

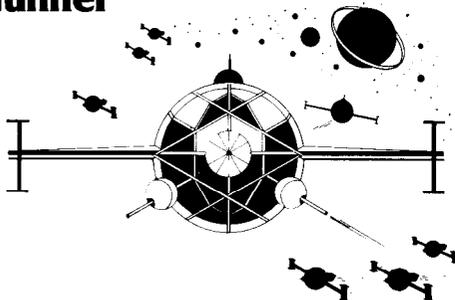
Instant Software Inc.

Peterborough, N.H. 03458 603-924-7296

PROGRAM DOCUMENTATION

Designed
for use on
TRS-80*
16K
LEVEL II

Ball Turret Gunner



0051R

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Peterborough NH 03458 USA

TRS-80 LOADING

Unless **otherwise** indicated on the labels, Level I will be on one side of the cassette and Level II on the other. Make sure that your system is on, the recorder is plugged in, and the tape is rewound. Punch out the tabs on the cassette to prevent accidental erasure. Now insert the tape into your recorder and press PLAY.

Type NEW and press ENTER (E). Check the available memory by typing P.M.(E) for Level I or ?MEM(E) for Level II. Now press PLAY on the recorder and type CLOAD(E). In about ten seconds two asterisks should appear on your Screen, with the right-hand one blinking. If it doesn't blink, you're not loading.

The TRS-80 is very sensitive to audio levels. If your program doesn't load, rewind the tape, adjust the volume level, and the loading sequence above.

After each load, run a memory check and note how much memory the program uses.

Should you be unable to load, check the cassette with another system. If it's still no go, return it to:

Instant Software Miseries
Peterborough NH 03458

We'll check to see whether it was the cassette or your system that was awry and get you a replacement.

DISCLAIMER

Nothing in this world is completely perfect, including this program. I say this despite the yeoman efforts of the programmer who originally wrote and debugged it and the people in the Instant Software lab who worked far into the New Hampshire nights, all toward providing you with the best possible program.

Please enjoy it. If you come up with any improvements, you should let me know so I can pass along your ideas to other users.

Please note that there is no warranty expressed or implied that this program is going to do anything other than load and work. We don't guarantee that you will enjoy the game programs, that you will make or save money with business programs, or learn anything from educational programs. We don't guarantee that you will lose weight with a dieting program or avoid disasters with a biorhythm program. But if any program causes suffering (other than acute aggravation) or misfortune, we want to hear about it by mail, not through your lawyer. You are entirely on your own in using the programs.

If you run into problems while using a program, you can communicate with us preferably by mail, and we'll try to help out. If a problem turns out to be commonplace, we'll put the update information in MICROCOMPUTING. You are supposed to read MICROCOMPUTING anyway.

Wayne Green

Ball Turret Gunner

Greetings from Uncle Wayne!

I am happy to inform you that you have been inducted into the Ball Turret Gunner Service. As a member of this elite group, you will have the duty and pleasure (we hope) of destroying the Exxonator Class light fighters (code name: Gnat) of the Petro Resource Conglomerate. Your weapon is the LW-1417 Type B Strategic Laser Weapon, commonly referred to as the Stratoblazer.

Read your orders carefully, and remember, the Solar Galactic Authority is depending on you.

Sincerely,
Uncle Wayne

Loading Instructions

The first program on side A of the tape is the title page (file name: A). The next one is the Ball Turret Gunner (BTG) program, which includes several pages of instructions (file name: B).

Because the BTG package includes some unique programming and is written in machine language, the loading routine is slightly different from the standard Level II CLOAD routine.

When you first turn on your computer, type in the number 19430 in response to MEMORY SIZE? This will reserve space in memory for the machine-language program.

Next, type CLOAD, or CLOAD"B" if you want to skip the title-page program, and press ENTER. DO NOT TURN OFF THE

RECORDER. The instructions will be loaded and displayed in sequential order. They will be shown only once, so read them carefully. You won't be able to stop the program and reread them once the game has started.

After you've gone through all the instructions, you'll see the READY signal on the screen. Type RUN, and you will be able to start the game. Type in your last name and select an outfit to ship out with (enter the first letter of the outfit's name). It will now be you against the Gnat light fighters.

