

# STARFLEET ORION

FOR TRS-80 (LEVEL II)  
WITH 16K RAM

#### Warranty Disclaimer on Software

STARFLEET ORION has been extensively checked and tested. Although we are confident that there are no significant bugs in the programs supplied with this game, Automated Simulations makes no warranty, express or implied, concerning the software. However, should you encounter something that appears to be a bug, we will attempt to supply a program fix. Send us a letter describing the exact symptoms and include a stamped, self-addressed envelope.

# Ship Control Pad

MISSILES

MISSILES 


 TORPEDOES 


[illegible][illegible][illegible]

# Rules of Play

## 1.0 Introduction

Welcome aboard the STARFLEET. STARFLEET ORION is more than a unique space battle game designed to challenge your tactical skill and imagination; it is, in fact, a multitude of games that should provide you and your friends with years of enjoyment. In addition to the Space Battle program itself, the cassette supplied with the game also includes a second, separate program that allows you to set up any of the twelve scenarios described in the Battle Manual or to create entirely new ones based on your favorite science-fiction novels, movies, or your own vision of the history of the future.

In use, both programs are largely self-explanatory, but detailed instructions have been included to prevent possible misunderstandings. Conversely, portions of the rules may be clearer when the relevant part of the program is displayed on the computer screen. Following the rules in this booklet is a listing of the two programs (in case something happens to the preprogrammed cassette). The Battle Manual contains all the information necessary to recreate a dozen different game scenarios, certain mathematical details left out of the basic rules, a listing of the standard starship types used in STARFLEET ORION, further tips on play, and advice on constructing your own scenarios. A pad of Ship Control Sheets allows you to keep a record of the turn-by-turn damage to your ships and to plan your moves while you are away from the computer (while your opponent is entering his orders). Except for additional cassettes to store recorded scenario data (not required for your first game but recommended for future use) and a pen or pencil (if you plan to use the Ship Control Sheets) -- and a TRS-80 microcomputer with 16K RAM -- this package contains everything you need to play STARFLEET ORION.

Although the twelve scenarios we have included are designed primarily for two players, most can be played by two *teams* of one or more persons, and when you have gained some experience with the game, you can create situations allowing a free-for-all among three or four players.

To allow you to get into play as quickly as possible, a scenario designed to introduce you to STARFLEET ORION has been programmed onto the enclosed cassette. For your first game (and any other time you wish to play the Introductory scenario), simply insert the cassette into the computer and read Section 2.0 of these rules. (*You need read Section 3.0, Scenario Building, only when you are ready to try any of the additional scenarios.*)

## 2.0 Playing the Game (The Space Battle Program)

**Preparation:** With the program cassette in the computer, Press PLAY on the tape controls. Type CLOAD"O" and carriage return. (Remember to put the quotation marks around O.) After a few minutes, the computer will announce that it is READY. (If you are *not* playing the Introductory scenario, and you are using separate cassettes for the program and data tapes, push STOP on the tape controls and then REWIND. Remove the program tape and insert the data tape containing the scenario you wish to play).

Type RUN and carriage return. When the computer asks you for the scenario you want to play, type the name without quotes and carriage return; if this is your first game, or if you simply wish to try the Introductory scenario again, type INTRORETURN (again, that's a carriage return at the end).

After the ships appear on the screen, rewind and remove the cassette.

You are now ready to play STARFLEET ORION.

**2.1 Basic Description:** STARFLEET ORION is a hypothetical simulation of the various kinds of conflicts that might arise between starships of opposing powers sometime in the far future. The playing surface, represented on the computer screen, is an invisible matrix 36 spaces high and 64 spaces wide. All calculations of distance (for movement of ships, firing of missiles, beam effectiveness, etc.) are based on this "grid." Ships which move out of this area become, henceforth, out of play for the rest of the game; they are considered to have evaded pursuit, escaped detection, reached safety, whatever. The third dimension is present only to the degree that any number of ships may occupy the same space without crashing or causing other mishaps.

The output of each ship's power plant is rated in Energy points; these constitute the ship's energy "income" for each turn. The strengths and capabilities of every ship's Drive engines and weapon systems have been similarly quantified. Generally, it takes 1 Energy point to activate or "energize" 1 point of a system. Conversely, no system can use more Energy points than its maximum rating would indicate. Thus, a ship with 10 Energy points and a (nominal) Beam of 5 could allocate 3 Energy points to the Beam and produce an actual projected 3-point Beam; a full-strength Beam would cost 5 Energy points, which is the most that particular system could possibly utilize. The computer, of course, keeps track of these capabilities, displays them at your command, and prevents errors (or cheating) in their use.

**2.2 Summary of Play:** Although movement and combat for both sides are resolved simultaneously, instructions for each side's ships are entered separately and individually, and play is divided into distinct turns. On each turn, each player decides how to use the energy available to each of his ships (allocating some energy points to Drive, to move the ship; some points to the various weapon systems available; and some to the Shield, to protect the ship from enemy fire) and, without revealing them to his opponent, secretly enters these data/decisions into the computer. He may have any or all of his ships perform any action or series of actions of which they are capable; the only constraints are the amounts of energy available from each ship's power plant and the capacities of the individual ship systems to utilize that energy. Energy cannot be saved up from turn to turn nor transferred from ship to ship. However, like most of its systems, a ship's Energy "renews itself" (less any damage it has sustained) each turn. On the other hand, when a ship has launched its supply of missiles and torpedos, it must do without for the rest of the game. Few ships are identical, and any ship's capabilities are reduced by damage. With the tactical situation constantly changing, choosing when to move "full speed," when to attack with maximum beam and multiple missiles, and when to divert energy to the Shield for protection is a constant challenge every time you play STARFLEET ORION.

After both players have entered their orders, they meet at the keyboard, and one of them types M (for "MOVE"). That signals the computer to process the data, clear the screen, and display the ships in their new (post-movement) positions. All ships that are hit by enemy beams (regardless of the actual damage inflicted) will flicker. Asterisks indicate missile explosions and a moving dot shows the track of torpedos. Any ships that have been destroyed by the attacks during the round explode and vanish from the screen. That is the end of the turn.

For the Introductory scenario and all others in which Tractor Beams (not to be confused with the destructor Beam that is a ship's main energy weapon) are not permitted, the same player may enter his orders first every turn. Unless otherwise stated in the specific scenario description, if you *are* using Tractor Beams, one player should enter first on odd turns while the other goes first on even turns (see the later section on Tractor Beams). In either case, play continues until one player has accomplished the objective defined for the scenario and/or all the ships on one side have been destroyed or disabled.

**2.3 Combat Resolution:** At the end of every turn, after determining whether the various beams have actually hit the ships they were aimed at, the computer subtracts the Armor factor of the defending ship(s) from each individual attack upon it, then adds up the points of damage in excess of the Armor

factor scored against the ship by beams, missiles, and torpedo hits, subtracts from this adjusted gross total any energy points the defending ship had allocated to its shield on that turn, and randomly distributes any remaining (net) damage points among the ship's various systems. This damage, if any, will reduce the number of points usable by the systems in subsequent turns. Any system reduced to zero is disabled and cannot be utilized again. Whenever damage causes the Energy level of a ship to fall below zero the ship blows up. In cases other than total destruction, the nature and extent of the damage is not apparent to the opposing player. The condition of enemy ships can only be inferred by their behavior (e.g., how far they move, or how much damage their Beam is still inflicting on your ship).

**2.4 The Commands:** There are four basic Commands involved in play and one special command (see table 1). The tactical display -- the positions of the ships on the screen -- remains visible during all four *basic* Commands, except, of course, that M causes those positions to change. The *special command* - W (write) - allows you to save the game you are currently playing and to continue it at a later time. This command is explained in more detail in paragraph 2.6. **IMPORTANT:** None of these five Commands can be followed by a carriage return. Type only the letter.

**2.5 Starship Orders:** The most important Command is O. Orders -- your decisions for the turn -- are the heart of the game. You may give orders to all of your ships each and every turn. You may move any or all of them and you may have each use any or all of the weapon systems available to them. (Note that since the computer has no way to distinguish the identity of the person at the keyboard, be sure you are ordering *your* ships and *not* your opponent's; since the computer will not accept two orders for the same ship, if you do move the wrong one, this will be immediately detected when your opponent attempts to put in *his* move.) Typing the letter O initiates a string of Subcommand queries that must be finished before any other Commands or orders for any other ship can be given. These subcommands are shown in table 2. If you enter the wrong thing, you will get one of the messages in table 3.

