B-1 Nuclear Bomber
GAME RULES

FOR:	TI99/4 & 4A®
Atari® Home Computers	TRS-80® Models I & III
Apple II®	IBM P.C.®
Commodore 64®	Timex/Sinclair®

® Trademarks of Warner Communications, Apple Corp., Commodore Business Machines, Texas Instruments, Tandy Corp., International Business Machines and Timex Corp.

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 Fail Safe 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.

BOMBING THE TARGET

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

The primary target is chosen at random from the list of targets. All targets have a population of more than one million persons.

The Fail Safe Code is a group of five random letters. Its purpose is to prevent inadvertent arming of the SRAM. A note of the code should be made prior to giving the first command. It will be used later to arm the SRAM.

THE SOVIET AIR DEFENSE COMMAND

The air defenses of the Soviet Union consist for the purposes of this game of about twenty Defense Complexes (DC's). Each DC evaluates the range to the B-1 and decides whether to launch every time interval. Launching depends on range (750 km max), altitude (lower less likely) and the state of the SRAM. A B-1 without SRAM is less likely to be attacked; one with an armed SRAM draws a great deal of attention. A launch will cause a message to be displayed on the screen giving type of unit launched (either a MIG or SAM) and intercept time, as well as the name of the

launching DC. Unless prevented in some way each unit will intercept, resulting in a nuclear airburst which can cause destruction of the bomber. It can also cause changes in course and speed and loss of fuel.

SAM's and MIG's may be defended against by use of Electronic CounterMeasures (ECM), evasive action or Phoenix missiles. Phoenix missiles may also be used to eliminate DC's from a range of up to 200 km.

ECM causes MIG's and SAM's to lose their target. Repeated use lowers its effectiveness. ECM is better against SAM's and is not range dependent.

Evasive action is a violent alteration in course and altitude, which works better against SAM's than MIG's. It works only on close units. It poses the risk of flying into the ground when starting at low altitude.

Phoenix missiles are nuclear tipped homing missiles. They may be fired at units within 10 seconds of intercept. They work better against MIG's. They may also be fired against DC's in range.

Each type of defense is selected by giving the computer the appropriate command.

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.

FLIGHT CONTROL COMMANDS

Flight control commands are Altitude: AL, course: CO and Autopilot: AU. Altitude requests an ordered altitude, 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, enough room 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 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. 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.

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 flak 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.

COMBAT COMMANDS

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

ECM, or Electronics CounterMeasures, may cause airborne MIG's and SAM's to lose their targets or self destruct. 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. If only ENTER/RETURN is pressed (Type MIG or SAM respectively and then RETURN for the Commodore 64 and VIC-20) the Phoenix is fired at the closest interceptor if it is in range (within 10 sec.). The Phoenix is more effective against MIG's. If a DC's name is input and that DC is in range the Phoenix will destroy it for the balance of the game.

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 attention from the Soviet Air Defense Command, so it is wise not to do this too early. Once armed, the SRAM cannot be disarmed.

The Bomb command launches the SRAM. A final verification in Yes/No format is required. A No answer aborts the drop.

ENDING THE GAME

The game is ended when the B-1 is destroyed or returns to base. To end the game after dropping the SRAM head for Thule AFB (TH). At a certain distance from Russia over the Arctic the game is ended.

Note—Although the B-1 may not have enough fuel to reach Thule on its own it is presumed to refuel in flight from a tanker aircraft over the Arctic.

No matter how the game is ended a short mission summary is printed and a chance to play again is offered.

EXAMPLES OF PLAY

This section gives some examples that will be useful for the computer game beginner. An important thing to keep in mind is that the computer expects the player to input 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 guesses about what was REALLY meant! (Note that there will be some very minor differences between the versions for the different computers, but all versions are very nearly identical.)

The following sequence is a typical course of events during the play of the game:

COMMAND? (Computer puts this on the screen.)

AL [ENTER] (Player types request for new altitude.)

NEW ALTITUDE? (Computer.)