Side B of the program tape has two recordings of the veteran's version of the program (i.e., without the on-screen instructions).

The BTG package includes programming for optional sound effects. When the screen says "YOUR PROPER LAST NAME, SOLDIER", remove the program cassette from the recorder. Take the earphone that came with your recorder, or any earphone with the right-sized plug, and insert it into the EAR jack. Insert the large gray plug into the AUX jack and the dummy plug into the MIC jack. Reach into the recorder and push back the interlock switch, located in the left rear corner of the cassette compartment. Then push down both the RECORD and PLAY buttons. The recorder is now on, and the spindles should start turning. When you use the program, you should be able to hear the sound effects through the earphone.

A simpler method, and one that will allow more people to hear the sounds, is to use a speaker/amplifier (e.g., Radio Shack part #277-1008 or the equivalent). Just connect the large gray plug to the speaker/amplifier, and adjust the volume for comfortable listening.

Introduction

BTG is a game of strategy and reaction. It tests your skill as the operator of a Stratoblazer versus the enemy pilots. Not only will you have to fight the enemy, but, depending on which outfit you choose, your equipment may malfunction or break down.

Operating the Stratoblazer is very simple. At the start of the game, you will be shown a view of space. Pressing the D key will activate the Hindsight Director and show you the direction of an incoming target. You position your turret by using the arrow keys on your keyboard to line up the cross of your gunsight on the target. The Gnat fighter will constantly jump around in your sights. Your Targeting Computer will tell you when to fire. Pressing F will fire your Stratoblazer. If you miss, you must wait for your weapon to recharge. If you destroy the target, you can request a transfer to another outfit or continue with the mission.

Of course, this is the theory of operation. In actual practice certain complications set in.

The Console

The Stratoblazer is controlled from your keyboard with these keys:

Arrows (4) -These control the turret motion. The turret can move horizontally 0-360 degrees, vertically -30 to 60 degrees, and diagonally.

Brake Bar (space bar) — Hitting the brake bar stops all turret motion.

D— This key activates the Hindsight Director. The arrows are displayed only momentarily.

F-This fires the LW-1417 Stratoblazer.

N -After scoring a kill, you can request a transfer to another outfit by pressing this key.

E— If you are unable to destroy an approaching Gnat fighter, you can warp your ship out of the combat area by pressing this key. This action will abort your search-and-destroy mission. (Recommended only for the nonambitious.)

Below the target display is your data panel, which will keep you informed of the status of your weapon. The panel includes:

Gun Tally — the number of your kills.

Elevation — the vertical coordinate of your gun position.

Target Range-tells you how far away your target is and its approximate incoming speed.

Rotation -the horizontal coordinate of your gun position.

Gunner Rating — You start with a rating of zero and go up in rank as your proficiency with the Stratoblazer increases.

Destination — the name of your current combat area.

Mission Priority — a measure of the potential danger of fighting in any particular combat area; the higher the number, the greater the danger.

Charge Indicator — the most important instrument on your panel. It must say FIRE READY before the weapon will fire. Pressing the fire key while WEAPON CHARGING is displayed will only lengthen the charging cycle.

Game Strategy

Following is a list of rules, facts, hints, and tips that may help you survive your first couple of missions. This information has been obtained from your fellow gunners at the cost of many a lost Solar Galactic Authority ship.

The MP indicates the risk involved in tackling a particular target. An MP of less than 10 is worth little. A target with an MP of 50 or more may be impossible to destroy. It is usually good strategy to press N after a low MP battle, and always good strategy to keep one finger on E and one eye on the Target Range during a high-MP battle.

Pressing the SHIFT/@ keys as soon as a target appears is helpful, but it's cheating. It will freeze the action and give you time to study the Destination and Mission Priority indicators at your leisure. To continue the game, press any key.

Pressing the Evasive Action (E) key will reduce your rating by one point. However, your commanding officer will reduce your rating in the computer's records by ten points. The outright destruction of your ship will cost you one-third of your rating. The Gunner Rating function and reduction formulae work in such a way that it is to your advantage, when the choice is evasion or destruction, to evade when your rating is higher than 22 and allow destruction of your ship at lower ratings.