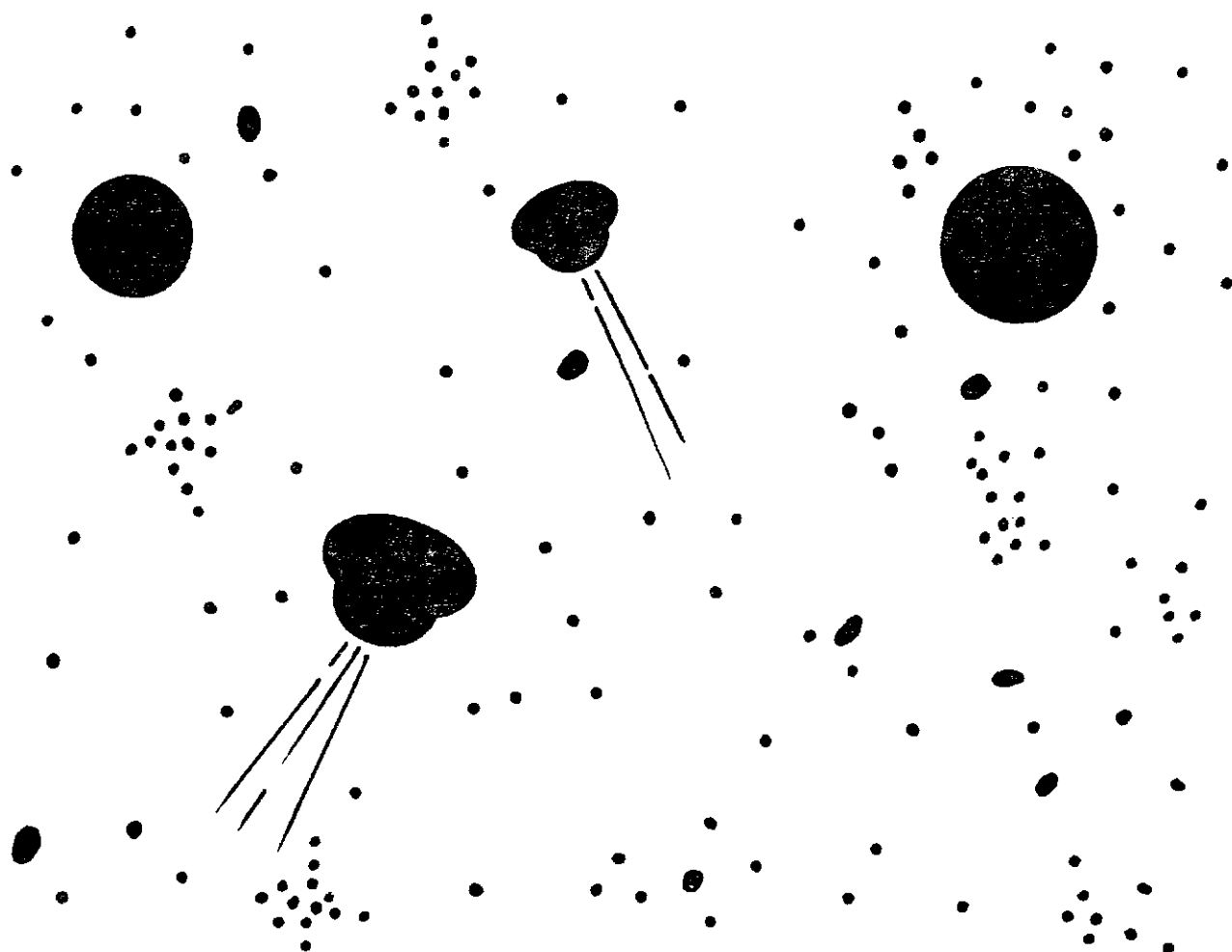


Table 1. Basic Commands for Starfleet Orion

Command	Response	Entry	Use
C	-	-	Clears bottom lines of screen
S	Ship?	Any ship number on your side.	Displays the current status of the ship indicated. Includes energy, drive, beam, shield, launchers, missiles, and torpedos
O	Ship?	Any ship on your side for which orders have not been entered.	Allows you to tell your ships what to do for the turn. See table 2.
M	-	-	Executes all orders for the current turn. An interim display shows the results of the action.
W	Do you want to save the current game?	Yes	Saves a game so that you can continue it later where you left off.
		No	Returns to command level without saving the situation on tape.

Remember that while there is no Subcommand for ENERGY, the energy points available to a ship each turn determines what it can do; each action ordered — a move or a weapon system activation — represents an allocation of energy. When all the energy possible for the turn has been expended by a ship, that ship can do nothing else until the following turn. Similarly, if your ship does not possess, for instance, a Shield, the computer will not query you about the missing system.

**2.5.1 Movement:** MASS gives you the relative mass of the ship, which allows you to calculate how far you can move. Dividing the relative MASS into 1 gives you the number of spaces (which may be a fraction) you can move for each energy point you expend. Dividing the relative MASS into your current DRIVE level gives you the number of spaces you can move at "full speed" for the turn. (A ship with a MASS of 1 could move 1 space for each point of energy allocated to its Drive engines; a DRIVE capacity of 6 would allow that ship to move a maximum of 6 spaces at a cost of 6 energy points.)

Table 2. Order Subcommands in Starfleet Orion

Prompt	What you enter
X MOVE (-LEFT) MASS = .81 ?	Enter the number of spaces you want to move in the horizontal direction. To move left, enter a negative number. The Mass is the mass of your ship. Enter 0 for no move.
Y MOVE (-DOWN)	Enter the number of spaces you want the ship to move up or down.
TRACTOR, MAX = (#) ?	Enter how many points you want to apply to the first tractor beam. You must have sufficient drive and energy points left. You indicate a pressor beam by entering a negative number.
ENERGY LEFT = (#) BEAM ?	Enter the number of points of beam to be applied. (Energy always indicates remaining points of energy.)
TARGET ?	Enter the number of the target ship (1-9, or 101-109).
ENERGY LEFT = (#) SHIELD ?	Enter the number of energy points you want to allocate to your shield.
ENERGY LEFT = (#) MISSILES ?	Enter the number of missiles you want to launch. Each missile uses one launch tube. These launchers are the same used to launch torpedos.
X(-LEFT) ?	Enter the X and then Y displacement of each missile launched. This question is repeated for each independently.
Y(-DOWN) ?	
TORPEDO DIRECTION	Enter the <i>direction</i> in which you want to launch the torpedo. See figure 2, Section 2.5.6.
ANY PROMPT	R - tells the computer to give you the range to another ship. When done you will resume entering your orders where you left off.
RANGE TO ?	Ship letter or number of the ship you want the range to.
X:(#)Y:(#)RANGE:#-OK ?	Gives X distance, Y distance, and actual range to the other ship. Enter carriage return to continue entering your orders; enter R again to find range to a second ship.

Table 3. Error Messages You May Encounter During Play of Starfleet Orion

Message	Meaning	What You Must Do
ENERGY SHORT	You tried to do something that needed more energy than you had left.	Re-enter your last subcommand, but be less ambitious.
DRIVE SHORT	You tried to do something that needed more drive than you had left.	Re-enter your last subcommand, but be less ambitious.
TOO MUCH BEAM	You tried to use more beam strength than you have.	Re-enter the order for your beam, but with fewer points allocated.
TOO MUCH SHIELD	You tried to put up more shield than you have.	Re-enter your shield with fewer points.
NO LAUNCH TUBES	You tried to launch more missiles than you have launch tubes.	Re-enter the number of missiles to be fired, but fire fewer.
TOO FAR	You tried to fire a missile farther than it could go.	Re-enter the X and Y displacements with a total displacement less than the maximum range for your missiles.
TOO MANY MISSILES	More than 99 missiles have been fired on the current turn.	You will be unable to fire any more missiles on the current turn. This is a highly unlikely occurrence.

With sufficient Energy and Drive, you can move in both dimensions on the same turn. In fact you can move anywhere within a circle whose radius is your maximum one-dimensional move. See figure 1. For rough calculations, a "diagonal" move requires almost one-and-a-half times the energy of a one-space move horizontally or vertically. Thus, a move of 3 spaces in either single direction costs about the same as moving 2 spaces in both (i.e., "diagonally"). A 5-space move in one direction costs exactly the same as a combined move of 3 in one dimension and 4 in the other. (If you can recall your plane geometry, you may recognize the Pythagorean theorem lurking in there; if not, the approximation above will serve reasonably well.)