5000 [ENTER] (Player types request in meters.)

(B-1 is now climbing to 5000 meters. Meanwhile . . .)

COMMAND? (Computer.)

NA [ENTER] (Player requests navigation aid.)

WHERE TO? (Computer.)

MO [ENTER] (Player. Short for Moscow.)

MOSCOW BEARS 143.7T RANGE 2543 KM. (Computer)

COMMAND? (Computer.)

CO [ENTER] (Player requests a new course.)

NEW COURSE? (Computer.)

143.7 [ENTER] (Player heads for Moscow.)

COMMAND? (Computer.)

AU [ENTER] (Player turns on autopilot.)

TIME FOR AUTOPILOT (S,M,H) ? (Computer.)

0,0,2 [ENTER] (Player requests a maximum of 2 hours game time.)

(The computer will now fly the B-1 until something important happens or the 2-hour limit runs out.)

While entering commands may seem difficult at first, a little experience will make entering them almost second nature. Note that the computer won't let you do anything against the rules, so don't worry about that!

LOADING INSTRUCTIONS

ATARI CASSETTE

B-1 BOMBER is a BASIC and Assembly language program recorded in four separate parts on the cassette tape. With SIDE ONE of the cassette up, put it into the cassette recorder and rewind it completely. Turn on your computer and type:

CLOAD

and press the RETURN key on the keyboard. Push the PLAY button on the tape recorder and then the RETURN key on the keyboard again. The recorder should start to move and the first program will be loaded. When

the tape stops, type RUN and press the RETURN key. 'HIT RETURN' will be displayed on the screen. Ensure the PLAY button is still down (and keep it down) on the recorder and press the RETURN key.

The second part of the program will be loaded, the title page will be shown and you will be prompted to hit the RETURN key. Press the RETURN key. Part three of the program will load into the computer memory. When the third part has finished loading the screen will go black and the computer will 'beep'. Press the RETURN key and the last part of the program will load. When it has loaded the game will start automatically.

COMMODORE 64

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.

VIC-20

The VIC-20 program is located on side two after the Commodore 64 program at around cassette counter location 78. Its file name is B1-VIC. When ready, type:

LOAD "B1-VIC"

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.

TI99/4 & 4A

With SIDE ONE of the cassette up, put it into your cassette recorder and rewind it completely. Get into TI Basic and type:

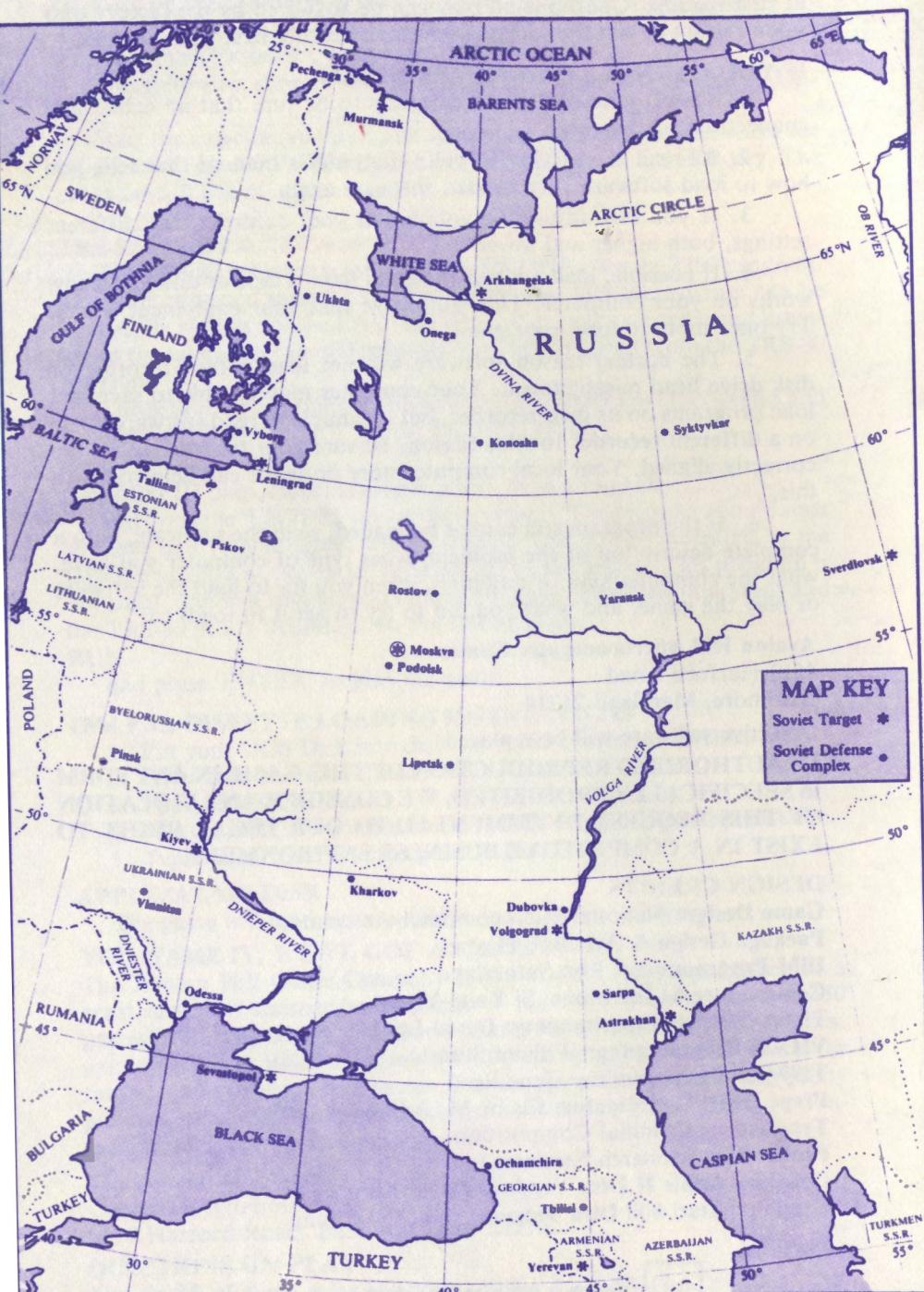OLD CS1

and press the ENTER key. Follow the screen prompts as per the instructions in your TI Reference manual.

After the program has loaded type RUN and press the ENTER key. The game will begin after a short setup period.

TIMEX / SINCLAIR

The Sinclair program is located on SIDE TWO of the cassette tape. Put the cassette tape into the cassette recorder with SIDE TWO up and rewind the tape completely.

ARCTIC OCEAN

25° 30° 35° 40° 45° 50° 55° 60° 65°E

Pechenga
BARENTS SEA
Murmansk

NORWAY
65°N
SWEDEN

ARCTIC CIRCLE
65°N

OB RIVER

WHITE SEA
Arkhangelsk

Ukhta
Onega

RUSSIA

DVINA RIVER

GULF OF BOTHNIA
FINLAND
60°
Vyborg
Leningrad
Konosha
Syktyvkar
60°

BALTIC SEA
Tallinn
ESTONIAN S.S.R.
Pskov
LATVIAN S.S.R.
LITHUANIAN S.S.R.
55°
Rostov
Yaransk
Sverdlovsk
55°

POLAND
Moskva
Podolsk

BYELORUSSIAN S.S.R.
Pinsk
Lipetsk

VOLGA RIVER

MAP KEY
Soviet Target
Soviet Defense
Complex

50°
Kiyev
UKRAINIAN S.S.R.
Vinnitsa
DNIEPER RIVER
Kharkov
Dubovka
Volgograd
KAZAKH S.S.R.
50°

DNIESTER RIVER
Odessa
Sarpa
Astrakhan

RUMANIA
45°
Sevastopol
45°

BULGARIA
BLACK SEA
Ochamchira
GEORGIAN S.S.R.
CASPIAN SEA

TURKEY
Tbilisi
ARMENIAN S.S.R.
AZERBAIJAN S.S.R.
TURKMEN S.S.R.
55°

40°
30°
TURKEY
35°
Yerevan
40°
45°
50°

4000201
Revised
W-4202 6/83

Turn on the computer. Ensure that the 'K' cursor is displayed on the TV screen. Press the 'J' key on the computer keyboard. 'LOAD' should appear on the TV screen. Now type "B1".

