INTRODUCTION

B-1 is a computer simulation of a manned bomber nuclear strike mission into Soviet Russia. The player gives commands to the computer which 'flies' the bomber on the mission. The bomber must fly to within bomb range of its target to deliver its weapon. It is opposed by nuclear armed MIG's and SAM's of the USSR's air defense system. It defends itself with ECM, evasive action and nuclear tipped multi-purpose Phoenix missiles.

PROGRAM STARTUP

The program starts by printing an initial display containing the primary target of the mission, the five letter failsafe code which is required to arm the bomb, and a list of alternate targets and Soviet defense complexes. The program then enters the main loop in which it requests and processes the pilot's command and then runs the Soviet Air Defense Command, launching MIG's and SAM's.
The primary target is chosen at random from the list. The Fail Safe Code is a group of five random letters. SRAM has a range of 250 kilometers (km). The Fail Safe Code is of group of five random letters. It is large enough to completely destroy the target. The Attack Missile (SRAM) with a one Megaton warhead.

**FLIGHT CONTROL COMMANDS**

Flight control commands are Altitude: AL, course: CO and Autopilot: AU. Altitude requests an ordered altitude to which the B-1 will then climb or dive to at its maximum rate. Although orders greater than 25,000 m or less than 100 m can be given the computer will not fly the B-1 outside these limits. Altitude affects the probability of a DC launching, lower being less likely. However, if the player is in close formation, the B-1 should be left for evasive action or the effects of a nuclear airburst. In addition flying below 300 m runs the risk of a terrain avoidance radar failure, i.e., the B-1 flying into the ground. Should an evasive action or an airburst change the B-1's altitude it will stay at the new altitude until it receives new orders.

Course requests an ordered course to which the B-1 will turn at maximum rate. If altered by evasive action or airburst the B-1 will stay on the new course until further orders.

Autopilot will request a time for the autopilot to fly the B-1. For convenience this is arranged in seconds, or the effects of an evasive action. The autopilot will stay at the new altitude until it receives new orders.

**COMMANDS**

Commands may be divided into four types: flight control, navigational, combat and bombing. Each command and each target and Defense Complex is recognized by the computer from its first two letters e.g. EC for ECM, PH for Phoenix missile, MO for Moskva, KO for the Konosha Defense Complex.

After each command is entered there will be a short delay while the computer processes Soviet air defenses. For long autopilot times this delay will be longer.

**NAVIGATIONAL COMMANDS**

The navigational commands are: Navigator: NA, Search: SE, Status: ST, and Radar: RA. Navigator requests a city to fly to. It recognizes all targets and Defense Complexes from the first two letters of their names. It also recognizes TH for Thule AFB, to which the B-1 must return upon completion of its mission. It will produce a range and bearing to the desired city. Use of the navigator takes a large amount of game time. This is not the command to use with a MIG hot on your tail!!

Search will return the range and bearing of the nearest active Defense Complex within +/− 45 degrees of the B-1's present course. This is intended as an aid to flank suppression. The search command also requires a large amount of game time.

Status returns a display of important aircraft parameters including fuel and a contact summary. Radar returns only the contact summary. A contact summary is also printed before each request for a command if any contacts are held.

**BOMBING COMMANDS**

The bombing commands are Arm: AR, and Bomb: BO.

Arming the SRAM is required prior to dropping it. To do this the Fail Safe Code must be input when requested. Arming the SRAM also results in excessive altitude and will cause a message to be displayed on the screen giving the type of unit launched (either a MIG or SAM) and information of the launching DC. If a DC's name is input and that DC is in range the computer will not fly to it. The computer expects the player to input his commands in a very precise format and terminate a command with a 'RETURN' key. The computer is very literal-minded and can't make allowances for the human element. For example, if the player requests a list of all contacts, the computer will only return the contacts that are held in the list or the effects of a nuclear airburst. In addition flying below 300 m runs the risk of a terrain avoidance radar failure, i.e., the B-1 flying into the ground. Should an evasive action or an airburst change the B-1's altitude it will stay at the new altitude until it receives new orders.

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**COMBAT COMMANDS**

The combat commands are ECM: EC, Evasive Action: EV, and Phoenix Missile: PH.

ECM, or Electronics CounterMeasures, may cause aircraft to randomly lose their target or to malfunction. The effect is not range dependent and works better on SAM's. With each use the effectiveness of ECM is reduced because the Soviets figure out what is happening.

Evasive action is a violent change in course and altitude to throw off pursuers. The size and direction of the change is random. The effect is very range dependent and works better on SAM's than MIG's. If evasive action results in a negative altitude the B-1 will crash.