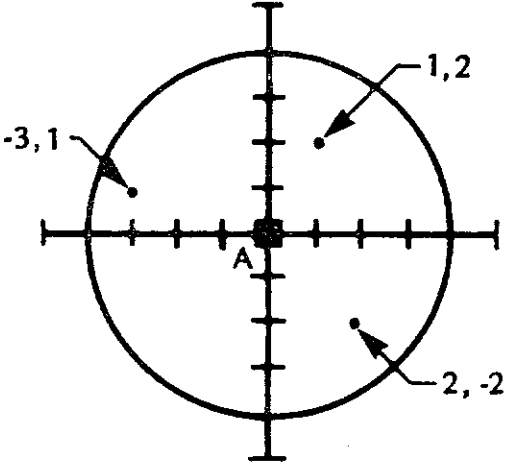


Figure 1. Potential move: For a ship starting at point A, with a maximum move of 4. Such a ship could move 1 in X and 2 in Y, -3 in X and 1 in Y, 2 in X and -2 in Y, or anywhere within the circle.

**2.5.2 Tractor Beams:** The Tractor Beam allows you to pull other objects directly toward you, or as a pressor beam, push them directly away from you.

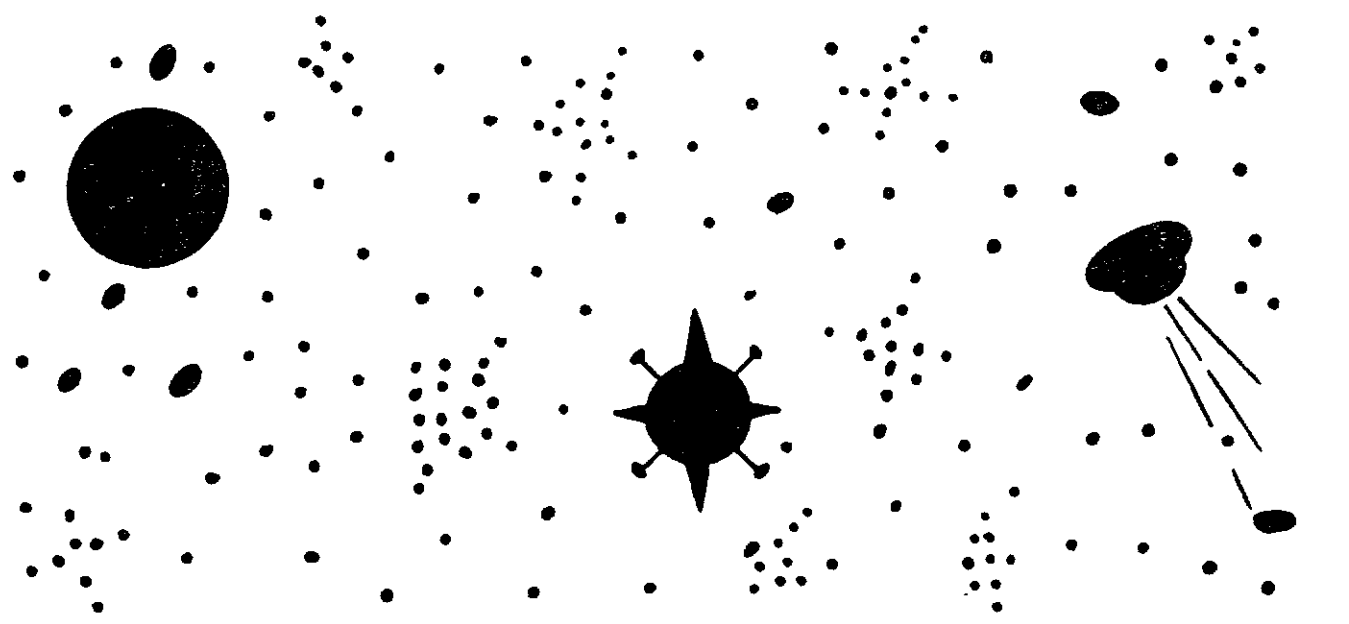
There are a number of points to remember concerning the Tractor Beam:

1. Since it uses the Drive engines, you can't move at "full speed" and use the Tractor in the same turn.
2. On the other hand, if you have the necessary Drive capacity and the available energy points, you may use the Tractor to affect more than one ship; further, you may push some and pull others.
3. Since the Tractor/Pressor Beam causes no direct damage to the "target" ship, it may be used against a friendly ship as well as one belonging to the other player.
4. You can't use a Pressor Beam against a ship in the same space as the ship you're ordering; the computer has no way of knowing in what direction to push it. However, if the target ship is friendly, you can move that ship first, in the direction you want it to go, and then use a Pressor Beam from another ship to "give it a boost."
5. Since you are effectively substituting the ordered ship's Drive for the target ship's, the Tractor/Pressor Beam is most effective when used by a large ship on a much smaller one. The more points you apply to a Tractor Beam, the more spaces it will move the target ship. Conversely, the farther away the target ship is, the less effective will be the Tractor's pull.
6. **IMPORTANT:** Unlike the weapon systems, the Tractor Beam applies to the positions of the ships as of the moment its orders are entered. Thus, the person entering his orders first in the turn has a distinct advantage in that, knowing the precise location of his target, he can calculate with considerable precision the effect of his Tractor/Pressor. (This is why this favorable position is commonly alternated from turn to turn if Tractors are in use.)

The use of Tractor/Pressor Beams is not recommended until you become familiar with the mechanics of movement; for this reason, several of the introductory-level scenarios omit them.

**2.5.3 Beam:** The Beam is one of your ship's primary offensive weapons; it is much like Captain Kirk's phasers or Luke Skywalker's lasers. The more energy points you allocate to BEAM, the more damage it will do to the target ship if it hits. The closer you are to your target, the better the chances of hitting it, and the more damage your Beam will do: at extremely close range -- less than 5 spaces away -- the Beam will do *more* points of damage than the energy points allocated to it; at long range, the Beam will do fewer points of damage than its basic allotment. Also, the bigger the target and/or the higher the Beam Quality (a variable specified in the scenario description), the more likely it is that the Beam will hit.

**2.5.4 Shield:** The Shield is a defensive force field that absorbs damage from enemy beam, missile, and torpedo attacks. Every point of energy you allocate to the Shield subtracts one point of damage from the total you would otherwise sustain.



**2.5.5 Missiles:** A Missile causes an explosion at its ordered point of impact that will cause damage to any ship occupying that space and, a lesser amount of damage to all ships in adjacent spaces. (The amount of damage is specified when the scenario is created; in the Introductory scenario, a direct hit by a missile causes 10 points of damage, and a near miss produces 4 points.) You may launch more than one missile; however, you may not launch more missiles than you have functioning Launch Tubes or energy to activate them. Regardless of the Mass of the ship, it takes one energy point to activate one Launch Tube and fire one missile.

Missiles move in much the same way as ships, X=10,Y=5 will cause a missile to explode 10 spaces to the right and 5 spaces above the position of the ship *after its move* (so don't forget to take the ship's own movement into account). X=6,Y=3 will cause a missile to explode 6 spaces to the right and 3 spaces *below* the ship's position. Don't forget that the first number you type is the horizontal (right and left) dimension; the second number is the vertical (up and down) dimension. Note that the position displayed for missiles is only approximate. A missile at any of 3 different points will appear in the same place (for display purposes only).

Missiles have a range specified when the scenario is created (15 spaces, in the Introductory scenario); provided you have at least one Energy point available to launch a missile in the first place, this range is independent of the ship's Drive and Energy.

**2.5.6 Torpedos:** Torpedos are in many ways your most potent weapon. Like a missile, a torpedo can only be fired from an available Launch Tube. Unlike missiles and ships, however, which move from one spot to another without traversing the intervening distance, torpedos travel in a straight line in a series of very rapid microjumps. Also unlike missiles, which explode even if there is no ship nearby, a torpedo will strike only if it finds a target -- and then only against a single target -- but it does have a limited capacity to "home in on" a potential target. Instead of selecting a point (as you did for missiles), you select one of 8 *directions* (see figure 2); the torpedo will then move in that direction up to the limit of its range (40 spaces, in the Introductory scenario) and will seek out and attack (doing 12 points of damage, in the Introductory scenario) the first object -- planet, missile, friendly or enemy ship -- that lies within *two spaces* (on either side) of that line of direction. Like missiles, torpedos do not distinguish between friend and foe, so watch where you're firing them!

