at a target at a range of 12. The dice roll at the instant of firing is 11, indicating a miss (i.e., failure to attain wave-lock). Thus, the first of the four pulses is lost. On the next impulse, a 4 is rolled, indicating a wave-lock has been achieved. Thus, pulse #2 will hit, as will (automatically, unless wave-lock is lost) pulses #3 and #4, one pulse on each of the next two impulses. Pulse #1, however, missed and is lost.

(E11.34) RE-ACQUISITION: If the PPD achieves a wave-lock and scores damage, and then [due to changing conditions

(E11.5)] loses its wave-lock, it will try to re-acquire the wave-lock (by making another dice roll) to the original target in any remaining firing impulses. It cannot switch targets.

EXAMPLE: In the example above, if the target moved behind a planet on impulse 2 the wave-lock would be lost and pulse #2 would miss. If a clear line of sight was established on the next impulse a new die roll could be made to see if pulse #3 hits. If this happened (and the dice roll failed) in impulse 3, the PPD would cause no damage in that impulse, but would still roll for a wave-lock during impulse 4.

(E11.35) SPLASH EFFECT: The impact of the weapon is spread over two or three shields. This is not an optional use of the weapon. It is the way that the weapon always operates. Players cannot voluntarily operate the weapon "without splash" under any circumstances. [See (E11.353) for an example of involuntarily losing a splash element.] The total damage shown on the "damage" line of the PPD chart is for statistical purposes and never reflects the damage actually scored on a single shield.

(E11.351) If the line of fire is directly along a hex side (D3.41), do not determine which shield is hit but divide the damage points evenly between the two shields (as on the "alternate" line on the chart), with any odd points going to the stronger shield. If the shields are of equal strength, the owner (of the target) decides which will take the extra damage point.

(E11.352) If the line of fire is against a single shield, then divide the damage points between that shield and the adjacent shields on either side, according to the "splash" line on the chart. The main (center) element is scored against the facing shield of the target, while the splash elements are scored against the adjacent shields clockwise and counter-clockwise from the facing shield. For example, six damage points from a PPD facing the #3 shield would be scored as 1 damage point on the #2 shield, 4 damage points on the #3 shield, and 1 damage point on the #4 shield. In the case of two damage points, ignore the weaker adjacent shield (if both adjacent shields are equal, the owner of the target decides which takes the damage point); in the case of one damage point, ignore both adjacent shields.

(E11.353) In the case of fighters, drones, [and monsters], or other targets which do not and never had shields], ignore the splash effect and use only the central number on the splash line. For example, when fired at a drone at range 6, the PPD would score only 4 points per impulse (if it achieved wave-lock). (This does not apply to ships which have dropped or lost their shields.)

(E11.36) RESTRICTIONS: Once firing has commenced, the PPD cannot be switched to another target during the firing sequence.

(E11.361) There are very few exceptions to (E11.36), and none of them are voluntary. Rule (E11.54) provides for the involuntary transfer of wave-lock to a planet. If a wave-lock is achieved to a shuttle or fighter at 5 hexes range, and the range is increased to six hexes, wave-lock will be lost.

(E11.362) The owning player can voluntarily drop the wave- lock and (essentially) cease firing after any pulse. This can be announced at any point after one pulse is fired and before the next is fired. Whether dropped voluntarily or involuntarily, all subsequent pulses are discharged into space. See (E11.546) for an exception when PPD pulses cannot be canceled.

(E11.39) GENERAL REINFORCEMENT: The player operating the target ship can use any general reinforcement (D3.341) to offset the damage from any elements of the PPD at his option, but all general reinforcement points must be used against the first pulse (unless there are more points than needed to stop the damage) before any PPD damage is scored on shields or specific reinforcement.

EXAMPLE: A PPD hit scores 1 point of damage on the #2 shield, 4 points on the #1 shield, and 1 point on the #6 shield. The player operating the target ship has 2 points of general reinforcement. He elects to use one to block the damage to the #6 shield, which is down. He must use the remaining point now, however, rather than waiting for the next impulse when another damage point will strike that shield; he uses it to reduce the damage to the #1 shield.

(E11.4) INTERACTION WITH OTHER SYSTEMS

(E11.41) ESG: The PPD does not interact with an ESG field It cannot damage the field and is not inhibited by it.

(E11.45) PLASMA SYSTEMS: The PPD has no effect on plasma torpedoes (FP1.6) or anything that plasma torpedoes won't affect.

(E11.47) CLOAKING DEVICES: These have special effects on a plasmatic pulsar device.

(E11.471) A ship might begin cloaking while held in a wave-lock. The fade-out procedure defines the steadily "increasing" or "decreasing" (effective) range. A PPD can maintain a wave-lock on a ship that is cloaking until the end of the fade period and can lock onto a cloaked ship while it is fading-in so long as the true range is greater than three (E11.52). The fade-in period will define the decreasing effective range.

(E11.472) A PPD cannot be fired at a cloaked ship in the Cadet Training Handbook.

(E11.475) Ships cannot fire PPDs while cloaked, cloaking, or uncloaking.

(E11.5) CHANGING CONDITIONS Certain events can change the conditions of the wave-lock and require a new dice roll or permanently break the wave-lock.

(E11.51) NON-LOCKED IMPULSES: During any firing impulse when a firing PPD does not have a wave-lock, it will roll to try to achieve one. If one is not achieved, that pulse will miss (be wasted).

(E11.52) RANGE: The damage scored by a given pulse is based on the true range (E11.312) during the Fire Direct-Fire Weapons Step it is fired. Changes in range will affect the damage caused by a PPD pulse, but will not break the wave-lock (unless the target moves beyond the 40-hex maximum range.

EXAMPLE: A target at range 10 is held in a wave-lock. The pulse fired on impulse 5 causes 6 points of damage. The target moves one hex farther away (range 11), and the pulse fired on impulse 6 causes only 5 points of damage. The firing ship moves one hex closer (range 10), and the pulse on impulse 7 causes 6 points of damage.

(E11.521) If the target moves within the minimum range (known as the "myopic zone"), the PPD retains its wave-lock even though no damage is scored, and if the true range subsequently increases beyond the minimum while the weapon is still firing, it will cause damage during the impulses after the range increases.

(E11.54) BREAKING WAVE-LOCK: If any of the following events occur, the wave-lock is broken and all subsequent pulses are lost. Do not roll for a new wave-lock.

(E11.541) The target moves out of the firing arc (D2.0) of the PPD or moves out of range.

(E11.542) The target is destroyed (D4.4).

(E11.544) The specific PPD box on the firing ship is destroyed (D4.2).

(E11.545) The firing ship is captured (D7.0).

(E11.546) The line of fire is blocked by a planet. The transfer of wave-lock is made in the Fire Direct-Fire Weapons Step; PPD fire cannot be canceled between the involuntary transfer and the actual firing (E11.362).

(E11.548) The owning player ceases fire by dropping the wave-lock (E11.362).

(E11.549) The firing ship turns off its active fire control or otherwise loses lock-on. See (E11.15).

(E11.56) TARGET DOCKING: If the target lands inside of a larger unit, the carrier wave will switch to the larger unit as its target. If something launches from a target, the wave-lock will remain on the larger element.

(E11.58) NON-BREAKING INCIDENTS: The following events will NOT (at least not in and of themselves) break a wave-lock:

(E11.581) The firing ship is boarded, changes speed or direction (unless the target becomes out of arc), or any other event not specifically listed in (E11.54).

(E11.582) The target is held in a tractor beam, changes speed or direction, or any other event not specifically listed in (E11.54).

(F1.0) SEEKING WEAPONS
Seeking weapons, unlike direct-fire weapons, are represented by a counter on the map and move toward their targets at a given speed. Normally, a seeking weapon will hit (or miss) its target several impulses (or even several turns) after it is fired. The primary characteristic of seeking weapons is that the target ship has an opportunity to outrun, evade, and fire at the weapon. There are two types of seeking weapons: drones (basically radarhoming missiles) and plasma torpedoes (charged balls of energy). Plasma torpedoes, which are much more dangerous, will be introduced later. Suicide shuttles use the drone rules.

(F2.0) SEEKING WEAPON MOVEMENT
Seeking weapons move with a fixed speed (specified in the scenario) and a turn mode of 1 at all speeds. They home in on their target, moving in each of their impulses toward the target in any manner (at the weapon owning player's option) so long as they move closer to their target if it is possible. If it is not possible to get closer to the target, they must move in such a way as to get no farther away from their target (if possible).

EXAMPLE: The Constellation has just entered hex 0808. There are drones in hexes 1109 (facing E) and 1206 (facing F). The drone in 1109 could enter 1008 or 1009 as either of these hexes are closer to the ship than the drone currently is. The drone could (within its turn mode) turn and enter 1110, but as this hex is not closer to the ship and a closer hex is available, it is not permitted to enter 1110. The drone in 1206 could turn right and enter hex 1205, but this is not allowed because that hex would be farther from the target. It could move straight ahead to 1106, but that is not allowed because it is possible for the drone to turn left and enter 1107, which is closer to the target than 1106. Note that this drone could not enter 1207, 1307, or 1306 because of turn mode limitations AND because they are further from the target.

(F2.1) SIMULTANEOUS MOVEMENT
If a seeking weapon and its target are moving on the same impulse, the drone homes in on the hex the target is entering, not the one it is leaving. If the target enters the weapon's hex, the weapon does not move but strikes the target during the Resolve Seeking Weapons Step on the shield that faced the drone when the ship entered the hex.

(F2.2) EXPLOSION: Seeking weapons explode when entering the hex of their target. (They are considered to have hit their targets at this point.) The effect of this explosion is resolved during the Resolve Seeking Weapons Step of the impulse (see the Impulse Chart). As a seeking weapon explodes immediately upon entering the target's hex, the target may not fire on it at a range of 0. Note that if a seeking weapon targeted on one ship passes through the hex occupied by another ship, the ship being passed could fire at it at a range of 0 since the weapon did not explode when entering that hex (since it hasn't reached its target).

