

# STARCLASH II<sup>TM</sup>

## STEPHEN WALTON

A Strategy Game for Microcomputers  
IBM Personal Computer Version 1.0

Software and Manual  
by Stephen Walton

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## THE STORY SO FAR:

"I'm twice retired, man. What help do you think I can be to you?"

Your visitor draws himself up to his full height. He seems unfamiliar with the posture. "I'm sorry to bother you. I don't know that I like you. Help to *me* isn't the issue. But I am convinced, as are many others, that the Argolian Polity needs you, sir."

The last word rings as though he has not spoken it in years; you think you should make a small point of it. "A senator doesn't 'sir' a naval pensioner unless he's doing it for effect. I know you're one of the organizers of the war party, and you have some clear-cut gains to make if the contact with Savvis should be anything less than sweetness and light. I am very old, and the Polity already has what it considers an adequate Navy."

"Those buffoons! Admiral, I served at Tralimane."

"You?" You squint at him.

"I was seventeen. Gunner's mate fourth. I took enough heat and shrapnel to require a ninety percent regen, which I nearly didn't survive."

"You haven't mentioned your ship."

"*Meadwood*. I wasn't on the same side you were."

You nod. "Hukson commanding. Killed during the first hour of engagement. *Meadwood* fought on under Cairly, stood until our fourth assault."

"That's right," Senator Carlson says. "Fifteen minutes after we stopped shooting, the War of Unification was effectively over."

"It was *Venomous* we had to take out. But you'd been protecting her." You speak to the butlermobile: "John, the good brandy." Then you let it do its job.

The senator raises his glass with you in silent toast.

"I apologize for the greater part of my abruptness," you say. "Most people don't even remember Tralimane now—a credit to both sides, in some ways."

"In some ways," Carlson agrees. "Admiral, have you followed the present situation closely?"

"I know only what the public knows. We've invented—or re-invented—what we think was the Empire's faster-than-light drive. The quantum signature of a drive, while in normal space, is unmistakable and unique, transmitted at might-as-well-be infinite speed and detectable, we believe, to a range of at least 100 parsecs. Besides our own, here, there are drive-signatures at Savvis."

"Accurate enough, as far as it goes. But there's more. We can tell the mass, and presumably the fighting power, of a vessel from its drive signature. We can modify a drive signature to carry coded signals—a way of giving orders at a distance, though a ship in hyperspace remains undetectable and incommunicado, as far as we can tell."

"Logical developments, from what I've read."

The senator gives a stifled, hollow laugh. "And we've already made contact with Savvis."

"Contact? So soon?"

"The envoy was dispatched almost as soon as we saw there was FTL technology there. The sham debates since are something the voters will probably make us pay for. We lost the gamble. Our unarmed, unshielded ship was destroyed as soon as it entered normal space in the Savvis system."

"Who decided to send an unarmed, unshielded ship?"

"A three-fourths majority of the Senate of the Argolian Polity, in executive session."

"Did you vote in favor of that action?"

"I was opposed. At any rate, the event has happened. And now one of the native drive signatures at Savvis has disappeared. A warship may be headed here."

You tap the side of your brandy snifter for a moment, then ask, "How may I serve the Polity?"

When you'd won the war of Unification, something funny happened to senior officers' commissions, on both your side and the other. No one wanted you around, visible in a star system that finally had a single government; but no one wanted you completely unavailable either, in case of large-

scale rebellion against the new order. You and the others were removed from active duty but put into a special reserve category, on half pay, and susceptible to recall to active duty for life (or until certifiable senility). By now, there are damned few of you left.

The Navy has gone its own way, purged of combat commanders above the rank of lieutenant and left with little more than police missions and ceremonial duties. The current complement of flag officers is devoid of veterans of any war, the experienced personnel having left in disgust for civilian opportunities. Your own forced inactivity made you take on the administrative direction of a technology-transfer agency, which you carried out with some success, until running up against that organization's mandatory retirement age.

Suddenly you are on active duty—but not on active duty. Your commission is reactivated in executive session, and your position remains outside the chain of command. You serve as a confidential advisor to Carlson's Committee on Exploratory Technology, and to Senator Martin's Committee on the Military Establishment. There is no formal tie between the two. To those with less than executive clearance, you are a doddering fool with belated political ambitions; you wear civilian clothes.