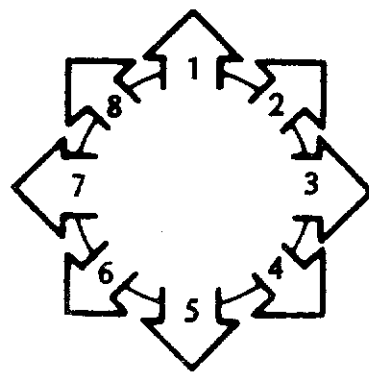


Figure 2. Torpedo Aiming Directions

**2.6 Continuing a Game at a Later Time:** Since some of the scenarios are rather long, Starfleet Orion provides you with a special command - W - to stop a game in the middle and continue it at a later time. This command writes out the current scenario just as if it were a starting scenario. W should be executed before either player enters orders for the coming turn. After executing W, you can power down the computer. To continue your game where you left off, just load Starfleet Orion normally, but read in the new in-progress scenario you saved with the W.

**2.7 Starting Over:** If for any reason you wish to stop in the middle of a scenario and start over on the same scenario, hit the *BREAK* key and then type RUN and carriage return. You may continue from that point with the procedures described in Section 2.0. Don't forget to rewind the data tape.

### 3.0 Scenario Building

After you have played the Introductory scenario (which is already on cassette) once or twice, you will wish to try some of the others. This is mostly just a matter of "filling in the blanks" -- that is, answering the computer's questions. The first step, however, is to look through the Battle Manual and find the scenario you wish to play; they are arranged roughly in order of complexity. When you have chosen a scenario, you must transfer the data given in the Battle Manual onto a cassette tape so that it can then be processed by the main Battle Program. This data transfer is accomplished by the "Builder" program.

Insert the program cassette (the one that came with the game) into the computer and press play. Type: CLOAD"B" and then carriage return (hit the *RETURN* key). The computer will then instruct you to press PLAY on the tape controls; do so. The computer will inform you when it has found the program and will signify that it has loaded the program into its memory by announcing, "READY." (This may take a minute or two.) Type RUN and carriage return.

#### NOTE

You may use one cassette to hold both the programs and the scenario data; however, to prevent the possibility of erasing something vital (like the program), we strongly suggest *using a separate cassette to store this data*. If you are doing so, rewind and remove the program cassette for safekeeping. (If you are using one cassette for both functions, simply leave it in the computer; *do not rewind it*.)

The Builder Program is set up to facilitate storing a series of scenarios, successively, on the same tape; to do this properly (without recording over previously constructed scenarios), you must enter the name of the scenario nearest the end of the tape (normally, the one most recently entered). Simply type the name (e.g., CONVOY) and carriage return.

Then, on the next line, as requested by the program, enter the name of the scenario you are planning to work with. Do not put this name in quotes. Then hit *RETURN*, as usual.

At this time, following the program's instructions, insert the cassette you are using as a data tape and press *RECORD* and *PLAY* on the tape controls, and hit a carriage return.

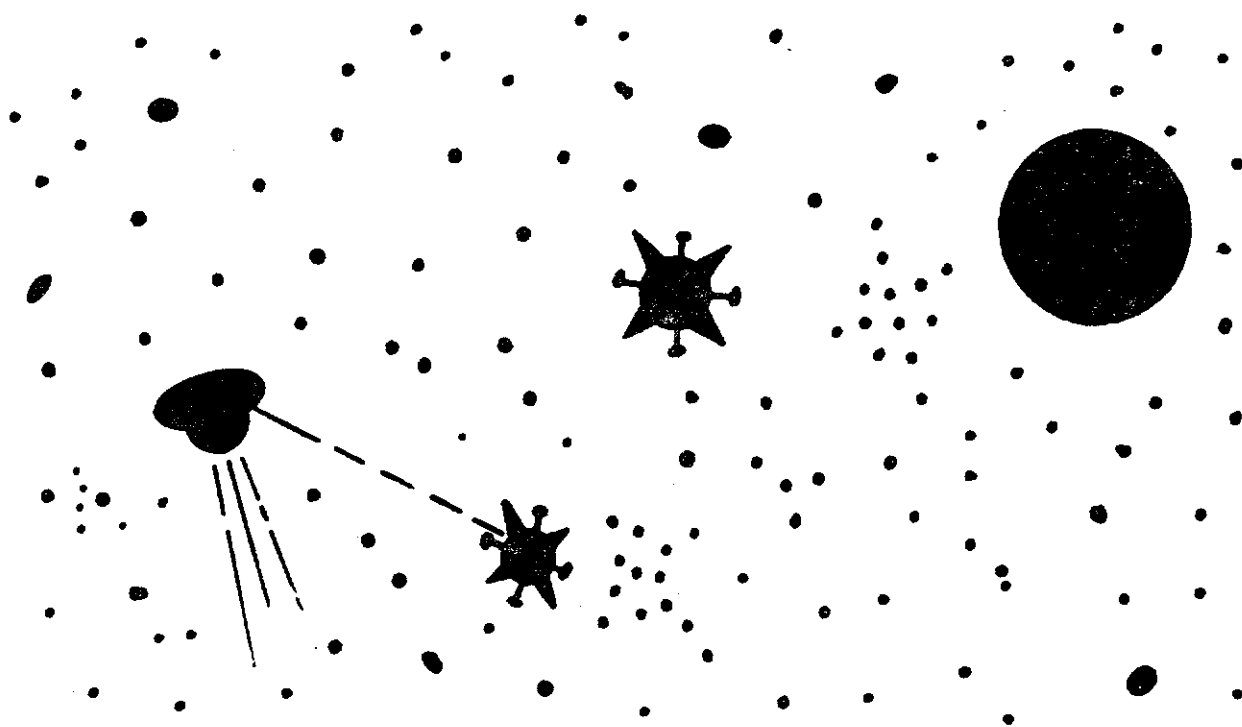
**3.1 General:** Regardless of the number of players or the number of ships actually controlled by each player, for scenario-building purposes there are only two sides, and no more than nine ships may be specified for each side. The ships designated here as belonging to Player One will be represented on the CRT (the screen) by the numbers 1-9. Player Two's ships will be shown as the letters A-I and will be referred to as such.

**3.2 Planets:** The computer's first question involves the existence of a planet. If the scenario calls for a planet, type YES and carriage return; if not, type NO and carriage return. (Note that, if there is a planet, data for it must be entered, at the appropriate point, as if it were Ship #1 of Player Two; it will appear on the screen labeled with a "P" and in the course of play it will be referred to, targeted, and ordered as Ship P.) Planets cannot move and cannot be blown up.

**3.3 General Entries for One Side:** When the message, **PLAYER ONE, #OF SHIPS**, appears, type the number called for by the scenario and carriage return (*RETURN*). (**IMPORTANT:** Enter numbers normally, as 1, 2, 3, etc., not 01, 02, 03. Don't spell out numbers, ever. Don't spell out "*RETURN*," either; it's the *RETURN* key that is called for.)

**DAMAGE AND RANGE OF MISSILES:** This determines the damage that one player's missiles do when they hit, as well as the distance they can be projected from their "parent" ships. Three numbers separated by commas, are required. The first specifies the number of gross points of damage (before being modified by the armor or shield of the target ship) caused by a "direct hit" -- the damage inflicted on any ship located in the space in which the missile explodes. The second number specifies the number of gross points of damage caused by a "near miss" -- that is, by a missile that explodes "next to" (in any direction, including diagonally) a spaceship. (This number may be 0.) The third number is the range of the missiles -- the number of spaces they can be projected by the ships that launch them. (Most scenarios call for a range of 15 or less.) From the scenario data in the Battle Manual, enter the appropriate number for a direct hit, comma, the number for a near miss, comma, the range, and carriage return (e.g., 12,4,15*RETURN*).

**DAMAGE AND RANGE OF TORPEDOS:** This is similar to the previous entry, except that, since Torpedos do not explode unless they find (and hit) a target, there is no specification for a "near miss." The maximum range for Torpedos is 64, but some scenarios require a lower number. Type the number for damage, comma, the range, and carriage return (e.g., 15,40*RETURN*).



**3.4 Creating the Individual Ships:** To simplify the duplication of physically identical ships, there is the question, **IS THIS SHIP THE SAME AS THE PREVIOUS SHIP?** Typing **YES** and a carriage return allows the computer to "copy" the physical characteristics of the ship you entered previously while still allowing you to give the new ship a different Beam Quality and location. This short cut obviously, cannot be used to enter the initial ship; nor would it be appropriate if you were entering a ship different from the previous one. In these latter cases, type **NO** and carriage return.