(F2.3) LAUNCHING

If the seeking weapon is launched in the same hex as its target, the Impulse Chart governs the result. Since the launch of seeking weapons takes place after seeking weapons move but before direct-fire weapons are fired, the target ship will have the opportunity to fire direct-fire weapons at the seeking weapon (range 0) before it can hit. Which weapons are eligible to fire and which shield is facing the weapon is determined by the relative facing of the ship that fired the weapon. (Temporarily back the launching ship up into the hex directly to its rear, then judge the firing arcs from that position, then restore the launching ship to its proper place.) If the weapon moves first (in a later impulse), it will hit the target (unless destroyed); if the ship moves first, the weapon will follow it.

(F2.4) MULTIPLE SHIPS IN A HEX

Even if more than one ship is in the same hex as the target, only the target is damaged by a seeking weapon.

(F2.5) DRONE vs. DRONE

Drones can be targeted on drones; a drone will destroy another drone on impact.

(FD1.0) DRONES: GENERAL RULES

Drones are small unmanned missiles with warp-speed capability. Klingon and other ships carry these devices as auxiliary weapons. Drones are similar to 20th Century radar homing missiles. They home in on (i.e., follow) the target.

(FD1.1) DRONE LAUNCHERS

Drones are carried in drone racks which carry four drones and can launch one of them each turn (not within 1/4- turn of a launch by that specific rack on the previous turn). Notice, for example, on the Klingon Cadet battlecruiser a row of four boxes (below the ship) marked Drone Rack #1. This is the ammunition track which records the number of drones loaded on the launch rack shown on the ship itself. If that launcher is destroyed in combat, any drones still on the launcher are also destroyed. This track cannot be used to score internal damage. As each drone is fired, check off one box on the track.

(FD1.2) LAUNCHING DRONES

Drones can be launched during the appropriate step of each impulse during each turn. When launched, the drone is placed on top of the launching ship, facing any direction at the option of the owning player so long as the target is in the drone's FA arc. The target for each drone must be announced in this phase. (Players can experiment with the more advanced rules in which drone targets are a secret.) It requires no energy to launch a drone. Whenever a drone is launched, mark one box on the ammunition track for that drone rack. Note that while a drone can be launched in any direction, it must move one hex in that direction (to satisfy its turn mode) before it can turn.

(FD1.3) DRONE TARGETS

A drone may be targeted on anything (including another drone or a shuttle) except a plasma torpedo. The target of a drone is set at the time of launch and can never be changed.

(FD1.4) DRONE RANGE

All drones are assigned an endurance expressed in turns. In Cadet Training Handbook, this is three turns for all drones. If the drone has not been destroyed or has not hit its target when this endurance is exhausted, it is removed from play. Drones cannot be recovered (i.e., cannot be picked up).
Note that if a drone is fired during a given impulse of a turn, it will reach the end of its endurance during the same impulse of a later turn. For example, a drone launched on impulse #4 of turn #3 will be removed if it has not hit its target or been destroyed by the end of impulse #4 of turn #6.

(FD1.5) FIRING AT DRONES

Any type of weapon can be fired at drones, but some (because of their nature) are penalized when doing so.

(FD1.51) Phasers, plasma torpedoes, and other drones can all be fired at drones without penalty.

(FD1.52) When firing photon torpedoes, disruptors, fusion beams, or plasmatic pulsar devices, add 2 to the die roll when firing at drones, thus making it harder to hit them. (You were allowed to ignore this penalty in Scenario #2, but never again. From this point on, space gets dangerous.)

(FD1.53) Other weapons, not in Cadet Training Handbook, have different effects. You will see them in this rule in the Basic Set.

(FD1.54) A drone is destroyed if it receives damage points equal to its destruction rating, which is four points for all drones used in Cadet Training Handbook.

(FD1.55) If several drones are in the same hex and one is destroyed, the others are not affected.

(FD1.6) DRONE COMBAT
When a drone is in the hex of its target during the Resolve Seeking Weapons Step, it explodes and scores a number of damage points on the facing shield of the target equal to its warhead rating (as in Scenario #2). This is six damage points when using Cadet ships (twelve damage points when using the regular ships in Scenarios #7-#12). Damage points are scored against the shield facing the direction of approach (assuming that shield is still functioning). Damage points in excess of the shield's strength are scored as internal damage.

(FD4.21) DRONE RACKS
The Klingon D7 has two drone racks. Each turn, the D7 can launch one drone; this can be launched from either rack. The Orion Pirate Raider in Scenario #8, or a Kzinti ship, can launch one drone from each rack each turn. In the Full game Drone Racks have a letter designation for type and abilities.

(FP1.0) PLASMA TORPEDOES
A plasma torpedo is a ball of matter on the brink of being converted to energy. The weapon is extremely powerful. It is used by the Romulans, Gorns, and Interstellar Concordium. Plasma torpedoes are seeking weapons represented by counters which move (like drones) and follow their targets.

(FP1.1) LAUNCHERS
(FP1.11) Each TORP box on the SSD represents one plasma torpedo tube and can arm one plasma torpedo at a time. In the Cadet Game all torpedoes are type-S. The Standard Game includes the more powerful type-R used by the Romulan War Eagle. Graduate Training will introduce ships with the smaller plasma-F torpedo. SFB includes several other types.

(FP1.2) ARMING
(FP1.21) Each plasma torpedo requires three turns to arm. Energy must be allocated to the specific launch tube on each of three consecutive turns. The arming energy can come from any source.

(FP1.22) The energy to arm a plasma-S torpedo must be applied over a three-turn period in EXACTLY these increments: two points on the first turn, two points on the second turn, and four points on the third turn. If not launched on the third turn, the ship must allocate two points of energy on the next turn to hold it (allowing it to be launched on that fourth turn) or the torpedo is ejected harmlessly into space. For an advanced technique, see Reserve Power (H7.2) on page 21.
EXCEPTION: A ship may, in effect, delay the launching of a plasma torpedo by only allocating two units of energy on the 3rd turn of arming. If done, the 1st turn's energy is lost, and the 2nd and 3rd turns (two energy points each) become the 1st two turns of the three-turn arming cycle. This is known as the rolling delay.

(FP1.23) Ships do not begin the scenario with torpedoes armed, but must arm them during the scenario. The robot ship is something of an exception. In the non cadet full game rules F torpedoes are always considered armed and held at the start of a scenario.

(FP1.3) LAUNCHING
Each plasma torpedo may be launched during the Launch Seeking Weapons Step of any impulse during the third turn of arming. If it is not launched during this turn, it may be held over and launched during any subsequent turn. However, holding an armed torpedo requires paying two additional points of energy each turn. Plasma torpedoes CAN be launched in the same hex as their targets. The torpedo must move directly forward on its first impulse.

(FP1.4) MOVEMENT
Plasma torpedoes are seeking weapons represented by counters and move by rule (F2.0). As the type-S plasma torpedoes in Basic Training have an endurance of 25 hexes, they may (if launched late in the turn) be on the board during parts of two turns (more in Scenarios #1-#6). All plasma torpedoes move at the maximum speed allowed in that scenario (8 in Scenarios #1-#3, 16 in Scenarios #4-#6, and 32 in Scenarios #7-#12), so the torpedoes are actually MORE dangerous (i.e., they stick around longer) in the early scenarios.

(FP1.5) WARHEAD STRENGTH
The warhead strength of a plasma torpedo is determined at the instant of impact, based on two factors: the distance that the torpedo has traveled (it grows weaker the farther it travels) and damage done to it by phasers and (possibly) other effects. The warhead strength after traveling a given range (for the plasma-S torpedo) is shown on the Romulan Cadet cruiser SSD. The damage is applied to the target during the Resolve Seeking Weapons Step (exactly as with drones).

(FP1.6) FIRING AT PLASMA TORPEDOES
Plasma torpedoes may be fired at only by phasers (of any type) just as any ship may be. Every two points of damage by phaser fire reduces the warhead strength by one. Record hits made against a given plasma torpedo, and adjust the strength of the weapon accordingly on impact.
(Note that phaser damage is effectively a permanent reduction on that specific torpedo's strength.) Only the phased-energy beam of the phaser can damage a plasma torpedo. No other weapon, including another plasma torpedo, will damage a plasma torpedo. ONLY phasers or impact with a huge object (such as a planet or asteroid) will damage a plasma torpedo.

(FP1.7) SPECIAL COMBAT RULES
If a plasma torpedo has been armed, and the torpedo launch tube is destroyed, the torpedo may still be launched during the next 1/4 turn; otherwise it is lost. It cannot be held. If the 1/4-turn period extends into the next turn, no holding energy is required. Destruction of the plasma torpedo systems box on the SSD destroys the ability of the ship to produce new weapons, but not its ability to launch the one it has already created.

(FP1.8) FEEDBACK
If the torpedo is launched in the same hex as its target and hits its target before the target moves to another hex, the firing ship receives feedback damage on the shield facing the target equal to 25% of the warhead's strength (multiply by 0.25 and drop any fraction less than 0.50, raise fractions of 0.50 to the next whole number). This does not reduce the warhead's strength. This feedback damage does not affect any other unit in that hex.

(FP2.0) TYPES OF PLASMA TORPEDOES

Only the type-S torpedo is used in the Cadet Game. Type-R torpedoes (used in the Standard Game) require 2-2- 5 energy to be armed and cannot be held. Type-F torpedoes (used in Graduate Training) require 1-1-3 energy to be armed and cost 1 point to hold. Note that the terms plasma-S and type-S plasma are interchangeable, as with phaser- 2 and type-2 phaser. In the Captain's Edition, there are several other types of plasma torpedo (types G and D) which are smaller than the type-S.

