



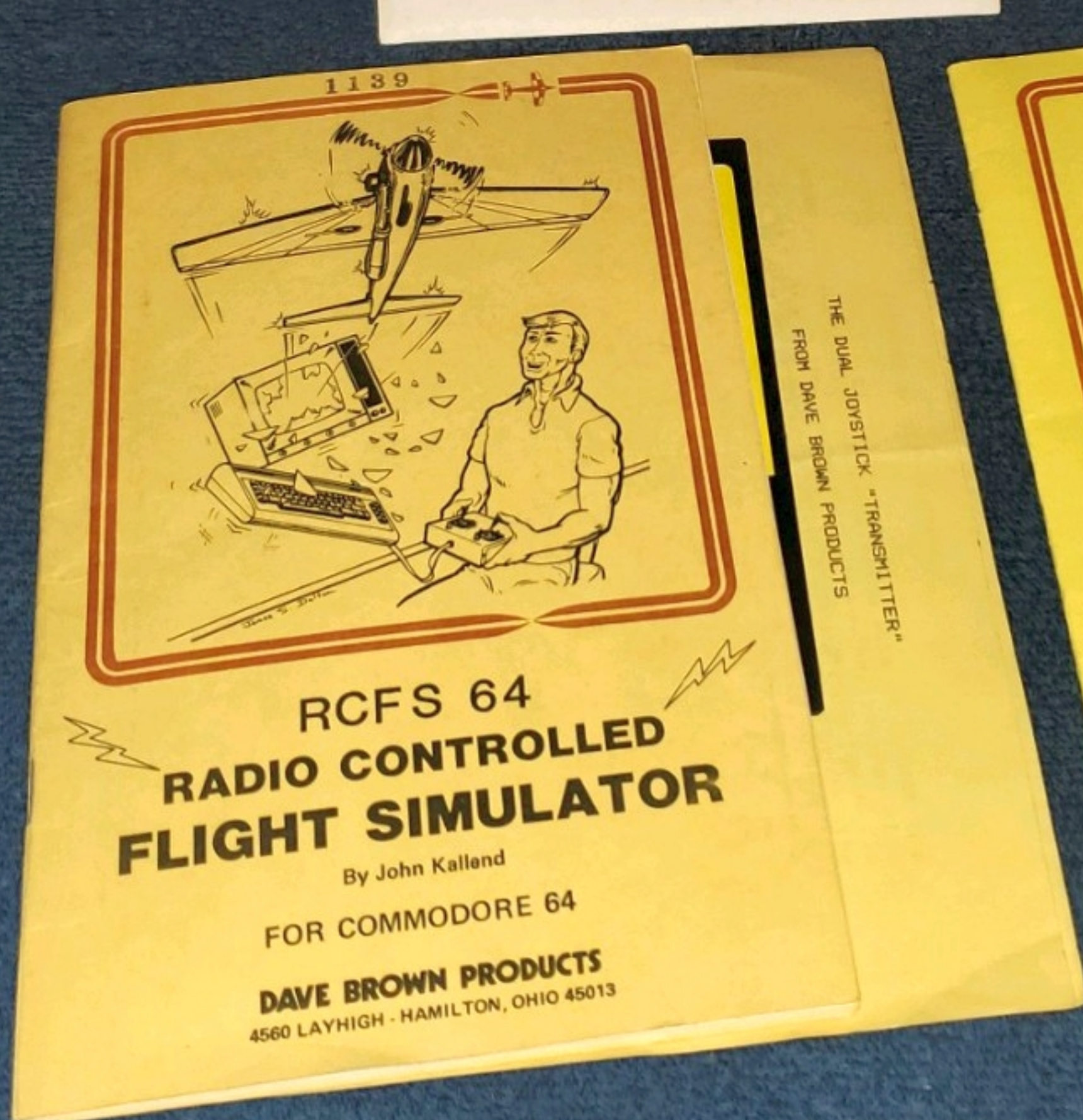


3356 **RCHS 64**
R/C HELICOPTER SIMULATOR
FOR COMMODORE 64
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DAVE BROWN PRODUCTS, INC.