The responses to the prompting messages **ENERGY, DRIVE, BEAM, SHIELD, LAUNCH TUBES, MISSILES,** and **TORPEDOS** follow a common format: two numbers are required, separated by a comma but no spaces. The first number is the ship's starting specification; the second number is the number of hits it has sustained (before the game starts) on that particular function. (This second

number -- "hits" -- is usually 0.) The difference between these two numbers represents its current condition at the start of the scenario. Again, this data is specified in the scenario description in the Battle Manual. For example:

ENERGY

?10,0

DRIVE

?5,0

BEAM

?5,0

SHIELD

?2,0

ARMOR

?1

LAUNCH TUBES

?2,0

MISSILES

?12,0

TORPEDOS

?0,0

X,Y: This determines the ship's starting position on the screen. The 'X' coordinate represents the horizontal dimension, from 1 on the extreme left to 64 on the extreme right. The 'Y' coordinate represents the vertical dimension, with 1 being a location on the bottom line of the field and 36 being a space on the top. 32,18 is thus in the center of the screen. Note: entering a 0 (zero) in either or both dimensions means that the computer will assign a random starting position (one that will be different each time the scenario is played) *for that dimension* (e.g., 1,0 means that the ship will start *somewhere* on the far lefthand side of the screen; 0,0 allows the computer to assign the ship a position *anywhere* on the board). Enter the number for the X (horizontal) dimension, comma, the number for the Y (vertical) dimension, and carriage return.

BEAM QUALITY: This number represents the efficiency of a ship's beams -- that is, the marksmanship of the crew and equipment. It can be a positive or negative number; 0 is a poor value; -2 is worse; 5 is average. Enter the number and carriage return (as for ARMOR: e.g., 5RETURN).

3.5 Errors: If you type in the wrong number and notice it *before* you have entered RETURN, simply use the -- (left arrow) key to "erase" the incorrect number, and then enter the correct figure normally. If you see an error later, the computer gives you two more chances to correct it. First, it asks for your approval of each ship's specifications, individually; at that point, enter NO if you wish to make no changes; if alterations are required, type YES and carriage return, and the computer will allow you to redo that ship from the beginning. After the data for all the ships on one side have been entered, the computer will display them all in a group and again ask for your approval. Again, if you type YES, you will be allowed/required to do *all* the ships *on that side* over again from the beginning. If you are satisfied that you have entered your data correctly, simply enter NO (no change) in response to this final checkpoint, and the computer will then ask for the other side's ships.

3.6 Player Two: Enter the data for the ships of Player Two just as you did for those of Player One (see Sections 3.3, 3.4, and 3.5).

**3.7 CAN YOU FIRE ON YOUR OWN SHIPS:** It is obviously undesirable to fire on your own ships by mistake; entering NO in response to this question prevents you from accidentally beaming your own ships. This "failsafe" cannot be used in those special scenarios (e.g., RELIC) in which, for display or other reasons, ships that are theoretically on the same side are in fact controlled by opposing players. Entering YES here allows you to beam enemy ships the computer thinks are "friendly." (Note: since missiles and torpedos have no way of distinguishing friend from foe, miscalculation on the part of a player will allow him to blow up his own ships, even if the "failsafe" beam option is chosen.)

**3.8 ARE TRACTOR BEAMS PERMITTED:** Use of tractor beams (and their converse, pressor beams) should be reserved for players with some experience; to prevent confusion and to speed up play, a NO entered here will delete tractor beams (and the questions about them) from the play of the scenario. If, on the other hand, the scenario calls for tractor beams, enter YES (and carriage return, as ever).

**3.9 Completing the Scenario:** When the data for both sides has been entered and all questions answered, the computer will announce that the scenario is prepared. At this point, press *STOP* on the tape controls, and then rewind the cassette back to the beginning.

#### **4.0 Use of STARFLEET ORION Program Listings**

The STARFLEET ORION program listings are supplied in case you should inadvertently destroy your program cassette, or in the event that your machine cannot read the supplied cassette. In either case, you have to key in the programs.