Requesting a transfer to a new outfit will cost you a rating reduction of four. If, however, your goal is high-priority targets and a quick gain in ratings, then asking for a new outfit, after getting a kill in a disappointing destination, may be what you need. Finally, it is common to request a new outfit, return home for reassignment, and then ship out with the same crew.

Each outfit tends to draw certain combat areas. Each combat area has a particular range for the MP and a different minimum detection range (MDR), depending on interstellar dust, gases, and radiation. Here is a list of the first and second most likely destinations:

	Dest. 1	MDR	MP	Dest. 2	MDR	MP
Tigers	Krude	5000	16-33	Multigrad	3000	31-66
Giants	Pox	7000	14-31	Hack	400	35-55
Misfits	Hex	80000	36-80	Wretch	8000	4-9
Guys	Pax	20700	17-38	Wisp	2000	10-18
Boys	Local	2000	3-3	Pherie	70000	5-12

(MDR is listed in miles)

Note: There is another destination not listed by the Solar Galactic Authority. It has no name and is a certified suicide run. Finally, any outfit may be sent to any destination. If you find that the local Gnat fighters at a particular destination are more than your equipment can handle, then evasion is suggested.

The character of each outfit and its equipment is distinctive and deserves some comment:

Brucie's Boys is basically a training outfit. The Boys usually face very easy duty and provide lots of turret time in which the beginner can adjust to the use of the Stratoblazer console. The equipment sent to Pherie is very good. The Gnat fighters encountered in Local space are just lost enemy squadrons, which usually drift in rather than attack.

Gentry's Good Guys is a low-key, laid-back experience; the stakes are not too high, and the time is not too short. The brief recharge time that the Good Guys enjoy makes it practical to take pot shots at incoming fighters.

Mannard's Misfits can be a complete bore or cause cardiac arrest. Hex, which is the most frequent Misfit assignment, is one of the most dangerous of the destinations. Although the Misfits get reasonably lengthy fire advice, the Stratoblazer's recharge time can be frustratingly long, and the Gnat fighter may be too fast for the turret.

Hart's Giants is for the reflex-oriented. The Giants do not normally face aggressive fighters, but their equipment is the pits. The fire advice approaches the limits of human reaction time, and the Stratoblazer could grow a beard during recharge.

Tanner's Tigers is for the insane. It is accepted practice for the Tigers to ignore the fire advice (which is worthless in their computers) and the charging indicator (which only tempts their trigger fingers). The Tigers simply fire once when the fighter is first centered in their sights and again each time its size appears to increase. The Tigers hold the record for targets hit at a distance of less than 100 miles. Last-minute evasion is also common.

The Gunner Rating System is somewhat complicated. Your commanding officer may, because of evasion maneuvers or the ship's destruction, decrease your rating in the computer files. These decreases will not appear in the on-screen Gunner Rating but will be stored in an accumulator file and must be worked off before you can get an on-screen rating increase. For example, if you had a Gunner Rating of 12 and, because of some silly little mistake, you vaporized your ship and crew, you would lose one-third of your Gunner Rating. Your on-screen rating would be 12, but you would have to work off the four lost points before you could increase your rating.

For every Gnat fighter destroyed, you receive a rating increase. If you have a large rating or gun tally, you get less of an increase. If you have a high MP target, or if you ship out with a tough outfit, You receive more of an increase.

Regardless of what your destinations have been, how many Gnat fighters you've destroyed, or what your rating was ten minutes ago, it's the rating you resign with that tells the story. Every time you ship out, you risk what you have.

As an aid to new recruits, this program may be used for training purposes by deleting line 105, which will slow the game and lock on the Hindsight Director arrows.

SOFTWARE OPPORTUNITIES

Anyone interested in writing software for fun and profit should send for our instruction sheet: "Dear Programmer." This describes, step by step, the process used by Instant Software for producing these programs. In addition to being able to make rather remarkable money as an author of a program, there are also opportunities to work on a freelance basis (at home) evaluating programs or converting them from one microcomputer system to another.

If you are thinking in terms of distributing your own programs, you can do worse than find out the benefits of having Instant Software do this job for you. Write to: "Selling Your Software The Easy Way."