Plasma Torpedo Table					(c) ADB Inc. Used with permission		
RANGE	0-10	11-15	16-20	21-23	24	25	26
S	30	22	15	10	5	1	0

RANGE	0-10	11-15	16-18	19	20	21
G	20	15	10	5	1	0

RANGE	0-5	06-10	11-12	13-14	15	16
F	20	15	10	5	1	0

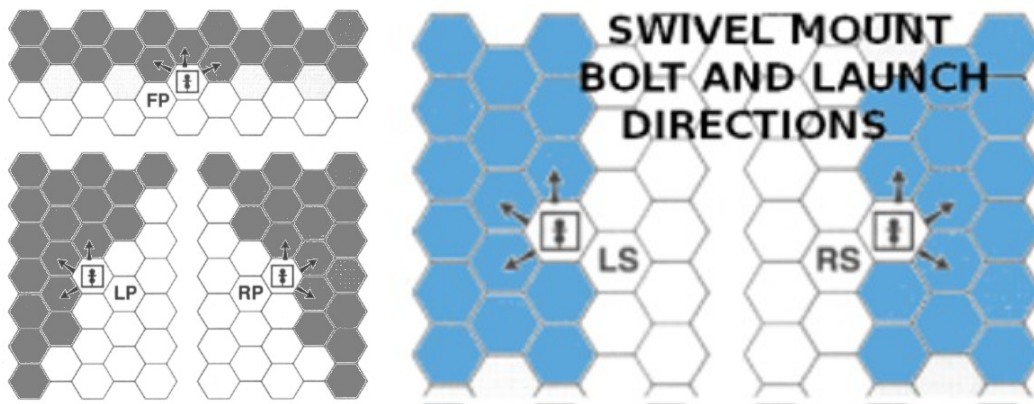## (FP3.0) FIRING ARCS AND LAUNCHERS

During the Launch Seeking Weapons Step in which a plasma torpedo is launched, the counter for the torpedo is placed on top of the firing ship. The direction that the counter is faced depends on the launcher. There are two types: fixed and swivel.

(FP3.1) FIXED LAUNCHERS

This type of launcher is used on the Romulan Cadet cruiser and Romulan Cadet KR cruiser (and on the War Eagle in the Standard Game). It is fixed in position and will only launch a torpedo directly ahead; the target must be in the ship's FA firing arc or the torpedo cannot see it and will be lost. If no target is within the valid arc, the torpedo cannot be targeted (a plasma-R, which cannot be held, would have to be ejected into empty space). The counter must be faced in the same direction as the ship.

(FP3.2) SWIVEL MOUNTS

These are not used in Basic Training. This section can be ignored until you complete Scenario #6, but will be needed later. Some ships have swivel tubes allowing their torpedoes to be aimed at targets within a larger arc. In Advanced Training, the Romulan KR uses this system. (The KR used in the Cadet Game uses a fixed launcher.) The left torpedo can be launched in directions 1, 5, and 6 (relative to the ship) and can be locked on any target in the LF and L firing arcs. The right torpedo can be launched in directions 1, 2, and 3 (relative to the ship) and can be locked on any target in the RF and R firing arcs.

(FP4.0) PLASMA TORPEDO GUIDANCE

Plasma torpedoes are self-guiding. Once launched, they do not require the assistance of any ship to find their targets.

(G4.0) LABORATORY SYSTEMS
The laboratory boxes indicate the ability of the ship to conduct scientific experiments and gather information. In monster scenarios, labs can be used to gain victory points. In combat with other ships, however, they in effect become just free hits.

(G4.1) SCIENTIFIC RESEARCH
The primary operation of labs in scenarios is the scientific investigation of a monster. The chart below is used to determine the amount of information gained about the monster on each turn. During the turn, the player should record the closest approach (in effective range, as adjusted for failure to lock-on or sensor damage, if any) of his ship to the monster. (That is, the range to the monster at the point when the ship and monster are closest to each other.) The chart is based on the distance from the monster at closest approach.

Die Roll	RANGE										
	0	1	2	3	4	5	6	7	8	9	10
1	10	9	8	7	6	5	4	3	2	1	0
2	9	8	7	6	5	4	3	2	1	0	0
3	8	7	6	5	4	3	2	1	0	0	0
4	7	6	5	4	3	2	1	0	0	0	0
5	6	5	4	3	2	1	0	0	0	0	0
6	5	4	3	2	1	0	0	0	0	0	0

At the end of each turn, the player must determine how much information he has gained about the monster. This is determined using the chart above. Noting the range at his closest approach to the monster and rolling a single die, the player obtains a result from the chart. This number, multiplied by the number of functioning lab boxes on his SSD at the end of the turn, is the amount of scientific information gathered about the monster. Shuttles (J2.212) and probes (G5.0) may assist in obtaining information.

(G4.2) IDENTIFYING DRONES WITH LABS
This rule is not used in Cadet Training Handbook because there is only one type of drone in this game module. In the Captain's Edition, where there are many types of drones (and secret target identification), it becomes very important.

(G4.3) LAB SUBSTITUTIONS
A ship without labs, including ships that lost them in combat or never had them, can use one (not more) of its control spaces (Bridge, Flag Bridge, Aux Con, Emergency Bridge) as a lab. This does not interfere with its ability to function as a control system. Security stations cannot be used for this purpose.

(G4.4) OTHER LAB RULES
Cloaked ships cannot use their labs to detect or study anything outside of the ship. Labs do not require power for scientific research.

(G5.0) PROBES
Probes are instrument packages used to gather scientific information. Probes can be used against certain types of space monsters or as emergency weapons. In most cases, the probe box on the SSD is just another free hit.

(G5.1) GENERAL RULES

(G5.11) Probes have a maximum range of six hexes.

(G5.12) All launchers in Cadet Training Handbook carry five probes. The box on the SSD is the launcher. A track on the SSD provides check-off boxes for this use.

(G5.13) In Cadet Training Handbook, probes are launched (for either purpose) during the Direct-Fire Weapons Step.

(G5.2) INFORMATION
Probes launched for informational purposes cost one unit of energy each turn for two turns to launch. The second turn of charging may be the turn of launching, or the probe can be held. If not launched on the second turn of arming, the first turn of arming is lost and the second turn of arming is considered to be the first turn of a new two-turn cycle. When a probe is launched, it gains 20 factors of information as detailed in that scenario, but only if the ship is within six hexes of the object being studied. Only one probe may be armed or launched at a time for each launcher on the ship.

(G5.3) EMERGENCY WEAPONS
Probes may be launched at ships or monsters as anti-matter bombs. While the probe launcher could be used as such (usingthe procedure below), it is intended for use as a scientific tool. It can only be fired as a weapon if one (or more) of the following conditions are met.
1. If the ship is crippled. (Half of the internal boxes, not including tracks or armor, are destroyed.)
2. If there are two or more enemy ships and only one friendly ship in the scenario.
3. If directed to use it by the scenario. (G5.31) Anti-matter probes have a warhead strength of 8 and are considered a direct-fire weapon.

(G5.32) They are armed by allocating two units of warp energy on two consecutive turns; the weapon MUST be launched on the second turn. Energy must come from warp engines. Only one probe may be armed at a time (by each launcher), and if a probe is being armed for firing as an anti-matter bomb, no information-research probes may be launched. If energy is not allocated on the second turn, arming is aborted and the energy allocated on the first turn is lost. The same probe could be armed again, or used as a scientific device, on a later turn.

(G5.33) While probes may be launched in any direction, antimatter bombs may only be launched directly ahead (in the row of hexes extending directly ahead of the ship).

(G5.34) To determine if the probe has hit its target, roll a single die. If the result is greater than or equal to the effective range from the ship to the target, the probe has scored a hit. The probe can be fired at a range of zero (an automatic hit).

(G6.0) SECURITY AND KLINGON MUTINY
Unlike other ships in the game, the Klingon starships include numerous individuals of subject races in their crews. Normally, over half of the crew is composed of such individuals. While most of the subjects are not slaves, they are not considered to be politically dependable, and the security stations on each ship keep a constant watch on these crewmen.

(G6.1) SECURITY STATIONS
Hits designated by the DAC as flag bridge hits will be scored against the security stations of a Klingon ship.

(G6.2) HOW MUTINY CAN OCCUR
If all security stations are destroyed, there is a possibility that the crew will mutiny and successfully take control of the ship. This is determined by a die roll. When the last security station is knocked out, a die is rolled immediately to determine if a mutiny has broken out. If it has not, then at the end of that turn, and at the end of all subsequent turns until a mutiny is staged, a die must be rolled. On a die roll of 1, the mutiny has occurred. When the mutiny occurs, roll a second die to determine if the security troops were able to retain control. On a die roll of 1, 2, or 3, the mutiny has been put down. On a die roll of 4, 5, or 6, the mutiny has been successful.

(G6.21) While there is nothing to prevent the Klingon player from transferring boarding parties around between his ships, the presence of more or fewer boarding parties has no effect on the chance of a mutiny happening or on its success since the boarding parties themselves are largely non-Klingon troops and would be as likely to mutiny as the crew of the ship.

(G6.22) For every fourth enemy (enemy of the Klingons, not counting mutineers) boarding party on board, subtract 1 from the die roll when determining if the mutiny has occurred (a result of less than 1 is considered to be 1) and add 1 to the die roll when determining if it was successful (over 6 is treated as 6).

(G6.23) If all control spaces (Bridge, Auxiliary Control, Emergency Bridge) on the ship have been destroyed before a mutiny has been declared, subtract 1 from the die roll when determining if it occurs and add 1 to the die roll when determining if it was successful. This is cumulative with
(G6.22).

(G6.24) If the mutiny occurs and is put down, do not roll on subsequent turns. Any crewmen who might have tried it are dead.

(G6.3) EFFECTS OF A MUTINY
If the mutiny occurs and is successful, these actions occur.