# STARFLEET ORION - TRS-80 VERSION

```

10 REM ORION, TRS-80 VERSION-COPYRIGHT 1979, AUTOMATED SIMULATIONS
15 G=9:CA=15360:TX=0:BA="ENERGY LEFT="
16 DEFINTX-Y
20 DIMX(0:1),Y(0:1),ENX(0:1),HX(0:1),FX(0),MXZ(99),MYZ(99),MLZ(99),XD(0:1),YD(0:1)
21 DIMORX(0:1),ENX(0:1),SHX(0:1),LHX(0:1),MSX(0:1),TPX(0:1),ENX(0:1),BOZ(0:1),RX(0:1)
25 DIMVS(1),MXZ(0:1),ENX(0:1),TNX(0:1),FX(0:1),GNX(0:1),VZ(8),WZ(8)
30 VZ(1)=0:WZ(1)=-1:VZ(2)=1:WZ(2)=-1:VZ(3)=1:WZ(3)=0:VZ(4)=1:WZ(4)=1:VZ(5)=0:WZ(5)=1:VZ(6)=-1:WZ(6)=1:VZ(7)=-1:WZ(7)=0:VZ(8)=-1:WZ(8)=-1
40 CLS:PRINTTAB(23):"STARFLEET ORION"
45 PRINTTAB(23):"BATTLE PROGRAM"
46 RANDOM
→ 49 REM SCENARIO INITIALIZATION
50 PRINT"ENTER SCENARIO":INPUTN$
52 PRINT"PRESS PLAY"
55 INPUT#-1,N$
56 PRINT"SCENARIO: "N$
60 INPUT#-1,NS(0),NS(1):FORI=0TO1
65 FORJ=0TONS(1)
70 INPUT#-1,ORX(J,1),ENX(J,1),SHX(J,1),LHX(J,1),MSX(J,1),TPX(J,1),ENX(J,1),BOZ(J,1),RX(J,1),X(J,1),Y(J,1),MXZ(J,1)
90 IFX(J,1)=0THENX(J,1)=RND(64)-1
35 IFY(J,1)=0THENY(J,1)=RND(36)-1
100 NEXTJ:NEXTI
110 INPUT#-1,FL,PX(0),PX(1),PX(2),PX(3),PX(4),PX(5),PX(6),PX(7),PX(8),PX(9),EZ,HZ
115 IFN$=H$00T0210EL5E00T055
120 REM UTILITY SUBROUTINES
130 PRINT#768,"RANGE TO":GOSUB150:IFLEN(A$)>160T0130
131 IFJ+1J=15THENJ=0:ELSEIFJ<00RJ>0-160T0130
132 XZ=XD(J,1J)-XD(N,1J)-XN:YY=YD(N,1J)-YD(J,1J)+YN:RR=50R(XZ*2+YY*2)
134 PRINT#768,"X RANGE: "XZ: " Y RANGE: "YY: " DISTANCE: "RR: " - OK":INPUT$
136 GOSUB150:RETURN

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140 IFR<63 THEN R=63
141 IFR<0 THEN R=0
142 IFE>35 THEN B=35
143 IF E<0 THEN B=0
144 RETURN
150 INPUT A$: J=ASC(A$)
170 IJ=0: IF J<64 THEN IJ=1: J=J-65 ELSE J=J-49
190 FOR JJ=768 TO 960 STEP 64: PRINT@JJ, "
      ",
192 NEXT JJ: RETURN
200 CLS: FOR I=0 TO 1: FOR J=0 TO N5(I)
203 A=CX+X(J, I)+64*INT(Y(J, I)/3)+1: B=49+J: IF I=1 THEN B=65+J
204 IF Y(J, I)=0 THEN POKER A, B
205 NEXT J: NEXT I
206 FOR I=0 TO 1: FOR J=0 TO N5(I): IF Y(J, I)=0 THEN SET(X(J, I)+2+1, Y(J, I))
207 NEXT J: NEXT I
208 IF FL=1 THEN POKER CX+X(0, 1)+64*INT(Y(0, 1)/3)+1, 80
209 RETURN
210 FOR I=0 TO 1: FOR J=0 TO N5(I): X0(J, I)=X(J, I): Y0(J, I)=Y(J, I): NEXT J: NEXT I: GOSUB 200: K
=0
223 REM COMMAND LEVEL LOOP
225 A$=INKEY$: IFR$="C" THEN GOSUB 190: GOTO 225
230 IFR$="S" GOTO 0310
235 IFR$="O" GOTO 0410
240 IFR$="N" GOTO 0705
242 IFR$="W" GOTO 02000
245 GOTO 0225
308 REM STATUS DISPLAY
310 GOSUB 190: PRINT@768, "ENTER SHIP": GOSUB 150: IF J+IJ=15 THEN J=0
312 IF J<0 OR I>9-1 GOTO 0225
315 PRINT@768, "ENER"ENX(J, IJ): "DRV"DRX(J, IJ): "BEAM"BMX(J, IJ): "SHLD"SHX(J, IJ)
320 PRINT@832, "LNCH"LNX(J, IJ): "MEL"MSX(J, IJ): "TORP"TPX(J, IJ): GOTO 0225
408 REM ENTER ORDER
410 NN=0: GOSUB 190: PRINT@768, "ENTER SHIP": GOSUB 150: N=J: II=IJ: IF J+IJ=15 THEN NN=0: ELSE
EIFN)=R-1 OR N<0 GOTO 0225
415 NN=0: VN=0: LXI=X(N, II): IF LXI>64 THEN PRINT@768, "NOT IN PLAY": GOTO 0225
420 LYI=Y(N, II): IF LYI=0 THEN PRINT@768, "ALREADY ENTERED": GOTO 0225
425 E=ENX(N, II): GMX(N, II)=0: DR=DRX(N, II)

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430 FX(N,II)=1:IFFL*(N+1)*II=1GOTO490
435 PRINT#768,"X MOVE (-LEFT) MASS="INT(MAX(N,II)/36*100+.5)/100
440 INPUT#1:GOSUB190:IFA#="R"THENGOSUB130:GOTO435:ELSEVN=VAL(A#)
445 PRINT#768,"Y MOVE (-DOWN)":INPUT#1:GOSUB190:IFA#="R"THENGOSUB130:GOTO445:ELS
EYN=-VAL(A#)
450 DE=INT(MAX(N,II)*SOR(XN*XN+YN*YN)/36+.99)
455 IFDE#0THENPRINT#896,"ENERGY SHORT":XN=0:YN=0:GOTO435
460 IFDE#0THENPRINT#896,"DRIVE SHORT":XN=0:YN=0:GOTO435
465 A=LX+XN:B=LY+YN
470 IFA#AND(65536#0)OR(08#37)GOTO485
475 PRINT#768,"ENTER Y FOR ESCAPE":INPUT#1:IFA#<"Y"THENXN=0:YN=0:GOTO435
480 X(N,II)=65:Y(N,II)=-2:GOTO225
485 X(N,II)=A:Y(N,II)=B:E=E-DE:DR=DR-DE:LX=X:A:LY=Y:B:IFE=0GOTO225
490 IFM#0ORDR=0GOTO545
495 A=DR:IFE<0THENA=E
495 PRINT#768,"TRACTOR, MAX="A:INPUT#1:GOSUB190:IFA#="R"THENGOSUB130:GOTO495:ELS
E=VAL(A#):IFL=0GOTO545
500 IFA#(L)>0THENPRINT#896,"DRIVE SHORT":GOTO495
505 IFA#(L)>0THENPRINT"ENERGY SHORT":GOTO495
510 PRINT#768,"TARGET":GOSUB150:IFJ=15ANDIJ=1THENJ=0
512 IFJ<0ORJ>0-1GOTO510
515 DR=DR-ABS(L):E=E-ABS(L):A=LX-X(J,IJ):B=LY-Y(J,IJ)
520 DE=SOR(A#A+B#B):LL=L/((DE/3+1)*MAX(J,IJ)/36):IFDE=0GOTO490
525 SX=A*LL/DE:LL=B*LL/DE
530 IFL#0THENIFABS(SX)>ABS(A)ORABS(LL)>ABS(B)THENSX=A:LL=B
535 A=X(J,IJ)+SX:B=Y(J,IJ)+LL:GOSUB140:X(J,IJ)=A:Y(J,IJ)=B:IFDR#0GOTO490
545 IFBN(N,II)<=0GOTO585
550 PRINT#768,B#E:"BERN":INPUT#1:GOSUB190:IFA#="R"THENGOSUB130:GOTO550:ELSEB=VA
L(A#)
555 IFS#BN(N,II)OR#0THENPRINT#960,"TOO MUCH":GOTO550
560 IFB<=0GOTO585
565 BN(N,II)=B:E=E-B
570 PRINT#768,"TARGET"
575 GOSUB150:IFJ+IJ=15THENJ=0
577 IFJ>(0-1)GOTO570
580 IFR#0THENIFI=IJGOTO570
585 TN(N,II)=J+100*IJ:IFE=0GOTO225

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550 IF SX(N, II) <= 0 GOTO 515
595 PRINT@760, B#; E; "SHIELD": INPUT#1: GOSUB190: IFA#="R" THEN GOSUB130: GOTO 595: ELSE SZ
=VAL(A#)
600 IF SX<0 OR SX>25 SX(N, II) THEN PRINT@960, "TOO MUCH": GOTO 575
605 IF SX<=0 GOTO 615
610 E=E-EX: SX(N, II)=SX: IFE=0 GOTO 625
615 RS=MSX(N, II): IFLN(N, II)=GOKRS=0 GOTO 685
620 PRINT@760, B#; E; "MISSILES": INPUT#1: GOSUB190
622 IFA#="R" THEN GOSUB130: GOTO 620
623 MN=VAL(A#)
625 IF MN<=0 GOTO 685
630 IF MN<0 THEN PRINT@960, "ENERGY SHORT": GOTO 620
635 IF MN>LN(N, II) THEN PRINT@960, "LAUNCH TUBES SHORT": GOTO 620
640 IF MN>RS THEN PRINT@960, "MISSILES SHORT": GOTO 620