But you are on hand when the ship from Savvis arrives. By accident you are helping both committees to inspect the new command center for FTL operations—ironically located off Tralimane—when the Savvisians come in.

Commanding the installation is one Admiral Glen Tomson, who was a desk-riding lieutenant commander during the War. His exec is a captain who had not even been born then.

Fortunately, information is coming from a very cool lieutenant who has leave to speak. His name is Manks; he later will die leading a two-ship rearguard action at Cabble.

“Single ship . . . First scans: composition, conventional alloys. Mass two hundred tons. Shields up, strength two-point-three . . . No emissions other than infrared, that unmodulated . . . Approach vector oh-point-nine-four-three to ecliptic . . . Normal-space velocity twenty-three kilometers per second . . .”

"Interceptor units launch," Tomson says calmly. "Stand at ten thousand kilometers from target."

"Secondary scans," Manks goes on. "Optical: origin apparently human . . . Other frequencies: pulse-modulated radio signal on two-meter band, content . . . indecipherable. Signal repeating with apparent period of forty-seven seconds . . ."

By then we are all watching the relayed optical. The ship from Savvis is a stubby cylinder, encrusted with gunports.

"Interceptor units hail target, using pulse modulation on two-meter band, prerecorded message Alpha," Tomson orders. To Manks: "Why are they giving us a radio message we can't understand?"

"No idea, sir. Interceptors approaching standing range confirm first scans . . ."

"What about drive-signature modulation?" you ask.

"Moment, sir." Manks mutters into his throat microphone. "Apparent signal imposed on drive signature since normal-space entry . . . Indecipherable . . . No apparent period . . ."

"Please note any apparent change in that modulation."

"Aye aye, sir."

That response startles you; but it is pleasant all the same. You turn to Tomson. "Are your intercepting units going in with shields in neutral?"

"Of course they are," he says. "That's doctrine."

Doctrine for dealing with half-starved would-be pirates, maybe, or speeders or emissions violators.

"Change in target's drive modulation," Manks says with his calming lack of excitement. "Indecipherable . . . Apparent period five-point-two seconds."

"Admiral," you say to Tomson as quietly as you can, "call back your interceptors or at least have them power their shields."

Tomson hesitates, begins to speak . . . suddenly it doesn't matter what he says.

"Interceptor Squadron Foxtrot hit," Manks drones. "Loss ninety-five percent . . . Interceptor Squadron Tango hit . . . Loss—"

"Interceptors," Tomson gasps, "fall back to one hundred thousand kilometers!"

"Interceptor Squadron Zulu hit," Manks goes on. "Loss ninety percent . . . Change in drive modulation. Indecipherable. Period one point six seconds. Optical—"

But we all see the flash of blinding white on the relay screens.

"Target configuration lost," Manks says as though nothing has happened. "Apparent debris . . . Dust on order of one micron average diameter . . . Radio signal ended . . . Drive modulation ended . . . Thermal disturbance dissipating . . ."

"Gentlemen," you say, "you may have a war on your hands."

"Then you're telling us you won't take the job." The speaker is Hornby, the wizened fellow who speaks with the deceptively leisurely accent of the Calnon region.

"You've misunderstood me," you say. "I've been recalled to active duty, and I will not refuse the job. I merely seek clarification of my mission."

"What could be clearer?" the President asks. "You assume command and you beat the hell out of Savvis." He lowers his tone. "And if you—we can't beat Savvis—no matter what, you defend Argol to the last clod of earth."

*Until the politicians sue for peace on any terms, you think to yourself.* "There is still a lack of clarity, sir. The briefings we've already had today share a common assumption—that of a short campaign involving only tactical problems. I believe that assumption to be short-sighted."

The President blinks at you. Hornby stares at you over his spectacles in such a way that you know you have his full attention.

You take a deep breath by way of windup. "We have one essential condition in common with the enemy at Savvis. It is that we know we are only fitfully reconstructing the technology of the old Human Region—the Empire. Records dating from before the Sadness give us one, minimum definition of the possible. When our scientists work in that direction, they know what *can* be done. That is an advantage that the Empire's own researchers never had, and look how much they did without it."