(G6.31) No further mutiny die rolls are made.

(G6.32) The ship cannot move or fire weapons. The non-Klingon beings among the crew are never taught these skills. If the mutineers seize control during the turn (as opposed to at the end), the ship stops immediately.

(G6.33) If the mutinous ship was the only Klingon ship, the scenario is over and the ship is captured. The Federation will release the crew on a colony planet and (after examining it thoroughly) return the ship to the Klingons.

(G6.34) If other Klingon ships are in the scenario, it continues with the winning player gaining control of the mutinous ship.

(G7.0) TRACTOR BEAMS
Tractor beams are magnetic force beams that are used to retrieve small objects and tow starships.

(G7.1) GENERAL RULE

(G7.11) Tractor beams may be used at any speed.

(G7.12) Tractor beams may be activated during any impulse of a turn. Once attached, they can be released during any impulse. Once released, a given tractor beam cannot be reused on that turn. This is done in the Tractor Beam Step.

(G7.13) Each tractor beam on a given ship may only be used once each turn. Once released, it cannot be used again on that turn, or on a subsequent turn if within eight impulses of release.

(G7.14) There are no firing arcs for tractor beams (they all may be used in any direction).

(G7.15) One unit of energy is required to operate each of a ship's tractor beams.

(G7.2) USE OF TRACTOR BEAMS

(G7.21) Tractor beams are used to tow starships; see below.

(G7.26) Tractor beams cannot be used to hold a plasma torpedo. They can be used to hold drones and are a powerful defense against those weapons.

(G7.27) Objects held in a tractor beam cannot be forced into contact with another unit.

(G7.3) OPERATIONS

Gaining a tractor beam hold on another ship or object is referred to as gaining a tractor link to the ship or object. This may be attempted during any impulse, but if a tractor link is made, it must be re-established at the start of each turn or it is lost. It is not mandatory to attempt to re-establish a tractor link. Once a tractor link is established, it can only be broken by rule (G7.4) below. It cannot be broken by the application of speed. It could be voluntarily released (G7.12) by the ship operating it.

(G7.31C) RANGE

Tractor beams may only be used against ships or other objects in adjacent hexes or in the same hex. If a tractor link is made, the tractored object will follow the tractoring ship (maintaining a parallel course) for as long as the tractor link is maintained. The courses are parallel in relation to the map grid, not in relation to each other. If a ship that is holding a object in a tractor changes facing, the held object does not swing through a 60degrees arc to maintain the same orientation.

(G7.32C) TOWING

In Cadet Training Handbook, tractor beams are used to tow freighters (not other starships) in the Convoy Raid scenario (#8). They cannot be used (in Cadet Training Handbook) to hold an enemy ship. (The rules for that are very complex and can wait for Basic Set) They can also be used to hold drones and prevent them from hitting your ship. They can be used to hold shuttlecraft. Tractor beams cannot be used to hold your own seeking weapons as this interferes with their guidance.

(G7.33) RELEASING A TRACTOR BEAM

If a tractor beam is attached to an object, it can be released voluntarily by the owning player during the Tractor Beam Step of any impulse in the turn. If energy is not allocated at the start of the next turn, the tractor beam is released. A ship released from a tractor beam operates normally for the remainder of the turn, moving with a speed equal to that with which it would have had without the beam. The turn mode (and in Scenario #10 the sideslip mode) is not affected.

(G7.34) DESTRUCTION OF TRACTOR BEAMS

If tractor beam boxes on the SSD are destroyed during the course of a turn to the extent that a ship does not have as many tractor beam boxes as it has tractor beam links established, beams must be voluntarily released until there is a working box (with power supplied to it) for each beam still operating.

(G7.4) TRACTORING A STARSHIP

When a ship is holding a freighter in a tractor beam, the movement cost of the starship is increased by 1/3 for each freighter towed. The freighter's engines are automatically shut down when the tractor link is established. If this is done during a turn, the movement cost of the pirate ship must be recalculated immediately. Take the total cost of the pirate ship and all freighters it is towing. Divide this into the warp power allocated to movement by the pirate ship. Then add one if a point of impulse power was applied.
EXAMPLE: The pirate ship has allocated 10 points of warp energy (producing 15 points of movement) and 1 point of impulse energy (producing 1 point of movement). The pirate tractors a freighter. The movement is immediately recalculated based on a movement cost of one (2/3 + 1/3) to slow the pirate to a speed of 11 (10 + 1). The pirate uses a speed of 11 for the rest of the turn (unless it releases the freighter or tractors another freighter). When a freighter (or some other object) is held in a tractor beam by one ship, and a tractor beam from a second ship is linked to that freighter, both tractor links are broken and those tractor beams cannot be used for the rest of the turn. Either ship could re-establish a tractor link using a different beam.
(G7.5) CAPTURING SHUTTLES AND DRONES

(G7.51) The conditions for gaining a tractor link to an enemy shuttle or drone are as follows: The capturing ship must be in the same or adjacent hex, have an operable tractor beam, and have one point of power allocated to it.

(G7.52) If a drone is tractored and held until its fuel is exhausted, it is removed from play. If a drone is held in a tractor beam by a ship on the same side as the ship that launched it, it loses its tracking and is removed from the board. Enemy seeking weapons do not lose tracking.

(G7.53) Drones cannot be destroyed by being towed by a tractor beam. (In Cadet Training Handbook neither can shuttles.)

(G8.0) TRANSPORTERS
Most starships in the game contain transporters which are used to move personnel and equipment from one starship to another over short distances. Transporters may be used in Cadet Training Handbook to transport boarding parties.

(G8.1) GENERAL RULES

(G8.11) Transporters are capable of picking up people and moving them to their location or transporting people at the location of the transporter to another location. There does not have to be a transporter unit on both ends of the transfer. Transporting may be done during any impulse, but each transporter may be used only once per turn.

(G8.12) In order to use transporters, the given ship must have undestroyed transporter boxes on its SSD sheet.

(G8.13) It requires one unit of energy to operate up to five of a given ship's transporters. If a ship has 6-10 transporters, two units of energy must be allocated if all are to be used. Each transporter can transport one boarding party. If using fractional accounting, each transporter requires 1/5 of an energy point.

(G8.14) The maximum range of transporters is five (5) hexes.

(G8.15) Transporters can never be used to beam enemy personnel or objects (including shuttle pilots, cloaking devices, etc.) without their permission (due to special security systems).

(G8.2) EFFECT OF SHIELDS ON TRANSPORTERS

(G8.21) Transporters will not function through shields, so a ship may have to drop one or more shields to use a transporter. Transporters work on a direct line from ship to ship. To determine which shield must be dropped or destroyed in order to use transporters, use the same rules as are used for direct-fire weapons, i.e., (D3.4).

(G8.22) Players may, at their option, voluntarily drop any specific shield to facilitate the use of transporters. A given shield can be dropped during any impulse, but it must remain dropped for one-quarter of a turn, even if this extends into the next turn.

(G8.23) General shield reinforcement (introduced in Scenario #10) will block the use of transporters, even through shields that are voluntarily dropped or destroyed by damage. If a player announces that he is trying to transport boarding parties onto an enemy ship, and the target ship still has general reinforcement shielding power available, then the attempt fails with no loss or damage to either side. However, as each transporter may only be used once in a given turn, no further attempt could be made with that specific transporter until the following turn. Note that reinforcement can be dropped, as shields can, under (G8.22).

(G8.24) In the event that the line of sight passes exactly through the junction of two shields, either may be dropped by the owning player to facilitate the use of transporters. If enemy boarding parties are trying to board such a ship, use the same procedures as determining the shield that would be hit, i.e., (D3.4).

(G13.0C) THE ROMULAN CLOAKING DEVICE (Cadet)

This is a simplified digest of the somewhat complicated cloaking rules. It will be adequate for all of the scenarios in Cadet Training Handbook.

(G13.1C) At the start of each turn, after the Energy Allocation Phase, the Romulan player announces if his ship is cloaked or uncloaked. If cloaked, use the special cloak counter to designate this fact. (It can be placed on the Romulan ship counter or beside it). If cloaked, the ship remains cloaked for the entire turn; if uncloaked, the ship remains uncloaked for the entire turn.

(G13.32C) If the Romulan player wants to cloak his War Eagle-class ship, he must pay six points of energy (per turn) to activate the device. A KR-class Cadet ship pays eight points of energy (per turn).

(G13.33C) If the Romulan ship is uncloaked, it operates normally. If it was cloaked during the previous turn, it cannot fire or launch weapons on the first impulse of the turn it is uncloaked.

(G13.34C) If the Romulan ship is cloaked, it cannot fire any weapons. If any direct-fire weapons are fired at it, take the actual range in hexes (true range), double it, and then add five. Use this range (i.e., the effective range) to determine the damage scored by the weapons. If any drones or plasma torpedoes (launched before or after the ship cloaked) targeted on the cloaked ship enter its hex, roll one die. If the result is 1-4, the seeking weapon misses and is removed from the game. If the result is 5-6, the weapon strikes normally but does only half the normal damage.
Note: See (E3.31) when firing disruptors at a cloaked ship.

(G13.0) CLOAKING DEVICES (Graduate Version)

On the standard War Eagle, the cost to operate the cloaking device (each turn) is six energy points. The cost for the KR is 20 energy points.
The Cadet cloak rules in Scenario #6 require a ship to remain cloaked (or uncloaked) for an entire turn. The Standard Rules used in Advanced Training allow a ship to cloak or uncloak during the turn. This reduces the amount of time that the ship is vulnerable to damage and reduces the predictability of when the ship will appear and fire.