645 E=E-MN: MSX(N, II)=RS-MN
650 FOR JK=1 TO MN
655 PRINT@760, "X(-LEFT)": INPUT#1: GOSUB190: IFA#="R" THEN GOSUB130: GOTO 655
656 XM=VAL(A#)
657 PRINT@760, "Y(-DOWN)": INPUT#1: GOSUB190: IFA#="R" THEN GOSUB130: GOTO 657
658 YM=-VAL(A#)
660 IF SQ(XM*XM+YM*YM)-.01>FX(II+4) THEN PRINT@960, "TOO FAR": GOTO 655
665 IF K>99 THEN PRINT@960, "TOO MANY MISSILES": GOTO 685
670 A=LX+XM: B=LY+YM: GOSUB140
675 K=K+1: MX(K)=A: MY(K)=B: ML(K)=II
680 NEXT JK
685 LL=TP(N, II): IFE=0 OR LN(N, II)=MN OR LL=0 GOTO 625
690 PRINT@760, "TORPEDO DIRECTION (1 IS UP)": INPUT#1: GOSUB190: IFA#="R" THEN GOSUB130
8: GOTO 630: ELSE L=VAL(A#)
695 IFL<=0 OR L>8 GOTO 625
700 TP(N, II)=LL-1: GN(N, II)=L: GOTO 625
704 REM MOVEMENT RESOLUTION
705 TX=TX+1: PRINT@760, "TURN" TX: FOR I=1 TO 600: NEXT I
710 GOSUB200: FOR I=0 TO 1: FOR J=0 TO NS(I): HX(J, I)=0: FX(J, I)=0: NEXT J: NEXT I
715 FOR II=0 TO 1: FOR N=0 TO NS(II)
720 IF BN(N, II) <= 0 GOTO 755
725 J=IN(N, II): JJ=A: IF J>99 THEN II=1: J=J-100

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727 IFY(J,IJ)<0GOTO755
730 D=500*((X(N,IJ)-X(J,IJ))*2+(Y(N,IJ)-Y(J,IJ))*2)
735 IFD=0GOTO745
740 IFRND(1000)/1000*(MFX(J,IJ)*.67/(D*.2+.9)*60*(N,IJ)+4))GOTO755
745 L=BNZ(N,IJ)+10/(D+5)-MFX(J,IJ)
747 FORM=1T050:RESET(2*X(J,IJ)+1,Y(J,IJ)):H=M1:SET(2*X(J,IJ)+1,Y(J,IJ)):H=M1:N
EXTN
750 IFL>0THENMFX(J,IJ)=HX(J,IJ)+INT(L+.5)
755 BNZ(N,IJ)=0
756 NEXTN:NEXTIJ
760 IFK=0GOTO686
765 FORM=1T0K:L=MLZ(N):FORIJ=0T01:FORJ=0TON5(IJ)
770 B=RES(MXZ(N)-X(J,IJ)):LZ=RES(MVZ(N)-Y(J,IJ))
775 A=PZ(L)-RRZ(J,IJ):IFK0THENA=0
780 IFE=0ANDLZ=0THENHX(J,IJ)=HX(J,IJ)+A:GOTO795
785 E=PZ(L+2)-RRZ(J,IJ):IFE0GOTO735
790 IFB=1ANDLX=1THENHX(J,IJ)=HX(J,IJ)+E
795 NEXTJ:NEXTIJ
800 POKECZ+MXZ(N)+64+INT(MVZ(N)/3),42
805 NEXTN
806 GOSUB1109
810 FORIJ=0T01:FORJ=0TON5(IJ)
815 H=HX(J,IJ)-SHX(J,IJ):SHX(J,IJ)=0
820 HM=INT((3+DFX(J,IJ)+BMX(J,IJ)+SHX(J,IJ)+LNK(J,IJ)+MEZ(J,IJ))/4+TFX(J,IJ)/2+ENZ
(J,IJ))
825 IFPL*IJ*(J+1)=1ANDNM=30RNC=0GOTO930
830 R=RND(NM):RS=0:RS=RS+ENZ(J,IJ)+3:IFR>RSGOTO840
835 IFENZ(J,IJ)=0GOTO895ELSEH=H-1:ENZ(J,IJ)=ENZ(J,IJ)-1:GOTO925
840 RS=RS+DRX(J,IJ):IFR>RSGOTO850
845 H=H-1:DRX(J,IJ)=DRX(J,IJ)-1:GOTO925
850 RS=RS+BMX(J,IJ):IFR>RSGOTO853
855 H=H-1:BMX(J,IJ)=BMX(J,IJ)-1:GOTO925
853 RS=RS+SHX(J,IJ):IFR>RSGOTO860
855 H=H-1:SHX(J,IJ)=SHX(J,IJ)-1:GOTO925
860 RS=RS+LNK(J,IJ):IFR>RSGOTO870
865 H=H-1:LNK(J,IJ)=LNK(J,IJ)-1:GOTO925
870 RS=RS+INT(RSX(J,IJ)/4+.75):IFR>RSGOTO883

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875 H=H-1:MSX(J,IJ)=MSX(J,IJ)-4:IFMSX(J,IJ)<0THENMSX(J,IJ)=0
880 GOTO925
883 RS=RS+INT(TFX(J,IJ)/2+.5):IFRS>5GOTO830
885 H=H-1:TFX(J,IJ)=TFX(J,IJ)-2:IFTFX(J,IJ)<0THENTFX(J,IJ)=0
890 GOTO925
895 XX=2*X(J,IJ)+1:YY=Y(J,IJ):IFPL*(J+1)*IJ=1GOTO930
900 SET(XX+1,YY-1):SET(XX+1,YY+1):SET(XX-1,YY+1):SET(XX-1,YY-1):SET(XX+2,YY):SET
(XX-2,YY):FORM=1T050:NEXTM
905 SET(XX+2,YY-2):SET(XX+2,YY+2):SET(XX-2,YY+2):SET(XX-2,YY-2):SET(XX+4,YY):SET
(XX-4,YY)
910 RESET(XX,YY):GNX(J,IJ)=0
920 X(J,IJ)=65:Y(J,IJ)=-2:GOTO930
925 IFH>0GOTO830
930 NEXTJ:NEXTIJ
935 JK=100+(N5(0)+N5(1))*50:FORJ=1TOJK:J=J+1:NEXTJ:GOTO210
1035 REM TORPEDO RUN SUBROUTINE
1100 FORI=0TO1:FORM=0TON5(I)
1110 L=GNX(M,I):V=2*VX(L):MM=MZ(L)
1120 J=0:A=2*X(M,I)+1:B=Y(M,I):IFL=0GOTO1492
1130 LL=50R((VV/2)I2+MMI2)
1140 XX=AA+V:YY=BB+M:J=J+LL:IFJDFX(I+6)GOTO1492
1150 IFXX>1270RYY>350GOTO1492
1160 IFXX<000RYY<0GOTO1492
1170 IFV<00ANDMM<0GOTO1250
1180 E=1:GOTO1400
1190 XX=XX+V:YY=YY+M:E=7:GOTO1400
1200 DX=2:DY=0:IFMM=0THENDX=0:DY=1
1210 XX=XX+DX-V:YY=YY+DY-M:E=2:GOTO1400
1220 XX=XX+DX+V:YY=YY+DY+M:E=8:GOTO1400
1230 XX=XX-3+DX-V:YY=YY-3+DY-M:E=3:GOTO1400
1240 XX=XX-DX+V:YY=YY-DY+M:E=9:GOTO1400
1250 E=4:GOTO1400
1260 XX=XX+V:YY=YY+M:E=10:GOTO1400
1270 XX=XX-V:YY=YY-M:E=5:GOTO1400
1280 YY=YY+M:E=11:GOTO1400
1290 XX=XX+V:YY=YY-M-M:E=6:GOTO1400

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1300 XX=XX+YY:E=12:GOTO1400
1310 A=A+YY:B=B+MM
1315 JJ=CX+INT(A/2)+64*INT(B/3):AB=PEEK(JJ):SET(A,B)
1318 FORLO=1TO3:LO=LO+1:NEXTLO
1320 POKEJJ,AB
1330 GOTO1140
1400 X1=(XX-1)/2:IFK=0THENFORNZ=1TOK:IFMYZ(NZ)=YYTHENIFWZ(NZ)=X1GOTO1432:ELSENE
XTNZ:ELSENEXTNZ
1402 IFX(K00RYND)1270RYK60RY>35GOTO1440:ELSEIFNDTP0INT(XZ,YY)GOTO1440
1410 II=2
1412 II=II-1:FORN=8TON5(II)
1420 IFX(N,II)=(XX-1)/2ANDY(N,II)=YYGOTO1450
1430 NEXTN:IFIID=0GOTO1412
1432 PRINT"TORPEDO FALL THROUGH ERROR"
1440 ONEGOTO1150,1220,1240,1260,1280,1300,1260,1230,1310,1270,1290,1310
1450 JJ=CX+(XX-1)/2+64*INT(YY/3):AB=PEEK(JJ):POKEJJ,64
1460 E=PZ(I+6)-ABZ(N,II):IFE=0THENE=0
1470 HZ(N,II)=HZ(N,II)+E
1480 POKEJJ,AB
1492 BNZ(N,I)=0:NEXTN:NEXTI:K=0:RETURN
1995 REM SAVE SITUATION
2000 PRINT#765,"DO YOU WANT TO SAVE THE CURRENT GAME":INPUT#765:IFMID$(A$,
,1,1)<>"Y"THENGOTO225
2010 PRINT#766,"POSITION TAPE AND PRESS RECORD AND PLAY":INPUT#766
2020 INPUT"ENTER NAME TO BE SAVED UNDER":A$
2030 PRINT#-1,A$
2040 PRINT#-1,N5(0);","N5(1)
2050 FORI=8TO1:FORJ=8TON5(I)
2060 PRINT#-1,DRZ(J,I);","ENZ(J,I);","SHZ(J,I);","LNK(J,I);","NSZ(J,I);","TPZ(J,
I);","BNZ(J,I);","BNZ(J,I);","ARZ(J,I);","X(J,I);","Y(J,I);","WAZ(J,I)
2070 NEXTJ:NEXTI
2080 PRINT#-1,PL;","PZ(0);","PZ(1);","PZ(2);","PZ(3);","PZ(4);","PZ(5);","PZ(6);
","PZ(7);","PZ(8);","PZ(9);","EZ;","NZ
2090 PRINT"SCENARIO "A$;" COMPLETE"
2100 END

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# BUILDER - TRS-80 VERSION