The President has his hands steeped before him on his desk. Hornby is lapsing into a get-on-with-it expression.

You decide to speed it up. "Item: The enemy at Savvis almost certainly knows as much as we do about the Empire's technical attainments, and therefore knows what either we or they can achieve with sufficient effort.

"Item: Travel time between Argol and Savvis, let me remind you, is four full cycles. That effective speed for travel via hyperspace holds for both us and the Savvisians. We believe that the performance of Empire vessels was no better. No quick conclusion is likely, not until either Savvis or Argol wants to surrender.

"Item: We have a current effective advantage in warship units of five to two over Savvis. Were we to order all five of our units now on a direct attack on Savvis, they could easily be outnumbered there, by the time they arrive, by new units produced since we launched our attack.

"Item: While tactical situations universally favor concentration of force, and division of enemy forces is the same thing, a true strategic engagement, more often than not, will favor the indirect approach.

"Item: It should be recognized that loss of the Argol star system need not necessarily mean that the Argolian cause is lost. It could come to this, that—"

"Hold on there!" Hornby shouts. "You started talking about a long campaign. Now you're talking about surrendering Argol itself. Next—"

You simply shout louder: service training. "I am talking about winning the war, Mr. Hornby. If we are to win the war, we must consider as possibilities a great number of unpleasantnesses. That does not mean that we wish them to come to pass."

Hornby squirms himself deeper into his chair, but is silent.

You continue at lower amplitude. "Argol is at present our enemy's sole target and goal. We need to provide ourselves with a greater base of resources and our enemy with a greater selection of possible targets—enough to confuse him, we may hope.

“Item: We are reasonably close to re-inventing the Imperial device known as the World-Egg, a complex of self-reproducing machines that can turn a raw star system into a producing industrial base in the minimum amount of time. We need the World-Egg *now*.

“Conclusions: I cannot guarantee you victory. I *will* resign my commission rather than try to cope with a half-assed situation. I anticipate a grand strategy of maximum deployment rather than of immediate engagement. If you give me the tools, I will give you either defeat or the shortest war that will yield an Argolian victory.”

The President unsteeples his hands. “Admiral, your assessment agrees with the one I’ve been leaning toward, if not with Mr. Hornby’s. And you’ve tipped me into your camp. Your commission is permanent, and will now be public, for the duration. I would have been disappointed had the Victor of Talimane nothing to offer—as would the popular imagination, no matter that you think you’ve been forgotten.

“The World-Egg work has already been accelerated, despite Mr. Hornby’s principled objections. We expect success in a matter of weeks.

“I know what you think of the readiness of the Polity Navy since unification. I tend to agree with you, in light of the present threat. You have your choice of officers from the active and half-pay lists to manage the training and recruiting commands.”

“I’ll also want some choice on the line commanders,” you say.

“You’ll have that, of course, though you’ll have to find ways to make use of the time-servers—maybe some of those will surprise you. Your own command will be strategic. We are already constructing a headquarters on the fringe of the system—”

“With a low-captive-mass FTL drive which, appropriately modulated, will be able to transmit orders yet will remain unlocalizable to the enemy.”

“Exactly, Admiral. And with the best in display technology that we can provide. You will have World-Eggs to deploy. We have one other, ah, tool for you. Mr. Hornby?”



That gentleman snorts and stirs in his chair. "It's a *game*, Admiral. We have only recently discovered how important games were, as devices for training both reflexes and thinking, to the Empire. This game is of our own devising, based on both the ancient models and the present situation. Its code name is 'STARCLASH II.' "

"I certainly welcome any modeling device that will heighten the acuity of my forces," you say, not asking what was wrong with STARCLASH I. "I will want to spend some time examining the game's assumptions before I allow my staff to spend too much time with it."

"Ah," says Hornby. "One of the virtues of the game is the variability of its assumptions."

"Then we'll have to see if it's too general to be worthwhile." You look to the President again. "Sir, do I understand correctly that you are placing me in supreme command and setting aside the Joint Chiefs of Staff as currently constituted?"

"You do. The necessary legislation will follow in the morning."

"Very well, sir. I will await your confirming signal before assuming command." You rise from your chair.