Instant Software is looking for programs to publish and distribute-business programs, games, home programs, educational programs, scientific programs, etc. For more information, please write to Instant Software, Peterborough NH 03458.

CASSETTE RECORDER MAINTENANCE

Often when you have trouble loading a program, it's not the fault of the tape or your computer system. It may be a problem with your cassette recorder. The staff at Instant Software use a large variety of cassette recorders eight hours a day, five days a week. To insure that the recorders will keep up with the demands of our work load, they are subjected to a rigorous maintenance routine.

As you run a tape in any recorder, a particle of oxide may flake off the tape, or a bit of dust may settle from the air. These bits of debris may adhere to the play/record head, causing variations in the volume level and degrading the performance of your recorder.

To keep your recorder in top condition, clean the recorder heads regularly after every 15-20 loads or saver. Use denatured alcohol (available at any drugstore) and cotton-tipped swabs. Lightly dampen a swab and gently stroke the erase head, the record/play head, and the pinch roller. This will remove accumulated tape oxide and dust. You can also use a soft brush or vacuum cleaner to remove dust from the tape compartment.

Every time you press the record or play button, you put a small amount of stress on the play/record head. Eventually the head will be pushed out of alignment. This is one of the reasons why a program recorded when you first got your system will not load several months later or won't load on another system.

The cure is to have your recorder aligned by a qualified technician, or if you have the know-how, to align it yourself.

The technicians at Instant Software recommend using an industrial standard alignment tape (they use a Panasonic tape, part No. QZZCFM). This tape allows them to test for playback frequency response, playback level, and the head azimuth adjustment. The most critical aspect, especially for PETs, is the azimuth adjustment.

To run a test on your recorder, connect an oscilloscope to the earphone jack, insert the alignment tape into the recorder, push the play button, and adjust the head for the best waveform on the oscilloscope. If you lack test instruments, adjust the head for the loudest sound and the best high frequency response without changing the recorder's volume setting.

Remember, your recorder is a critical link in your computer system. For the best performance, give it the best care.

ACCIDENTAL ERASING

Until you've tried it, you won't believe how easy it is to screw up a data cassette. For instance, the magnet in any loudspeaker can do a fantastic job of removing part of the data and you'll find loudspeakers in portable radios, cassette recorders, TV sets, etc. Power supplies will do even better. No one can even estimate how many tapes have been wiped out by these little TRS80 power units or by putting cassettes on top of the monitors, where its electromagnetic field can weave its subtle work.

Do not treat your cassettes casually. Give them extra care and attention. Keep them away from anything electrical, magnetic or dusty at all times.

Well, accidents can happen, even to the most careful of us. One of your kids can try out a data cassette and push the record button etc. You should ward this off by punching out the tabs on the back of the cassette to prevent recording. If things do go awry, we'll redo your cassette for you for a nominal service charge of \$2. Just send back the original cassette, a note as to what went wrong (we like to keep statistics) and the \$2. We'll fix it up for you and get it back as quickly as we can. Try not to get worried if it takes three weeks one week each way for the port office (when they are up to that rigorous a schedule) and a week for us to horse around.

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This program is protected by copyright. This means that it is illegal to make a copy of the tape or a listing of the program. Any copy. We feel strongly enough about this to offer a \$10,000 reward for the conviction of anyone copying this program. This means that when your life-long friend and bosom buddy asks you to run off a copy for him, you have, at that moment, to decide whether he wants the program or the ten thou. If you do decide to make the copy, you'd better be very nice to said friend from then on.

Better, if someone is insistent, is to give them the money to buy a cassette of their own. I could be cheaper in the long run.

Why the fuss? We want to make sure that programmers are paid for their programs and paid well. The more money we pay in royalties, the better programs you'll have.

IMPROVEMENTS

There are very few programs which cannot be improved. If you work out some improvements to this program, it could be worth your while to send them in for possible use in an updated version of the program. Those who contribute to an updated program will share in the royalties which result. Instant Software Inc., Peterborough NH 03458.

READING ?

Kilobaud MICROCOMPUTING is designed to help the newcomer to computing to understand computers, while still being interesting to the experts. We try to avoid the use of computerese as much as possible. You'll also find a wealth of software in Kilobaud MICROCOMPUTING and more articles every month than any other magazine.

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NOTES