```

10 'BUILD FLEET, COPYRIGHT 1978, AUTOMATED SIMULATIONS
20 Q=9
30 DIMDZ(9*Q,1),HDZ(7*Q,1),FZ(9)
40 DIMWZ(Q,1),YZ(Q,1),N5(1),MAG(Q,1)
50 CLS:PRINTTAB(24):"STARFLEET ORION"
60 PRINTTAB(23):"SCENARIO BUILDER"
70 PRINT"":PRINT"THIS PROGRAM BUILDS SCENARIO DATA TAPES FOR STARFLEET ORION."
80 PRINT"TO READ OUT TO THE END OF THE LAST SCENARIO BEFORE ADDING THE"
90 PRINT"NEXT, ENTER YES (YOU MUST KNOW THE NAME OF THAT SCENARIO). "
100 INPUTC$:IFMID$(C$,1,1)="Y"GOTO1000
110 PRINT"ENTER SCENARIO TO BE BUILT":INPUTN$
120 INPUT"INSERT POSITIONED DATA TAPE AND PRESS RECORD AND PLAY":K
130 PL=0:PRINT"IS 'A' A PLANET":INPUTA$:IFMID$(A$,1,1)="Y"THENPL=1
135 PRINT#-1,N$
140 FORI=0TO1:P5=0
150 CLS:PRINT"SPACE BATTLE INITIALIZATION"
160 PRINT"PLAYER"1+1:PRINT"NUMBER OF SHIPS"
170 INPUTN5(1):N5(1)=N5(1)-1
175 IFN5(1)<0THENPRINT"NUMBER OF SHIPS MUST BE GREATER THAN 0":GOTO160
180 IFN5(1)>9-1THENPRINT"TOO MANY SHIPS":GOTO160
190 PRINT"ENTER DAMAGE (DIRECT HIT AND NEAR MISS) AND RANGE FOR MISSILES"
200 INPUTFZ(1),FZ(1+2),FZ(1+4):PRINT"ENTER DAMAGE AND RANGE FOR TORPEDOS"
210 INPUTPZ(1+6),PZ(1+8)
215 J=0
220 IFJ>N5(1)GOTO548
230 PRINT"SHIP"J+1
240 IFJ=0THENPRINT"IS THIS SHIP THE SAME AS THE PREVIOUS SHIP":INPUTC$
250 IFJ=0ANDMID$(C$,1,1)="Y"THENJ=J+2000:GOTO370
260 PRINT"ENERGY HITS":INPUTDZ(J+6*Q,1),HDZ(J+6*Q,1)
270 HZ(J+6*Q,1)=DZ(J+6*Q,1)-HDZ(J+6*Q,1)
280 PRINT"DRIVE HITS":INPUTWZ(J,1),HDZ(J,1):HDZ(J,1)=DZ(J,1)-HDZ(J,1)
290 PRINT"BEAM HITS":INPUTDZ(J+Q,1),HDZ(J+Q,1)

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300 HDX(J+0,I)=DX(J+0,I)-HDX(J+0,I)
310 PRINT"SHIELD,HITS":INPUTDX(J+2+0,I),HDX(J+2+0,I)
320 HDX(J+2+0,I)=DX(J+2+0,I)-HDX(J+2+0,I)
330 PRINT"ENTER ARMOR THICKNESS IN INCHES":INPUTDX(J+8+0,I)
340 PRINT"LAUNCH TUBES,HITS":L=3:GOSUB3000
350 PRINT"MISSILES,HITS":L=4:GOSUB3000
360 PRINT"TORPEDOS,HITS":L=5:GOSUB3000
370 PRINT"% Y":INPUTX(J,I),Y(J,I)
380 IFX(J,I)>630ORX(J,I)<0THENPRINT"% OUT OF RANGE":GOTO370
390 IFY(J,I)=0GOTO410
400 Y(J,I)=36-Y(J,I):IFY(J,I)>350ORY(J,I)<0THENPRINT"Y OUT OF RANGE":GOTO370
410 S=DX(J+2+0,I):B=DX(J,I):E=DX(J+6+0,I)
420 MAX(J,I)=INT(DX(J+4+0,I)/4+DX(J+3+0,I)+5+DX(J+0,I)+B+E+DX(J+5+0,I)/2)
430 R=DX(J+8+0,I)*.291594023*MAX(J,I)^(2/3):MAX(J,I)=MAX(J,I)+R
440 FX(J,I)=0:PRINT"BEAM QUALITY":INPUTB
450 DX(J+7+0,I)=B
460 PRINT"SHIP'S WESS IS"INT(MAX(J,I)/.36+.5)/100
470 PTX=HDX(J+6+0,I)+HDX(J,I)+HDX(J+2+0,I)+HDX(J+3+0,I)
480 PTX=PTX+INT(HDX(J+5+0,I)/2+HDX(J+4+0,I)/4+R/4+(B+5)/10+HDX(J+0,I)+.5)
490 PRINT"SHIP'S POINT VALUE IS"PTX:PS=PS+PTX
500 PRINT"DO YOU WANT TO REVISE THIS SHIP"
510 INPUTC$
520 IF"Y"=MID$(C$,1,1)THENJ=J-1:PS=PS-PTX
530 J=J+1:GOTO220
540 CLS:PRINT"SUMMARY ORDER OF BATTLE"
550 PRINT"  ENER DRY BEAM SHLD LINC MEL TORP ARM"
560 FORJ=0TON5(1)
570 A=DX(J,I):B=DX(J+0,I):C=DX(J+2+0,I)
580 E=DX(J+3+0,I):F=DX(J+4+0,I):G=DX(J+5+0,I)
590 H=DX(J+6+0,I):K=DX(J+8+0,I)
600 PRINTJ+1;H;TAB(8);A;TAB(13);B;TAB(18);C;TAB(23);E;TAB(27);F;TAB(32);G;K
610 A=HDX(J,I):B=HDX(J+0,I):C=HDX(J+2+0,I)
620 E=HDX(J+3+0,I):F=HDX(J+4+0,I):G=HDX(J+5+0,I)
630 H=HDX(J+6+0,I)
640 PRINTTAB(3);H;TAB(8);A;TAB(13);B;TAB(18);C;TAB(23);E;TAB(27);F;TAB(32);G
650 #EXITJ
660 PRINT"":PRINT"MISSILES:":PRINT"DRANGE:"PX(I);PX(I+2);"RANGE:"PX(I+4)

```

```

670 PRINT "TORPEDOS:";PRINT "DAMAGE:"P%(I+6); "RANGE:"P%(I+8)
680 PRINT "TOTAL POINT VALUE="P5
690 PRINT "DO YOU WANT TO REVISE THIS SIDE":INPUT C$:IF "Y"=MID$(C$,1,1) THEN I=I-1
700 NEXT I
710 PRINT#-1,N5(0);","N5(1):FOR I=0TO1
720 FOR J=0TONS(I)
730 PRINT#-1,HDX(J,I);","HDX(J+Q,I);","HDX(J+2*Q,I);","HDX(J+3*Q,I);","HDX(J+4*Q
,J,I);","HDX(J+5*Q,I);","HEX(J+6*Q,I);","OX(J+7*Q,I);","OX(J+8*Q,I);","XZ(J,I);","
VZ(J,I);","WEZ(J,I)
740 NEXTJ:NEXTI
850 PRINT "CAN A SHIP BEAM OTHERS ON THE SAME SIDE"
860 BL=0:INPUTA$:IF MID$(A$,1,1)="y" THEN EL=1
880 TL=0:PRINT "ARE TRACTOR BEAMS PERMITTED":INPUTA$:IF MID$(A$,1,1)="Y" THEN TL=1
890 PRINT#-1,PL;","P%(0);","P%(1);","P%(2);","P%(3);","P%(4);","P%(5);","P%(6);","
,P%(7);","P%(8);","P%(9);","EL";","TL
900 PRINT "SCENARIO COMPLETE"
910 END
-----
1000 INPUT "ENTER NAME OF LAST SCENARIO ON TAPE";A$
1005 PRINT "PRESS PLAY"
1010 INPUT#-1,N$
1015 PRINT "SCENARIO:"N$
1020 INPUT#-1,N5(0),N5(1)
1030 FOR I=0TO1
1040 FOR J=0TONS(I)
1050 INPUT#-1,K,K,K,K,K,K,K,K,K,K,K
1060 NEXTJ:NEXTI
1070 INPUT#-1,K,K,K,K,K,K,K,K,K,K,K,K
1080 IF A$ON#GOTO1010:ELSE INPUT "PRESS STOP";K:GOTO110
2000 FOR K=0TO6 DX(J+K*Q,I)=OZ(J-1+K*Q,I):HDZ(J+K*Q,I)=HDZ(J-1+K*Q,I):NEXTK
2010 OZ(J+7*Q,I)=OZ(J-1+7*Q,I)
2020 OZ(J+8*Q,I)=OZ(J-1+8*Q,I)
2030 RETURN
3000 INPUT OZ(J+L*Q,I),HDZ(J+L*Q,I)
3010 HDZ(J+L*Q,I)=OZ(J+L*Q,I)-HDZ(J+L*Q,I)
3020 RETURN

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