"Understood. Good evening, Admiral, and thank you."

"Good evening, sir. Thank *you*."

Full admirals, old or not, do not cut capers in the halls of the Executive Residence. You want to. You can hardly help it. You have your dream command, your fantasy command: strategic control of a starfaring system at war.

Now all you have to do is win.

## THE MANUAL

### INTRODUCTION

Greetings—and welcome to the micro-universe of STARCLASH II!

Galactic empires begin at home. If you can't conquer the pipsqueak down the block, you'd better hang up your dreams of dominating a billion suns. STARCLASH II is going to put you on your mettle. You'll have a single opponent and a limited volume of space to deal with, but that doesn't mean that victory will come easily. You'll have to do some real thinking to put your forces where and *when* they'll be most effective. Your motor reflexes won't be challenged (for that training, see John Chenault's SNAKE!, available from Baen Software) but your sense of timing *will* be put to the test. You will also need some luck. Good luck.

NOTICE: Some persons, although well qualified for other useful roles within the Space Services, cannot deal with the emotional stress of strategic command, even on a simulation level. If you suspect you may be one of those persons, you may return your STARCLASH II package, with the diskette container UNOPENED, to your base store for full credit. You should be aware, however, that such action will be recorded and that your fitness rating and Promotion Path within the Service may be affected:

We will now proceed with the basics.

STARCLASH II is a conflict-simulation game for a single human player against the program, or for two humans against each other. The playing space may be two-dimensional or three-dimensional (with several levels of complexity), at your option. You may choose to play a simple game with few star systems (ideal for beginners or when time is limited), or a more complex game with more star systems. You or your opponent may receive a handicap in the form of extra star systems possessed at the outset. To win, you must hold all the star systems in the game *and* you must destroy ALL enemy units.

Remember these essential points:

\* Victory must be total—you must hold ALL star systems and destroy ALL enemy units (no wimpy, compromised “victory conditions” here!).

\* Units sent into hyperspace are COMPLETELY INCOMMUNICADO until they reach their destination(s). They can't be called back or redirected. This is sometimes known as having a destiny (or a rendezvous therewith).

\* Once a star system has once been occupied, it can never be vacant again. Someone owns it, and it will produce at least one new unit (essential warship) for its owner each cycle.

\* Home systems are special. When either side loses or recaptures its home system, it can make a real difference in the game, a difference far greater than that made by the loss or recovery of a run-of-the-mill star system (details below).

\* Whenever units of both sides are present at the same star system, battle *must* result. In combat, concentration of force is important (details below).

\* When a number of units leaves a star system, that is public information—common knowledge. Where they are going and when they will arrive is information known only to their own side.

## **HARDWARE AND LOADING**

STARCLASH II requires an IBM Personal Computer (or closely compatible alternative system) with at least 128 kilobytes of user memory, a display 80 characters wide, and one disk drive. Your STARCLASH II diskette does *not* contain a copy of your Disk Operating System, and so can *not* be used to boot your computer; use any DOS diskette for that purpose.

STARCLASH II is a single program file, called CLASH.EXE. It may be copied for legitimate backup purposes. You begin running the program by typing

CLASH

and pressing the Enter key, if your STARCLASH II diskette is in the “current” disk drive—the one identified by DOS's command prompt (such as A>). Otherwise, you start the program by typing

d:CLASH

and pressing the Enter key, where d is the letter that identifies the drive into which you have put your STARCLASH II diskette.

You'll know you have succeeded at beginning program execution when you see the game's title screen with copyright notice. At this point, you should make sure that the sentence that says it should be highlighted *is* highlighted, and adjust your monitor if necessary. Any keystroke takes you into the game itself.

## OPERATION

### Setup and Options

The program needs basic information about the nature and scope of the game you wish to play. You will be asked:

*How many star systems in the game?* Any number from 2 to 20 is acceptable. We like to use:

5 for a short game (also good for beginners)

10-12 for a more complex game (can take a single player an hour or more)

20 for a grand-scale, fully-developable game (can take a single player well over an hour).

*Depth levels (1-58 or Enter for 58)?* Your response determines the three-dimensional complexity of the space in which the game's star systems exist. Possible responses include:

1 for a two-dimensional (flat) playing space—may be preferable for beginners

2 to limit the third dimension in the playing space to two distinct planes

3 to limit the third dimension in the playing space to three distinct planes

Etc.