SOFTWARE

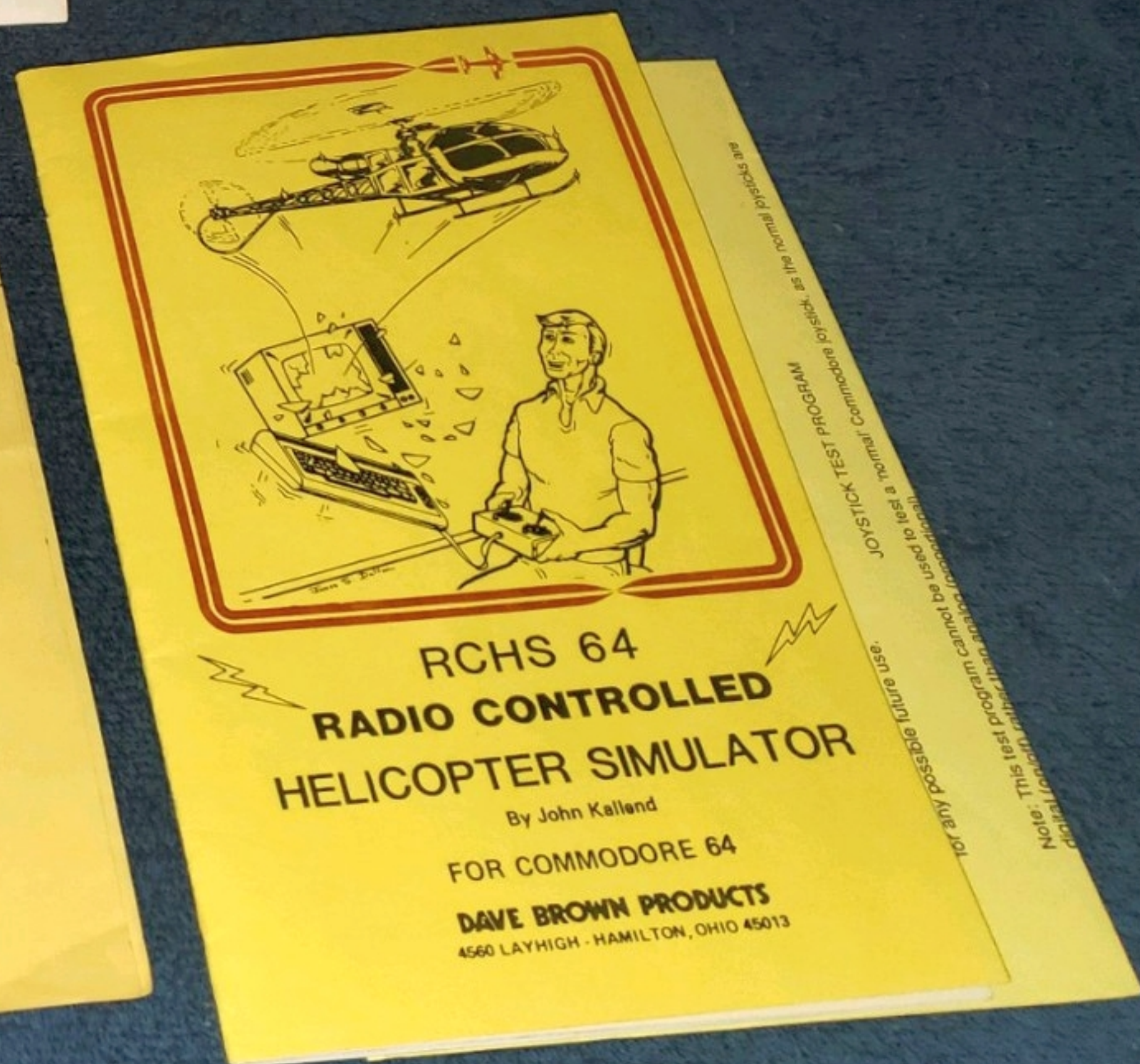
4560 LAYHIGH • HAMILTON, OHIO 45013



RCFS 64
RADIO CONTROLLED
FLIGHT SIMULATOR

By John Kallend
FOR COMMODORE 64
DAVE BROWN PRODUCTS
4560 LAYHIGH • HAMILTON, OHIO 45013

THE DUAL JOYSTICK "TRANSMITTER"
FROM DAVE BROWN PRODUCTS



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JOYSTICK TEST PROGRAM
Note: This test program cannot be used to test a normal Commodore joystick, as the normal joystick is not a true joystick.
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3. QUIT. This selection returns you to the BASIC programming language.