Phoenix missiles are armed by the PH command and then launched against a close SAM or MIG or a Defense Complex within 200 km. A target is requested by the computer. For convenience this is arranged in ten minutes, hours. While the autopilot is in control the player may not interrupt it. Events which occur which generate messages, such as MIG or SAM launch or any target coming into range, will cause the autopilot to return control to the player. The exception to this is a report of a target going out of range, which will not interrupt the autopilot.

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**EXAMPLES OF PLAY**

This section gives some examples which will be useful for the computer game beginner. An important thing to keep in mind is that the computer expects the player to put his commands in a very precise format and terminate them by pressing the "ENTER" (or "RETURN") key. The computer is very literal-minded and can't make allowances for the human element. For example, if the player requests a list of all contacts, the computer will only return the contacts that are held in the list or the effects of a nuclear airburst. In addition flying below 300 m runs the risk of a terrain avoidance radar failure, i.e., the B-1 flying into the ground. Should an evasive action or an airburst change the B-1's altitude it will stay at the new altitude until it receives new orders.

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The B-1 bomber in the game carries one Short Range Attack Missile (SRAM) with a one Megaton warhead. SRAM has a range of 250 kilometers (km). This is large enough to completely destroy the target. The Attack Missile (SRAM) with a one Megaton warhead.

They work better against MIG's. They may also be fired against DC's in range. They may be fired at units within 10 seconds of intercept. The Phoenix is fired at the closest interceptor if it is in range. The Phoenix is more effective against MIG's. If evasive action results in a negative altitude the B-1 will crash.

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CASSETTE LOADING INSTRUCTIONS

TRS-80

With SIDE ONE of the cassette up, put it into the recorder, and rewind until the tape stops moving. Check that the volume control is set to the proper level (between 5 and 6 is normal). Press ‘PLAY’ on the recorder, type:

LOAD

and press the 'ENTER' key on the keyboard. The recorder should start to move and your program will be loaded. This will be indicated by the flashing asterisk at the upper right corner of the screen. This program is not short, and will take several minutes to load. When the tape stops and the TRS-80 prints ‘READY’ on the screen, type:

RUN

and press ‘ENTER’ to play the game.

APPLE II

The APPLE program is located on SIDE ONE after the TRS-80 program. There are two copies of the TRS-80 program which must be skipped before the APPLE program can be loaded. By listening to the tape, you can tell the difference between the two programs. The APPLE program is easily recognized by the relatively high pitch and ‘pure’ quality of the calibration tone at the beginning of the program. This tone is free of the characteristic TRS-80 buzz. Find the beginning of an APPLE program and position the tape to just after the start of the calibration tone. Set up the recorder for input. On the keyboard, type:

LOAD (Don't hit 'RETURN' yet).

Press ‘PLAY’ on the recorder and immediately press ‘RETURN’ on the keyboard. The computer will start reading in your program. The computer will beep twice, once at the beginning of the program and once at the end. This program is not short and will take a few minutes to load. When you hear the second beep, type:

RUN

and press ‘RETURN’ to play the game.

COMMODORE PET 2001

Turn the tape over so SIDE TWO is up. Insert the tape in your recorder and rewind to the beginning of the tape. When ready, type:

LOAD

and press the 'RETURN' button on the keyboard, then the 'PLAY' button on the recorder. The tape should start moving, and start loading your program. This program is not short, and will take several minutes to load. The computer will tell you when it finds the program and starts loading. When done, the computer will print ‘READY’, and the tape will stop. Type:

RUN

and press ‘RETURN’ to play the game.

IF YOU CANNOT LOAD THE PROGRAM

1. Check your equipment carefully to be sure that all cables and connections are correct.
2. Re-read the section in your computer’s manual that tells you how to load a tape. Try to load the tape again.
3. If you can adjust the volume on your recorder, try different settings, both higher and lower.
4. Each program is recorded twice on the tape, one recording right after the other. By listening to the tape, find the beginning of the second recording and try to load it.
5. If possible, load another program from a tape you know works on your computer. This will prove that your equipment works. Try once more to load your game.
6. The normal reason tapes will not load is tape recorder head misalignment. Your computer may be able to save and load programs on its own recorder, but be unable to read tapes made on a different recorder for this reason. Be sure your recorder heads are correctly aligned. Your local computer store or dealer can help you with this.
7. If the program still cannot be loaded, send the cassette, with a complete description of the problem (what type of computer you have, what the computer says, if anything, when you try to load the cassette or play the game and what you did to try to get it to load.) to:

Avalon Hill Microcomputer Games
4517 Harford Road
Baltimore, Maryland 21214

Defective cassettes will be replaced.

After the program is loaded

Once you have your program loaded, it is a good idea to make a backup copy (for your own use). Follow the normal procedure for saving a basic program in your computer’s manual.

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