Enter (or 58) to allow star systems' positions in the third dimension of the playing space to vary as widely as possible.

*How many human players—one or two?* (i.e., play against the program or against another flesh-and-blood opponent.)

*Names for the two sides in the game.* Any two distinct names up to 20 characters long will be accepted.

*Extra star systems to be given each side at the outset.* This is the handicapping system. Each side *always* gets a home system; giving a side additional systems is a way of giving the *other* side a handicap. The number of systems given can be any number up to the number of systems not already accounted for by home systems and extra systems already granted. Note that *both* sides can be allotted extra systems; we find that giving *each* side one or two extra systems can add challenge to medium-sized or large games.

The rest of the setup is carried out by the program: star systems are positioned within the Sector (the configuration is different each game), home systems and extra systems (if any) are identified, and a table of transit times between systems is built as quickly as possible. At this time, initial productivities and initial strengths are assigned to the star systems that are occupied.

Setup ends with the instruction to you to *Press a key (S to stop) . . .* You are given the opportunity to stop because you may wish to save the game's initial conditions. All aspects of saving and loading games are discussed in a later section. Press any key (other than Shift, Ctrl, Alt, 5 on the numeric pad or one of the Lock keys) and . . .

### Game Time and Game Rhythm

. . . the game goes on from here until it has been won, or until it is stopped. The unit of time in the game is the Cycle, roughly comparable to a Terran month. The game is formalized (and to some degree unrealistic) inasmuch as it allows each side only one set of actions per cycle.

What happens is this: You formulate and record your movement orders for the coming cycle. At the same time, your opponent formulates and records his/hers/its. When all movement orders are complete, the game-time clock ticks over into the next cycle and those orders are executed. (The rest of what occurs at this point is discussed below, under "The Resolution Phase.")

In the one-human-player game, the program as your opponent is quite literally working out its movement orders at the

same time you are working out yours. It will happen very rarely that you will finish first and see an "I'm still thinking" message—which will not remain long on the screen.

In a game with two human players, the simultaneity of devising and recording movement orders is necessarily simulated. Which is to say, you have to take turns. One person turns her/his back while the other works out movement orders; then switch. You could play an "open" game, each player seeing all the details of the other's movement orders, but we think the practice might give rise to bad habits. *How* you enforce back-turning is beyond the responsibilities of the program. (If enough people want it, we will produce a version for two humans at separate computers, connected by direct wire or over phone lines.)

### Displays and Commands

If you are reading this while at your computer and running STARCLASH II, just *look* and *try things*. In any case, none of what follows requires memorization.

The **General Report** appears at the beginning of your turn and can be recalled, assuming no unfinished business, with a press of the **F1** key. It includes several sub-displays:

The Situation Report: Who owns how many star systems and how much net productivity, and what percentages those figures work out to. Who has how many units in hyperspace, how many deployable (not in hyperspace) units, how many *in toto* and how many altogether with next cycle's production of new units taken into account—all with percentages for purposes of comparison.

The Micro-Tank: A quick view of the Sector, showing the star systems by their initials, indicating ownership by a scheme you'll soon get to know: your systems are highlighted, while the enemy's are shown in reverse video (black on white); the unexplored are displayed with normal attributes. Note, however, that the Micro-Tank may not be immune to eclipsing—see discussion of the **Display Tank** below.

The Contact List: Any star systems where *both* sides still have units in place—this will occur when combat has taken place but has not been decisive.

The Economics Report: All star systems in the game are listed—here again coded with video attributes to indicate ownership: bright, yours; reverse, theirs; normal, no one's. For each occupied system, a number is given, telling you the number of new units it will produce for its owner next cycle. A heart symbol indicates *your* home system, while a five-sided "house" symbol indicates the enemy's home system. Home systems have special value within the game.

The Commands: All the function keys, **F1** through **F10**, are recognized as commands. This display is the menu that explains them. This menu, or one like it, appears in all displays (except Dispositions, which returns you directly to the General Report).