CLOAKING DURING THE TURN
If the Romulan player pays the energy for the activation of the cloaking device at the start of a turn, he is not required to turn the device on at the start of the turn. He can activate it at any later point in the turn. To do this, he announces (in the Cloak/Uncloak Step) that he is cloaking. From that point and for the remainder of the turn, the ship is under all restrictions of cloaking. During the next four impulses (including the impulse on which the announcement was made), the cloaking ship fades out of view. The other (uncloaked) ships in the scenario retain their lock-on during this period, but one is added to the range for each impulse of fading out for purposes of direct-fire weapons. After the fade-out period, the ship is completely cloaked and the lock-ons are lost.

UNCLOAKING DURING THE TURN
If the Romulan ship begins the turn cloaked (having paid energy for the activation of the device), it can uncloak during the turn. This is accomplished as follows: In the Cloak/Uncloak Step of any impulse, the Romulan player can announce that his ship is uncloaking. He must then go through a four-impulse fade-in period (which includes the impulse of the announcement). During the fade-in period, the ship is under the same restrictions as when it was cloaked. The other ships on the board obtain a lock-on to the cloaked ship when the announcement is made. One is added to the range for each remaining impulse of fade-in (4 on the first, 3 on the second, 2 on the third, 1 on the last) for purposes of direct-fire weapons (instead of the 5 added when the ship is fully cloaked). No cloaked ship may fire any weapon while cloaked, cloaking, or uncloaking.

WHEN USING THESE RULES
Certain adjustments must be made in the Cadet cloaking rules from Scenario #6. If the ship was not cloaked on one turn, but the player wants to cloak on the next turn, he must pay for the energy during Energy Allocation, but then begins fading out on impulse #1. If the ship was cloaked on one turn, and did not pay the energy to remain cloaked on the next turn, the ship fades in during the first four impulses of that next turn.

(G23.0) EXPANDING SPHERE GENERATORS
Carried by most Lyran ships, the Expanding Sphere Gener ator (ESG) is used to protect the ship from drones and fighters entering the range of the sphere (or field). ESGs are often used to ram enemy ships (or activated in time to allow enemy units to ram the sphere), and harvest fighters like a scythe.

(G23.1) DEFINITION
(G23.11) SSD: Each box on the SSD labeled ESG represents one expanding sphere generator. Note that the term "ESG" is often used for the generator itself and the sphere or field (the terms are interchangeable) it generates.

(G23.12) MULTIPLE ESGs: Many Lyran ships carry more than one ESG. If so, they function independently of each other.

(G23.121) Multiple ESGs on the same ship may operate at the same time or alternate; they could be at the same or different radii. One could be activated while another was operating [or during its announcement phase (G23.31)]; if two or more were operating, one or more could be shut down.

(G23.122) In the event of multiple ESG fields of different radii, the field which a given object encounters first interacts with it first
(G23.51). If two fields are at the same radius, the one that has been active longer interacts first. If they were released at the same time, the owning player decides which will interact first. In any of these cases, the interactions of the first field must be completely resolved (i.e., the field must be reduced to zero or the targets encountered destroyed) before the interactions of the second field are resolved. There is no "gap" between the two ESGs (at the same radius). If two 20-point fields struck an object requiring 35 damage points to destroy, one field would be reduced to zero and the other to 5.

(G23.123) The specific ESG generator which is generating each specific ESG field can be detected and must be announced (at the same point the field itself is).

(G23.14) DESTRUCTION: ESGs are destroyed on "drone" hits. If the box on the SSD representing the ESG is destroyed (or if a ship with an active ESG field is destroyed), the field collapses immediately at the point in the Impulse Procedure that it was destroyed.

(G23.2) ENERGY ALLOCATION

(G23.21) ENERGY: Energy is allocated to ESGs during the Energy Allocation Phase. See (G23.223) for fractional points.

(G23.211) This energy can come from any source and can be accumulated over any number of turns during a scenario.

(G23.212) Reserve power (H7.2) can be added to the ESG generator; it cannot be added to an active ESG field to increase or restore its strength or to extend its active period.

(G23.22) POWER STORAGE: The more energy held in an ESG (up to a maximum of 5 points), the more powerful the field will be when the energy is released. Note: If using the Cadet cruiser no more than two points of energy can be allocated to the ESG.

(G23.221) Energy may be stored in the ESGs for up to 25 turns. If not used within this period, which does not count any turns before the scenario begins, the power is lost.

(G23.222) When a given generator is activated, all of the energy in it must be released.

(G23.223) Fractional points of energy can be stored in an ESG, but an ESG can only use whole units of power, the fractional points are lost when the ESG is activated (as "all power" in an ESG must be used).

(G23.23) INITIAL ENERGY: A ship entering a scenario in the Cadet Handbook has its ESGs fully charged, but may have varying amounts of energy in the main game.

(G23.3) ACTIVATION OF AN ESG
(G23.31) ANNOUNCEMENT: The energy stored in an ESG can be released on any impulse, but the intention to release one must be announced 4 impulses (1/8 turn, this would be 1 impulse on the 8 impulse chart, or 2 impulses on the 16 impulse chart) in advance during the Launch Seeking Weapons Step of the Impulse Procedure, and is a decision made after observing if any drones are being launched during the same step. See (G23.46). Deactivation of ESGs precedes activation in the Procedure.

(G23.311) The energy and radius are not announced until release, but must be recorded at the time of announcement and are revealed at the time of release (G23.46). The player must reveal the number of generators he plans to release when the 4-impulse notice is given. See (G23.312) for a partial exception.

(G23.312) An ESG cannot be released without the required prior announcement, even at the start of a turn. If release at the start of a turn is desired, the owning player would have to announce the release during the previous turn (without knowing if he will have sufficient energy available, in which case the announcement could be canceled) or announce the release at the start of the turn and delay it the required four impulses. If an announcement is made in the last four impulses of the turn (for a release during the first four impulses of the next turn), the strength and radius need not be decided or recorded until the Energy Allocation Phase.

(G23.313) No prior announcement period is required to drop an active ESG, but it cannot be voluntarily dropped (G23.47), except in the Launch Seeking Weapons Step of the Impulse Procedure. The fact that it has been dropped must be announced at that point.

(G23.32) CYCLE OF AN ESG FIELD: An ESG field will only remain active for 32 impulses (16 impulses or 8 Impulses if using those impulse charts) and will automatically deactivate itself during the Launch Seeking Weapons Step of the 32nd subsequent impulse. Written records of the impulse any given field was released and dropped must be kept. The fact that the ESG has reached the end of its active cycle is detectable to all players; no formal notice is required.

(G23.321) A field can be voluntarily deactivated in fewer impulses (G23.47). See (G23.313) for the announcement.

(G23.322) A field reduced to zero strength is dropped at the point when the last strength point was expended (G23.51).

(G23.323) A field cannot be reactivated within 32 impulses (16 or 8 impulses if using the cadet ship) of when it was dropped nor can it be reactivated before the start of the second subsequent turn from the point it was activated. This delay is to the next activation, not to the next announcement. For example, an ESG activated on impulse 10 of turn 2 (announced on impulse 6) and dropped before the end of turn 2 cannot be activated again before impulse 1 of turn 4 (announced impulse 29 of turn 3); if dropped during turn 3, it could be activated 32 impulses later.

(G23.33)CANCELLATION OF ANNOUNCEMENT: A player can announce an intention to release an ESG field and later (publicly) cancel that announcement (before the impulse when the field was to have been released) in the Launch Seeking Weapons Step. If an announcement is canceled, another announcement cannot be made within 1/4 turn (8 impulses, 4 impulses on the 16 impulse chart, 2 impulses on the 8 impulse chart) of the cancellation. Since the ESG is not released when its announcement is canceled, the penalties of (G23.32) do not apply, only the delay imposed by this rule applies.

(G23.4) OPERATIONS

(G23.41) RADIUS: When formed, the expanding sphere field may be set at a radius of 0, 1, 2, or 3 as prescribed by the owning player's records (G23.311). The larger a sphere, the weaker it is.

(G23.42) STRENGTH: To determine the sphere's strength, take the radius and use it to find the Strength Factor on the following chart:

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Energy Sphere Generator Table (ESG)	Energy Used		
Radius	1	2	3
0	4	8	12
1	4	7	11
2	3	7	10
3	3	6	9

Multiply this strength factor by the number of energy points held in the ESG when released. Round fractions of 0.50 and more up and those of 0.49 and less down. This final result is the strength of the field and is shown in the columns to the right of the Strength Factor (i.e., the calculations have been done for you, but the procedure is shown to improve understanding of the system). For example, radius 2, strength factor 3.33, 2 energy points yields a 7-point field.

(G23.43) TIME OF RELEASE: The energy used is not announced until the time of release. When released, an ESG does not interact with or damage anything at the instant of release; see (G23.56).

(G23.44) FORMING: When released, the sphere (field) forms at the specified radius. It does not expand to that radius damaging units at shorter distances.

(G23.45) MOVES WITH SHIP: The sphere moves with the ship; it does not remain stationary.

G23.46) KNOWN INFORMATION: The size and strength of the sphere can be detected and must be announced.

(G23.47) VOLUNTARY DEACTIVATION: The owning player can voluntarily deactivate (drop) an operating ESG field in the Launch Seeking Weapons Step of the Impulse Procedure (G23.321), and doing so establishes the point at which it can be reactivated (G23.323). If voluntarily deactivated, the ESG field ceases to function immediately at that point. An active ESG can be deactivated but cannot be voluntarily reduced in strength. See (G23.313) for required announcements.

(G23.5) COMBAT EFFECT

(G23.51) DAMAGE: When operating, the field will automatically score damage points on any ship, shuttle, fighter, monster, drone, or other object specified in the rules entering the field. A unit can enter an ESG field as a result of the unit's own movement, the movement of the ship generating the field (G23.45), or both. See (G23.6) for some other effects.

(G23.511) The field will score damage points up to the number required to destroy the object, or up to the strength of the field, whichever is lower. Each damage point scored reduces the strength of the field by one point. EXAMPLE: The field strength is 5. If a drone that is destroyed by 4 damage points contacts the field, the field strength will be reduced to 1 point and the drone will be destroyed. If a shuttle that is destroyed by 6 damage points contacted the 5-point field, the field would be reduced to zero (thereby deactivating it) and the shuttle would receive 5 of the 6 damage points required to destroy it.