The following should now be displayed on the TV screen: LOAD "B1".

Start the cassette recorder, and then press the ENTER key. After the program has loaded PRESS the RUN key and then the ENTER key. The program will begin.

TRS-80 Model I & III Cassette

The TRS-80 program is located on SIDE ONE after the TI99 program. The TI99 program must be skipped before the TRS-80 program can be loaded. By pulling out the EAR and MIC jacks on the recorder and listening to the tape, you can differentiate the TI99 program from the TRS-80 program.

Check that the volume control is set to the proper level (between 5 and 6 is normal). Press 'PLAY' on the recorder, type:

CLOAD

(For Mod III only, enter: L after CASS?, then CLOAD)

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.

IBM P.C. DISKETTE LOADING INSTRUCTIONS

1. Put your DOS Disk into disk drive and turn on your IBM P.C.
2. Enter date and time if necessary.
3. Type : BASICA (Enter)
4. When BASICA is loaded insert your B-1 Nuclear Bomber diskette.
5. Type: Run "B1" and the game will begin.

APPLE/ATARI DISK

The game will load automatically, just boot the diskette.

YOU NAME IT, WE'VE GOT A GAME ON IT . . .

The Avalon Hill Game Company is the world's largest publisher of a great variety of strategy board games of skill. We manufacture over 150 games; including wargames, sports strategy and statistical replay games, games of power politics, adventure and role-playing games, as well as fantasy and science fiction games. For complete information with pretty pictures, write the factory and ask for a *Complete Game Catalog*. Consult parts list for current price.

The Avalon Hill Game Company

Consumer Relations
4517 Harford Road, Baltimore, MD 21214

QUESTIONS ON PLAY

The clarity of these rules has been verified by *Software Testers of Universal Microcomputer Programmers (STUMP)* and deemed *"complete"* in all facets of instruction. Please re-read them in areas that seem unclear

at first reading. Questions on play can be answered by the factory *only* upon receipt of a self-addressed envelope bearing first-class postage.

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 software. Try to load software again.

3. If you can adjust the volume on your recorder, try different settings, both higher and lower.

4. If possible, load another program from a tape or disk you know works on your computer. This will prove that your equipment works. Try once more to load your game.

5. The normal reason software will not load is tape recorder or disk drive head misalignment. Your computer may be able to save and load programs on its own recorder, but be unable to read software 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.

6. If the program still cannot be loaded, send the software, 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 software 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 software will be replaced.

UNAUTHORIZED REPRODUCTION OF THIS GAME IN ANY FORM IS SPECIFICALLY PROHIBITED. WE CONSIDER ANY VIOLATION OF THIS REQUEST DETRIMENTAL TO OUR LEGAL RIGHT TO EXIST IN A COMPETITIVE BUSINESS ENVIRONMENT.

DESIGN CREDITS

Game Design: National Microcomputer Associates
Package Design & Art: Bob Haynes
IBM Programming: Ron Sutherland
Commodore 64 Revisions: Si Yong-Yi
Timex/Sinclair Programming: David Leithauser
VIC-20 Programming: William Stuart
TI99/4A Programming: Gene Reed
Prep. Dept. Coordinator: Elaine M. Adkins
Typesetting: Colonial Composition
Production: Monarch Services, Inc.
Graphics Apple II Disk Version: David Kuijt
Graphics Atari 800 Disk Version: Winchell Chung

microcomputer games®

A Division of The AVALON HILL Game Co.