The **Display Tank** is accessed by pressing **F2**. We call it the "tank" because it provides three-dimensional information about the state of the Sector. When the tank is on the screen, the four arrow keys on the numeric keypad are enabled, letting you rotate the sector through different viewing planes in order to obtain a better sense of the three-dimensional situation.

*Interpreting the tank:* Each star system is indicated by its (unique) initial, with video attribute defining ownership (bright, yours; reverse, theirs; normal, no one's). The number to the *left* of the initial is the number of units *you* have at that star system, while the number to the *right* of the initial is the number of units *your opponent* has at that star system. As you give movement orders for units to leave a system, the number shown at that system will decrease, so that the number *still available* is the number displayed. (Don't worry—these developments are *not* revealed to your opponent.)

*Arrow keys:* With the Display Tank on the screen, you can use the left-, right-, up- and down-arrow keys, found on the numeric keypad, to rotate the display and better comprehend the Sector's three-dimensionality. Just watch out for eclipsing (see below).

*Tank options:* Pressing **F2** while the Display Tank is on

the screen gives you access to two display options peculiar to the tank. They are referred to as toggles because a second use of either restores the original state.

**D** for depth: Produces (or removes) a display in which star-system initials are replaced by graphics characters indicating relative distance of the systems in the sector's third dimension. No units-present numbers are produced with this display.

**E** for eclipsing: If you have used the arrow keys to rotate the tank display, you may have caused the information for one star system to obscure all or part of the information for another. This option reverses the order in which star systems are put into the tank, thus reversing obscuration.

You get **System Detail** by pressing **F3**, then typing a letter that corresponds to a star system within the current game (others will be ignored). You then see:

The system's name, with its video attribute coded to indicate present ownership (you know the scheme by now).

If the system is either side's home system, that fact is displayed.

Present strengths of both sides at the system (NOT reflecting any movement orders you have issued this cycle for your units at the system).

The other star systems in the game, ranked according to their travel times from the system in question and coded (as usual) with video attributes indicating current ownership.

The average travel time between the system in question and the other star systems in the game. The lower the number, the more "central" the star system is. (A relatively central star system can have strategic importance beyond its mere productivity.)

Display **Units in Hyperspace** by pressing **F4**. You then see the origin, destination, number of units and arrival cycle for each group of units that you currently have in transit—as well as their total number. You also see a total of the enemy's units now under way (where they're going is not known).



**Movement—F5** is a one-line display that is compatible with (will not overwrite) most other displays. More importantly, it's what you use to send your units to other star systems. It requires three inputs:

- 1) The number of units to be sent. Since the program cannot predict the number of digits in this number (as many as three, late in a large game), it requires you to press the Enter key to signify the end of the number.

- 2) The star system those units are leaving. Press the letter key for that system's (unique) initial.

- 3) The star system you want those units to go to. Again, press the letter key for that system's (unique) initial.

*If you have the number of units specified at the departure star system, you'll be told when they will arrive at their destination. Error messages result from such problems as: insufficient (or no) units at source system, source and destination the same system, attempt to move a group of zero units. If you're in the midst of a movement order and suddenly think better of it, you can get out by making the number of units zero, making the source system one where you have fewer units than the number specified (a system where you have no units, perhaps), or pressing the same letter key for both source and destination systems.*

The rub is that you must complete all three required inputs, in any case. (This is to train you to think first.)

**Ranging—F6**—is another one-line display that can live with the full-screen displays. It expects two valid star-system initials as input, and shows you the travel time between those systems.

**Dispositions—F7**—recapitulates the movement orders you've issued this cycle (to be executed at the beginning of the next cycle)—and lets you take them back, if you want. Each movement is shown, and you either confirm it (keep it) or not (scratch it). From this display, you go directly back to the General Report.

**Travel Times—F8**—is a matrix showing the effective distances between all star systems in the game. Systems are represented by their initials, and, familiarly, coded with video attributes to indicate current ownership.

**Intelligence—F9**—provides a considered estimate of your chances of winning the game. Since intelligence agencies are notoriously riddled with moles, you cannot be sure how reliable this estimate is.

**{Done}—F10**—is not a display, but your signal that you're through giving movement orders for this cycle. You get one chance to reconsider; if you say you're not *really* done, you return to the General Report.