(G23.512) The damage caused by the ESG fields is scored during the Move Ships Segment as a separate volley. Two or more ESG fields at the same radius or different radii generated by the same ship count as a single volley (G23.75). If ESG fields generated by different ships strike a single object in the same impulse, they are counted as separate volleys, although it would take VERY arcane circumstances for this to happen because of the priorities of (G23.52). Players are welcome to try and determine just what these circumstances are.

(G23.513) ESGs do not negate shields or armor. Damage from an ESG is scored on the target's shield which is facing the ship generating that ESG. This is judged by the same procedures as direct-fire weapons (D3.4), unless the line of fire falls exactly along a shield boundary, in which case score the damage on the shield which was facing the ESG hex which the other ship entered (or the ESG hex which entered the same hex as the other ship). If the ESG ship and the other ship move on the same impulse, judge the situation by whichever ship moved first. If both move at exactly the same time [all tie-breakers in (C1.3) being exhausted], the ESG interaction is judged as if the other ship had moved first.

(G23.5131) Exception: If the "other" ship is inside the ESG and moving out of it (or the ESG is dragged over it), the shield struck would be the one opposite the one facing the ship generating the ESG.

(G23.5132) Exception: If the units are tractored, and the line of fire is on a shield boundary, damage from an ESG is scored on the target's shield which is facing the ship generating the ESG. In the Cadet Handbook this will only affect freighters.

(G23.514) ESG impact is determined during movement but resolved after tactical maneuvers, allowing a ship (qualified to Tac) to turn a different shield toward the oncoming ESG after knowing that the ship will be hit.

(G23.515) ESGs cannot damage units (boarding parties, shuttles) on planets. See (G23.653).

(G23.52) MULTIPLE TARGETS: If two or more objects enter the field simultaneously, damage is caused to (and by) the ESG field in the following priority:

1. Units which move completely through (G23.571) the field (unless both are generating an ESG, in which case priority two is resolved first). (Example: The field is in hex 0404, the generating ship in 0401, and a drone targeted on the ship in 0405. Both the ship and the drone move in this impulse, so the drone would move to 0404 and the field to 0405, effectively passing each other, although since either the drone or the field will not survive the encounter, this is only a temporary convenience to keep track of the counter locations.) If there are several such units, these are damaged in the order given in steps 2-5 below.
2. Other ESG fields (G23.73).
3. Planets and other solid objects (G23.65).
4 Active Mines.
5. Other units in order of size from the smallest to the largest, with each such unit receiving one point in turn. The field will score one point on each (beginning with the smallest; roll a die to resolve ties) and will repeat this procedure until field strength is reduced to zero or all objects are destroyed.

EXAMPLE: A drone, a shuttle, and a ship all strike an ESG with a strength of five at the same time. Two points would damage the drone, two the shuttle, and one the ship based on their size.

(G23.53) DAMAGE ANY TARGET: The field will damage any qualified target, including Lyran ships, and even shuttles or seeking weapons launched by the ship generating the sphere.

(G23.54) HOLLOW: Note in the illustrations below that the sphere is hollow and will not damage targets inside of its lethal radius. For play purposes, the ESG field consists of the entire hexes at the specified radius, not the inner or outer edges of such hexes. For partial exceptions to this rule, see (G23.562), (G23.573), and (G23.72). Thus, a ship wishing to launch a shuttle could generate a field of radius 3 on one turn, launch a shuttle and move it two hexes away from the ship, then generate a field of radius-1 with a different generator on a later impulse.

(G23.55) RADIUS ZERO: If the sphere is set at a radius of "0" and drones targeted on a unit inside the field enter that hex, they will strike the field before their target. See also (G23.72).

(G23.56) TIME OF FORMATION: If the ship generating the ESG does not have one active, but generates a sphere at a specified radius, any objects at that radius are not damaged.

(G23.561) Merely being in a sphere hex cannot result in damage; only entering such a hex can cause damage. Moving parallel to and at the same speed as the generating ship is still considered to be movement for purposes of ESGs and results in damage; see (G23.573).

(G23.562) At the time of formation, all units in the same hex as a forming ESG are considered to be "outside" the ESG for purposes of moving toward or away from the generating ship. If such units move toward the generating ship (or vice versa), they are treated as "jumping" (G23.571) the ESG. If they move away from the generating ship (or vice versa), they take no damage. If they move into another hex of the same ESG field, they take damage as per (G23.561). There is a partial exception in (G23.72).

(G23.57) MOVEMENT OF GENERATING SHIP: Movement of the ship (that is generating the ESG) in such a way as to cause the ESG field to contact another unit has the same effect as the movement of that unit (i.e., the unit is damaged).

(G23.571) Note that it is possible for the target unit and the ship generating the ESG to move (toward each other) on the same impulse. In this case, the damage is still resolved normally (the target cannot "jump" across the field unharmed), but the Impulse procedure must be interrupted. Use (C1.3) to determine which unit moves first, move that unit, determine the ESG damage (including all units damaged) immediately, then move the other units and continue the normal Impulse Procedure.

EXAMPLE: A Lyran CA is in hex 1010 heading A and projecting an ESG into hex 1007 (among others), while a Klingon D7 is in 1006 heading D. Both ships are scheduled to moved straight ahead, resulting in the D7 being in 1007, the CA in 1009, and the ESG in 1006. It could be argued that the D7 and ESG "passed" and there was no contact, but this is obviously illogical and the situation is resolved by the above rule. The same situation can occur when units are moving apart, in which case it is resolved the same way.

(G23.572) Note also that, if the ESG ship is moving in the same impulse as its target, but is moved first in that impulse by (C1.3), and the subsequent (but same impulse) movement of the target again moves it clear of the field (but not across it), no contact with the field actually took place.

EXAMPLE: In the above case, had the Klingon D7 been moving in direction A, the Lyran CA would have moved first by (C1.3) and would have moved its ESG into 1006, but the D7 moves to 1005, avoiding it, even though the apparent non-simultaneity of the actual movement of the counters would seem to indicate otherwise.

(G23.573) If the generating ship and a potential target which is in an ESG hex are moving parallel and at the same time, the potential target does take damage as if it had entered an ESG hex.

(G23.5731) This is true even if the two units are linked by tractor beam from the generating ship, unless the ship generating the ESG and tractor voluntarily decides to treatthe matter under (G23.5732).

(G23.574) Turns (without changing hexes) by the generating ship do not damage units in ESG hexes. Turns (without changing hexes) by units in ESG hexes do not result in damage to those units. (The ESG field itself does not "rotate", so it cannot damage enemy units in ESG hexes like a "disk sander.")

(G23.6) OTHER EFFECTS OF AN ESG FIELD

(G23.62) CLOAKS: Cloaking devices and ESGs have significant interactions. Note that no ship in the Cadet Training Handbook has both a cloaking device and an ESG.

(G23.621) Cloaked ships are affected by the sphere as if they were not cloaked. If a cloaked ship is damaged by an ESG, it can be locked-onto during the impulse the damage is taken.

(G23.622) A cloaked ship cannot operate an ESG while the cloaking device is operating, or until fade-in is complete, or after fade-out begins. If the ship is cloaked (or fading), it cannot activate an ESG, i.e., begin the activation phase by announcing activation, until fade-in is complete. If a ship with an active ESG
starts to cloak, the ESG must be dropped before the cloaking device can be activated. This can be done at the time that the cloak is activated, outside the normal Sequence of Play.

(G23.63) EXPLOSIONS: Destruction (explosion) blast effects ignore ESGs.

(G23.64) TRANSPORTERS: Transporters (G8.0) can operate through ESG fields and are not affected by them in any way.

(G23.65) TERRAIN generally overwhelms an ESG and causes it to collapse. Should an ESG field strike a planet, the field is reduced to zero and no damage is caused to the planet or to anything on it (the effect is spread over too wide an area).

(G23.66) TRACTORS: Tractors (G7.0) can operate through ESG fields and are not affected by them in any way. See also (G23.573).

(G23.7) CONDITIONS AND RESTRICTIONS

(G23.71) MULTIPLE ESG OVERLAP: The spheres created by ESGs on two different ships cannot overlap [this would result in damage under (G23.73)] or be contained within each other.

(G23.711) It is the release of an ESG, not its announcement, which causes this interaction. However, as deactivation precedes activation in the Sequence of Play (G23.31), with careful timing two ESG-equipped ships could keep a continuous screen of ESGs around themselves, barring a field being deactivated by damage before a second field can become active.

(G23.712) If two ESGs are activated in violation of (G23.71), whichever ESG was activated second would collapse, the sphere never forming and the energy being lost. If two ships both activated ESG fields simultaneously, both fields would fail and the power would be lost.

(G23.713) Two ships or more in the same hex could not use ESGs simultaneously. If the fields were at different radii, the above rule would apply; if they were at the same radii, they would immediately damage each other (G23.73). They would damage each other even at zero radius (G23.73).

(G23.72) ZERO-RADIUS: When creating a zero-radius field, the Lyran player designates which friendly units are inside of it. All other units are considered to be outside of the field. Items outside of the field are not damaged when the ESG-generating ship leaves the hex, or when those objects themselves leave the hex.

(G23.721) Other units entering that ship's hex will strike the field; units inside the field which leave that ship's hex will also strike the field (from the inside).

(G23.722) If there are two fields of zero radius generated by the same ship, both are identical in regards to units inside and outside of the field.

(G23.723) Units inside the field are not affected as per (G23.573); units outside the field are affected by (G23.573).