#### The Resolution Phase

Once you and your opponent have finished giving movement orders, game time enters a new cycle and the Resolution Phase begins. It takes these discrete stages:

**Departures:** Units leaving star systems are noted—though not their destinations or arrival cycles.

**New Units:** Each star system that is not unexplored produces new units for its current owner. *After* producing new units for the current cycle, each occupied system stands a 10 percent chance of a one-unit increase in productivity for *next* cycle (this is effectively a reward for continuity of ownership).

**Arrivals:** Units in transit pop out of hyperspace at their destination star systems. *Note well* that groups of units that left at different cycles can all *arrive* simultaneously.

**Battle:** At each star system where both sides now have units in place, combat must follow. During a battle, there is no opportunity to withdraw (that option results only from an indecisive combat). The losses for each side are randomly proportional to the *other* side's strength. When the attacker eliminates the defender's forces, the attacker takes over the star system—but its productivity is reduced (approx-

imately halved). Home systems have special import, because of their Communications, Command and Control value:

1) When a side *loses* its home system, the productivities of *all* its other star systems (if any) are approximately halved.

2) When a side *recaptures* its home system, the productivities of *all* its other star systems (if any) are approximately doubled.

**End-of-game check:** If either side's total of units is zero, the game is over and the other side wins. (If both sides wind up with zero units, the game is over and *nobody* wins; we have allowed for the possibility, though we have yet to see it happen.) As long as both sides have one or more units apiece, the game goes on; you can at this time, however, save it for resumed play later.

#### Leaving the Program

You can exit the program under one of two conditions: with the current game finished or unfinished.

If the game is finished, press any key to clear the final-situation display. You are asked if you want to play again; press **N** for "no" and then, after just one more display and a keystroke of your choice, you're out to DOS.

If the game is unfinished, press **S** when prompted for a keystroke after the Resolution Phase. Either save the game or don't (see below), and press **N** for "no" when asked if you want to resume play. The rest of the procedure is as for a finished game.

### **SAVING AND LOADING GAMES**

Since a full-blown STARCLASH II game can take a while—but you may have to get up in the morning anyway—it's essential to be able to save an unfinished game for resumed play at a more convenient time.

A game may be saved only immediately after a cycle's Resolution Phase. Press **S** to STOP the game, and answer **Y**

for “yes” to the “save it?” question. The program then assigns a filename—of the form CLASH $n$ .GAM, where  $n$  is a positive integer—for the game, and asks you to provide a one-line identifying header. That header may include the date, participants or anything you please—or you can skip it by pressing Enter alone. The CLASH $n$ .GAM file is written to disk on the *current* drive (if the diskette there is write-protected or full, shame on you), and you can then immediately resume playing the game, if you wish.

The load-a-game option is available when you start the program, or you answer “yes” to the “play again?” question. Loading always looks for game files on the *current* drive. There are two ways to specify the game file to load:

1. Provide the integer in its filename—the  $n$  in CLASH $n$ .GAM, or
2. Let the program scan through the CLASH $n$ .GAM files, showing you the identifying one-line header for each one found and asking if that’s the game you want (which is the reason for putting some salient information into that header). Scanning is limited to nine (9) game files; CLASH10.GAM and above must be loaded by specifying the integer—or by first using DOS facilities to rename them with lower numbers.

The save and load capabilities of STARCLASH II have uses that go beyond the mere ability to interrupt a game. They let you save a situation, either at the start of a game or in midgame, to play out more than once, trying a different strategic approach each time. If you have a friend who’s also a STARCLASH II player, you can set up “duplicate” competitions—each playing out his or her own style of game against the program from the same set of initial conditions, to see who can win in fewest cycles (or hold out longest in an unwinnable situation).

If you are willing to learn a little bit about the format of CLASH $n$ .GAM files, which treated in more detail below, and know how to use a text editor, you can set up arbitrary game situations analogous to chess problems.

## MISCELLANEOUS

**Randomization** has been used with discretion; its effects are limited to these:

1. Locations of star systems within the Sector.
2. Determination of each star system's initial productive capacity.
3. Selection of home systems, and of extra systems when applicable.
4. Determination of initial strengths at star systems occupied at the beginning of the game.
5. Increases in production capacities of star systems.
6. Combat resolution: the enemy's losses are *randomly* proportional to your strength, and vice versa.
7. ??? The way the program behaves when it is a player???

The program, when serving as your opponent, partakes but sparingly of random numbers. Part of the challenge offered you is that of unravelling the alien logic it uses.

**Controlling the randomizer:** The random-number generator is seeded from the time as known to DOS. If you want to give the generator the same seed every time (this could be relevant in the duplicate-play situations mentioned above), you will have to invoke CLASH.EXE by means of an AUTOEXEC.BAT file, which should contain only **CLASH**.

Note well, however, that human-player actions will soon affect program-player considerations, so that even if the particular series of random numbers used does not change, games will still diverge widely and rapidly.

**Mathematical background:** To the truly serious STARCLASH II player we heartily commend Frederick William Lanchester's essay on "Mathematics in Warfare" (in *The World of Mathematics*, vol. iv; New York: Simon & Schuster, 1956 [also in paperback]). The principles Lanchester elaborates are clearly illustrated in the combat resolution method of STARCLASH II (though he is in no way to blame for the use of randomization there). They are worth thinking about beyond the STARCLASH II context.

**Hints:** There's something you can do, as a strategic planner, that the program, acting as your opponent, does *not* know

how to do. What is it? How can you exploit the program's deficiency? . . . Does the program know that no more than 999 units of the same drive design can be present at one star system at one time? (If you have the chance to exploit this one, let us know about it.)

**Division of command:** If you have an excess of willing STARCLASH II players, try setting up areas of control or Theatres of Operation in which each is the supreme commander. If you do not specify a single over-commander, one who definitively resolves all disputes, you can watch your efforts slide into chaos.

## MODIFYING GAME-SAVE FILES

The CLASHn.GAM files in which unfinished games are saved are sequential files, with varying numbers of lines of varying lengths. While you *could* create game situations from scratch, we suggest that you begin by editing copies of real games.

We do not intend to reveal all the inner secrets of the CLASHn.GAM files, but we'll show you enough to let you modify strengths and productivities, and even move star systems around. Here's the format on a line-by-line basis:

*Your identifying header*

*Four values*

*Two values*

A *loop*, repeated as many times as there are star systems in the game:

*Four values*—of these, the ones you may want to change are 1. Ownership of the system. -1 means unexplored, 0 means first player, 1 means second player (or program); 2. The system's current productivity.

*One value*—the first player's current strength at the system

*One value*—the second player's (or the program's) current strength at the system.

*Two values*—the first is the system's x-coordinate

*Two values*—the first is the system's y-coordinate

*Two values*—the first is the system's z-coordinate

*An inner loop*, repeated as many times as there are star systems in the game:

*One value*—travel time in cycles between the outer-loop system and the inner-loop system (zero when they are identical)

*A loop*, repeated twice (once for each player):

*A string*—the player's name or that of her/his empire

*Two values*—the player's home system and his/her total number of systems owned

*Three values*

*Three values*

*Three values*

*Three values*

*Two values*

*An inner loop*, repeated as many times as the player has groups of units in hyperspace (and not at all if none)

*One value*

*One value*

*One value*

*One value*

*One value*

That's it—but many cautions apply. The statistics in the "SITUATION" section of the **General Report** will probably be wrong until you've completed one new cycle of play. In setting up a game, the program makes sure that there will be no eclipsing in the display that the **Display Tank** starts up with; if you move star systems, eclipsing may result. As you modify values other than the ones described above, results will become increasingly unpredictable.

The most important caution is this: when you start modifying CLASHn.GAM files, YOU ARE ON YOUR OWN. Don't blame us if you don't get the results you want, or if your mutant file bombs the program—and don't call us for help. Why are we so hard-hearted about this? Because providing support for every tinkerer would require us to charge a lot more for STARCLASH II than we do. We hope you understand.

## PRODUCT IMPROVEMENT

We want to make STARCLASH II the best possible product, and welcome player suggestions. More specifically, we will provide an honorarium in the form of money or software for each

- User suggestion that is incorporated into a later release of STARCLASH II
- Legitimate, reproducible bug reported.

Earliest postmark wins, in each case. Let us hear from you.