(G23.73) ESG vs. ESG: Two ESG fields (generated by different ships) that strike each other (occupy the same hex) will damage each other (G23.52). Two ships operating zero-radius ESGs in the same hex will interact and the ESGs will damage each other, even if both sides designated (G23.72) that the other was outside of their field.

(G23.75) DOUBLE RAM: It is theoretically possible that, if a ship had two ESGs active at different radii, a single target (on a closing course) could strike both of them, the first as a "jumper" in step 1 and the second under step 5 of (G23.52). In this case, the two "volleys" of damage are combined into a single volley.

(G23.8) EFFECT ON OTHER WEAPONS

(G23.81) PLASMA plasma torpedoes.
WEAPONS: The sphere has no effect on (G23.83) DIRECT-FIRE WEAPONS: The ESG sphere does not affect any direct-fire weapons in the Cadet Training
Handbook.

(G23.86) PROBES: A probe launched for information cannot pass through or damage an ESG field (G5.23); it would be destroyed without gaining any information if this was attempted. A probe which did not penetrate an ESG field could gather information on objects behind it. An armed probe (fired as a weapon) can pass through an ESG field (G5.37).

(H6.0) PHASER CAPACITORS

All ships have a phaser capacitor. This is a special storage battery that is equal in capacity to the total amount of power required to fire each of the ship's phasers one time. For example, the Federation Cadet cruiser, with three phaser-1s, has a phaser capacitor rating of 3.

(H6.1) Energy can be held in the phaser capacitor from one turn to the next and can be withdrawn during any impulse to fire the ship's phasers. It can never be withdrawn for any other purpose. This energy can be withdrawn for any phaser. It could be used over a period of three turns to fire the same phaser three times.

(H6.2) Energy can be added to the phaser capacitor during the Energy Allocation Phase, but note that the total energy in the capacitor cannot exceed the capacity of that capacitor.

(H6.3) If a phaser is destroyed, an equivalent portion of the phaser capacitor is also destroyed. Naturally, players may consider the uncharged elements to be destroyed first.
EXAMPLE: The Federation Cadet cruiser has a capacitor of 3. The player allocates three units of power tothe capacitor at the start of the first turn. During that turn, two phasers are fired, so there is still one unit of power in the capacitors. On turn 2, only two units can be added to the capacitor as it can only hold three and already has one. During turn 2, only one phaser is fired. On turn 3, the player allocates no energy to the phasers, but could still fire two of them because there are two points remaining in the capacitors. If a phaser is destroyed, the empty capacitor is destroyed with it.

(H7.0) RESERVE POWER

Ships may use their batteries as a source of reserve power.

(H7.1) OPERATIONS

A battery may be discharged at any time, even during the middle of a turn, at the option of the owning player. Such discharges may be, but aren't required to be, planned on the Energy Allocation Form. Note, however, that if reserve power is used to activate some system during the turn (say, reinforced shielding), this takes effect from that point until the end of the turn. It is not retroactive to the beginning of the turn, nor does it carry over into the next turn. This is the penalty for the flexibility gained.

(H7.2) USE OF RESERVE POWER

Power from batteries may be used to reinforce a specific shield, to operate transporters or tractors, or to fire weapons (those that do not require more than one turn of arming). Reserve power may be used to reinforce a specific shield after enemy weapons have resolved their fire against that shield but before that shield is damaged by the volley in question. Reserve power can be used to complete the arming of a plasma torpedo which is using rolling delay. For example, if a Gorn cruiser had powered a torpedo with 2+2+2, two points of reserve power would complete the third turn of arming and allow the torpedo to be launched.

(H7.3) RESTRICTIONS
Even with reserve power, a given system cannot be operated more often than the rules allow. E.g., a phaser can only fire once per turn. It can fire with power from reserve power or from the capacitor. But NOT with power from capacitors the first time and batteries the second time (or vice versa).
EXAMPLE: A Federation CA has all four batteries remaining, and each is holding one unit of power. During the turn, an unexpected opportunity to fire two phasers at an enemy ship is presented. Power had not been allocated for this, but the Federation player can draw it (two units) from two of the batteries. This requires an adjustment of the battery records because it was not originally allocated on the Energy Form. Later in the same turn, the enemy ship fires on the cruiser, delivering four points of damage to the #1 shield. This shield had been reinforced specifically with two units of power. This negates two of the four damage points. Rather than accept the other two points of damage onto the front shield, the Federation player elects to discharge his reserve power (the two remaining points in the batteries) into the front shield as specific reinforcement, canceling the other two points of damage. Thus, none of the damage is permanent.

(H7.4) RESERVE WARP POWER
This technique is not used in Cadet Training Handbook.

(J1.0) GENERAL SHUTTLECRAFT RULES
Shuttlecraft are not ships, but a separate type of unit. They operate within a different set of rules, which are presented here. Shuttlecraft are small (10 meters long) spaceships carried inside the larger starships. Their primary purpose is administrative: carrying personnel, supplies, equipment, mail, etc. from the ship to other ships or the surface of planets. In combat situations these craft are often used for many other purposes.
In Basic Set you will encounter several types of shuttlecraft (including fighters); in Cadet Training Handbook only the common administrative shuttle is used here. The term shuttle in Cadet Training Module refers to these craft.

(J1.1) ENERGY
Shuttles do not fill out an Energy Allocation Form. Their engine provides energy to move and fire their phaser.

(J1.2) MOVEMENT
The movement rules for shuttles are considerably simpler than those for ships.

(J1.21) SPEED
Administrative shuttles have a maximum speed of six hexes per turn. They may move at any speed up to this maximum, but must announce their speed at the start of each turn and remain at this speed for the entire turn. If no speed is announced, the maximum speed is assumed.

(J1.22) ACCELERATION
A shuttle may accelerate (from its speed on the previous turn) by up to one-half of its maximum movement (round up) at the start of a given turn (up to its maximum speed). It may be launched at its maximum speed. It may decelerate by any amount.

(J1.23) TURN MODE
All administrative shuttles have a turn mode of 1 at all speeds. Note that while a shuttle can be launched in any direction, it must move one hex directly forward before it has satisfied its turn mode.

(J1.3) COMBAT

(J1.31) Administrative shuttles have a single phaser-3 that can be fired in any direction.

(J1.32) Shuttles can be fired at by any weapons. As they do not have SSD sheets, however, damage is not distributed or allocated, but simply recorded for each shuttle. Administrative shuttles are destroyed when they receive six damage points. The Commander's SSD sheets include check-off tracks for each shuttle carried by the ship. When six or more points of damage are scored on a given shuttle, that shuttle is destroyed and removed from the game.

(J1.33) A shuttle is considered crippled when the number of damage points scored on it equals four (or more) points. When an administrative shuttle is crippled, its maximum speed is reduced to three hexes per turn, but there is no other effect. If the shuttle was moving faster than a speed of 3, it immediately slows to that speed.

(J1.34) A shuttle can be fired at (with direct-fire weapons) on the impulse it is launched.

(J1.35) For purposes of Cadet Training Handbook, shuttlecraft cannot be fired at with direct-fire weapons from a range of more than five hexes.

(J1.4) RECORD KEEPING
Each SHTL box on the SSD represents one administrative shuttle. When a shuttle is launched, the corresponding box on the SSD is marked with an L (or any other convenient mark), indicating that the shuttle has been launched. The number of undestroyed boxes on a SSD will indicate the carrying capacity of the ship, while the number of boxes without these marks will indicate the number of shuttles still on board the ship. When a shuttle hit is scored, the owning player may score it against a shuttle box that contains a shuttle (destroying the shuttle and the capacity to operate it) or one that does not currently contain a shuttle destroying its capacity to operate one, at his option.

(J1.5) LAUNCHING SHUTTLES
A given ship may not launch or recover more than one shuttle per bay during any two consecutive impulses. Note that a ship can launch OR recover a shuttle; it cannot do both at the same time. Shuttles can be launched facing in any direction.

(J1.6) RECOVERING SHUTTLES
Shuttles can be recovered (that is, taken aboard a ship) either by being hauled aboard by a tractor beam or by landing on the flight deck under their own power.

(J1.61) LANDING ABOARD
A shuttle may only land aboard a ship under its own power if both the ship and the shuttle are in the same hex and the ship is moving at the maximum speed of the shuttle or less. Note that this procedure is used to land aboard friendly ships; it cannot be used to land on enemy ships in Cadet Training Handbook. Only manned shuttles (those with a crew on board) can land aboard by this procedure. Suicide shuttles (below) cannot land by this (or any) method. A shuttle cannot land unless there is an empty shuttle box in the bay.

(J1.62) LANDING VIA TRACTOR BEAM
A ship can recover a friendly shuttle using a tractor beam, regardless of the relative speeds of the ship and shuttle, if all of the following conditions are met:
1. The ship has a working tractor beam, power has been supplied to that tractor beam, and the tractor beam is not being used for any other purpose during that turn.
2. The ship is not moving at more than twice the maximum speed of the shuttle.
3. The ship has an empty shuttle box in one of its bays.

(J1.621) PROCEDURE
The tractor can be attached to the shuttle at a range of one hex. At the instant the tractor is attached, the shuttle's engines are shut down and the ship controls the shuttle. The shuttle (now held in the tractor beam) moves in the same direction and speed as the ship (paralleling its course) and can be pulled into the hex with the ship (by the tractor beam) on the next impulse during the Recover Shuttlecraft Step. At that point, it is assumed to be landed on the ship.

(J1.63C) SHUTTLES LANDING ON ENEMY SHIPS
This cannot happen in Cadet Training Handbook. The somewhat complex rules to resolve this situation are included in BasicSet.

(J2.0) ADMINISTRATIVE SHUTTLES
Almost all starships in the game have boxes on their SSD sheets marked shuttle. Each holds one administrative shuttle.

(J2.1) GENERAL
All administrative shuttles are identical, regardless of the race using them. (This is a generalization for the purpose of simplicity, but within the game the various types of administrative shuttles are operationally identical.) All administrative shuttles have a maximum speed of six hexes per turn, have a turn mode of 1, are armed with a single phaser-3, and are destroyed by the sixth damage point scored against them.

(J2.2) MISSIONS
Administrative shuttles may be used for several missions.

(J2.21) STANDARD administrative shuttles may be used for transport, reconnaissance, and combat duties.

(J2.211) An administrative shuttle, in its standard configuration, can carry one crew unit or two boarding parties (a total of about10 people).

(J2.212) In the monster scenario (#11), an administrative shuttle could be used to gain information about the monster. Each administrative shuttle on the map counts as one lab box, but at the range of the shuttle craft, not the range of the ship.

(J2.213) Administrative shuttles carry a phaser-3 (360degrees firing arc) and can be used to provide additional protection from seeking weapons or enemy shuttlecraft. In a close-range ship-to-ship duel, however, they cannot be expected to survive for long. They can fire their phaser once per turn but not within 1/4-turn of when it was fired on the previous turn. They cannot fire their phaser within 1/4-turn of being launched. See also (J1.31)

(J2.22) SUICIDE SHUTTLES(SS)
For this use the shuttle is unarmed and unmanned. It is loaded with a high yield anti-matter bomb, which has a force of up to 18 damage points. It is otherwise considered to be a seeking weapon (a drone) and moves by (F2.0). It has unlimited endurance. A suicide shuttle can be targeted on an enemy ship, shuttlecraft, or drone. It cannot be targeted on a plasma torpedo. CADET SS cost 1 to arm over 3 turns, and does 6 damage, and costs 1 to hold.

(J2.221) In order to launch a suicide shuttle, the launching ship must expend 1-3 energy points per turn for three turns. The third turn can be the turn of launching. If not launched on the third turn, it costs one point of energy per turn to keep it on board. If this energy is not paid, the suicide bomb is deactivated but the shuttle cannot be used on that turn. The energy to arm a suicide shuttle must come from warp engines. The energy to hold it on board can come from any source. The explosion strength of the suicide shuttle is equal to twice the amount of energy put in it.

(J2.222) The fact that an administrative shuttle is armed as a suicide shuttle is not revealed until it reaches the target. While the opposing player might suspect this status because the shuttle moves toward his ship and never fires its phaser, a manned shuttle could be doing this for purposes of deception.

(J4.0) FIGHTERS
Certain advanced shuttlecraft are used as "fighters" within the game universe. The Cadet Training Handbook presents only one fighter, the Hydran Stinger-F. All "fighters" are "shuttles," but not all "shuttles" are "fighters." Note that the authors were VERY careful to define "fighter" and "shuttle" in each case. If a rule refers to "fighters" it does not apply to non-fighter shuttles.

(J4.1) MOVEMENT Fighters have certain advantages in movement over non-fighter shuttles. They otherwise operate as normal shuttles except as provided in this rules section.

(J4.11) TACTICAL MANEUVERS: All fighters may make tactical maneuvers (C5.2). This is done at speed zero (as with ships). The fighter can make a tactical maneuver whenever its movement is called for [based on the maximum current speed of the fighter (as adjusted for crippled status) even though the fighter is not actually moving], but no more often than once in every four impulses. This forms several exceptions to the procedures for ships. Non-fighter shuttles cannot make tactical maneuvers.

(J4.12) ADDITIONAL MOVEMENT RULES: Stinger fighters have a maximum speed of 15 hexes a turn and a turnmode of 2 at speeds of 12 or higher. Stinger fighters are considered to be crippled if they have taken seven or more points of damage, and have their maximum speed reduced to 8 hexes per turn. Fighters move in the Move Ships part of the Impulse Procedure, but ALWAYS move after all ships have moved irrespective of speeds, and BEFORE seeking weapons move.

(J4.3) FIGHTER LAUNCH RESTRICTIONS AND LANDING CONDITIONS

(J4.32) DIRECT-FIRE WEAPONS: Fighters may not fire their phasers until eight impulses after they have been launched. Fighters may only fire their phasers at targets in their FA arc. If a fighter has taken seven or more points of damage, it is considered to be crippled and its phaser-G will only be able to fire one phaser-3 shot each turn until it is repaired.

(J4.34) LAUNCHING AND LANDING: Hydran ships are equipped with "Launch Tubes", shown as solid triangles on their SSDs associated with the shuttle bays. One fighter may be launched per launch tube per impulse subject to the number of fighters and the number of launch tubes, this is in addition to any shuttle (or fighter) which launches from a given shuttle bay's normal launch/land hatch. These tubes cannot be used by normal shuttles. Fighters land by the same procedures as shuttles in (J1.6). The Hydran Ranger has three shuttle bays, two of which only have fighters. In the Cadet Training Handbook, fighters cannot land on planets or in the shuttle bay of an opposing, or a friendly non-Hydran, ship.

(J4.4) ADDITIONAL RULES ON FIGHTERS

(J4.41) INELIGIBLE MISSIONS: Fighters may not be used for suicide missions (J2.22), scientific research (J2.212), and cannot transport crew units or boarding parties.

(J4.42) BOARDING: Fighters may not be boarded by boarding parties (D7.0).

(J4.44) PHASERS: Fighters can fire their phasers each turn (gatling phasers, of course, fire four times per turn). The energy to rearm the phaser is drawn from the fighter's engine each turn with no reduction in the fighter's speed (or any increase if there is no reason to recharge the phaser).

(J4.47) TARGETING: As with shuttles, fighters cannot be targeted outside of five hexes range. Fighters are small and very erratic targets. All fire directed at them, even if by another fighter, is affected by a modifier of plus 1 to the die roll, e.g., if a disruptor was fired at a fighter at range three, and the die roll was 4 (a hit), the plus one modifier would change this to a 5 (a miss). If the die roll is a six, the result is shift to the six of the next larger range bracket, e.g., a die roll of six at range 3 for a phaser-1 would normally be three damage points, but the plus one changes the result to a die roll of six at range four, resulting in only two damage points. Plasma torpedoes are not affected by the plus 1 modifier, but drones are. When ever a drone "hits" a fighter, roll one die. If the result of the die roll is a six, the drone scores only half of its damage on the fighter, i.e., 6 points instead of 12.

(J4.48) REPAIRS: Fighters that are on their mother ship at the start of a turn may be declared to be undergoing "repairs". If the fighter does not launch from the mother ship for that entire turn, one point of damage on that fighter can be repaired. If a fighter that was crippled is repaired to a point where it has less than seven damage points marked off, it is no longer crippled, but would still be damaged. A fighter with nine damage points scored on it could be fully repaired at the end of nine turns.

(J4.49) DESTRUCTION: Fighters are destroyed, with no chance of recovery or repair, if they ever accumulate ten damage points before any repairs are applied.

(J4.5) CLOSE COMBAT MANEUVERING

(J4.51) AGAINST SHUTTLES: Fighters may always fire at any other shuttle that is in the same hex as they are regardless of relative facing. This reflects "close combat maneuvering." (This assumes that the fighter is otherwise able to fire.) This rule is used only against shuttles.

(J4.52) AGAINST SHIPS: A fighter may use "close combat maneuvering" in a hex to position itself to fire upon an enemy ship from an advantageous position.

(J4.521) To use CCM against a ship, the fighter must already be in the same hex as the ship as a result of movement on previous impulses. CCM cannot be used if the ship entered the hex on the current impulse. Because of the Sequence of Play, CCM cannot be used if the fighter entered the hex on the current impulse (as its movement would already be complete).

(J4.522) The fighter announces that it is using CCM; it does not leave the hex even if scheduled to move. The fighter is then turned to a new facing and is deemed to have moved around the ship and turned to position the ship on its forward centerline, usually facing a down or weak shield on the target ship. The fighter is then facing that shield and is in the corresponding weapon arcs of the target. A fighter using CCM is maneuvering so violently through the hex that any ship in the hex can fire any weapon at the fighter regardless of firing arcs.

(J4.523) EXAMPLE: A fighter is in the same hex as a Klingon D6 at the start of the impulse. The D6 is facing in direction A. Based on (D3.42), the fighter is facing the #1 shield of the D6. The #3 shield of the D6 is down from a previous attack, and the fighter wishes to engage this shield. The fighter announces CCM to face in direction F. It is now facing the D6's #3 shield, and the fighter is in the R and RR firing arcs of the D6, and could be fired on by any direct-fire weapon possessed by any other ship in the same hex.

(P0.0) TERRAIN

(P2.0) PLANETS
Ships cannot enter or fire weapons into or through a planet hex. Shuttlecraft can enter a planet hex. The owning player can declare them to have landed; shuttles on a planet cannot be hit by any weapons. A line of fire exactly along the edge of a planet hex is not blocked. Seeking weapons and ships which enter the planet hex crash into the surface and are destroyed.

(P3.0C) ASTEROIDS (cadet game)

For every asteroid hex entered (or dragged into with a tractor beam) by a starship, drone, plasma torpedo, or shuttle, a die must be rolled to see if a collision has taken place and how much damage is applied to the #1 shield (or the #4 shield if the ship was moving in reverse). Exiting an asteroid hex causes no damage, but if the next hex entered contains asteroids, then roll again.

Asteroid damage table

DIE ROLL	SPEED			
	1-6	7-14	15-25	26+
1	0	0	0	0
2	0	0	0	5
3	0	0	3	10
4	0	2	6	15
5	0	6	10	20
6	0	10	15	30

If a cloaked ship takes asteroid damage, it loses (for the next impulse) all benefits of being cloaked, but is still under all restrictions of being cloaked. When firing a direct-fire weapon through one, two, or three asteroid hexes (including the hex of the firing unit and target, unless they are the same, in which case, count only one), add one to the die roll. Add two to the die roll for four or more hexes of asteroids. If a Tholian web or web trap is in an asteroid hex, all units still roll for asteroid damage as if the web were not there.