RUNNING THE SIMULATOR

When you have configured the airplane and the controls, you can run the simulator by selecting item 1 from the main menu. At this time, you are asked if you wish to save your configuration to the disk so that the next time you run the program, you will not have to reconfigure the plane and controls. Answer by pressing "Y" for yes or "N" for no. The main part of the program will then be loaded.

You are now asked to center the joystick and press the "return" key to allow the computer to find out where the neutral settings are. When the program starts, you will be presented with a view corresponding to the picture from an imaginary TV camera pointing at the plane. The plane will be about 40 feet ahead, on the ground, and facing straight away from you. In the upper right hand corner is a block containing a map of the airfield, with the runway indicated by the horizontal line in the middle. Once you leave the airfield proper, the "map" expands to show an aerial view of approximately 1 mi. square, and the runway becomes a much shorter line. At the bottom of the display is a read-out giving the distance, in feet, from you to the airplane, its velocity, the throttle setting (in %), and the altitude of the airplane in feet.

The Dave Brown Products Dual Joystick "transmitter" is set up so that the throttle is operated by the fore and aft movement of the left stick, the rudder movement of the left stick, the elevator movement of the left stick (you pull back (pitch) is controlled by the fore and aft movement of the right stick, the ailerons (roll) are controlled by the left and right movement of the right stick. This is the most common "stick mode" used in flying R/C model airplanes, and is illustrated in figure 1-A below.

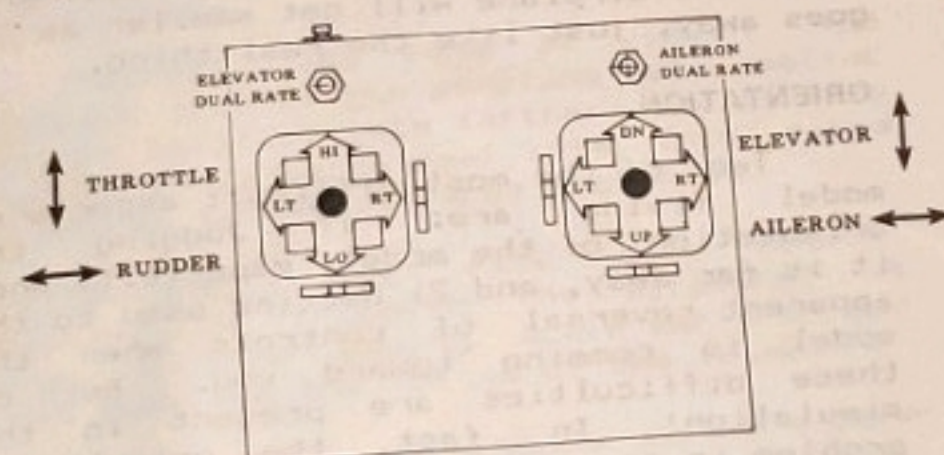


FIG. 1-A

At this point, you may wish to open the throttle about 20% and practice taxiing on the ground using the left joystick to steer the airplane. On the other hand, I expect that you have already opened the throttle fully, so let the airplane gather speed and take the model off using a small amount of backpressure on the elevator stick (you're in for a wild time if you have no previous experience). Control the airplane as you

THE DUAL JOYSTICK "TRANSMITTER"

FROM DAVE BROWN PRODUCTS

Welcome to the wonderful world of R/C Model aircraft. Your purchase of the Dual Joystick "transmitter" will enhance your "flying" enjoyment with the RCFS 64 Flight Simulator, as well as future programs which will surely make use of its ability to access 4 analog inputs and 3 pushbutton inputs on your Commodore 64 computer. All our Dual Joysticks are tested before they leave our factory, so when you open the box, you are ready to install the plugs and start having fun. Before plugging in your Dual Joystick, refer to your Commodore 64 instruction manual for the location of the 2 control ports. Insert the plugs marked #1 and #2 from the dual joystick box into the appropriately numbered control ports, being careful to ensure that they are right-side up.

This instruction sheet includes a short Basic program with which you may test your Dual Joystick, and step by step instructions for using the knobs which defeat the self-centering springs. Plug in your joystick, type in the test program, and run the program. The numbers on the screen indicate the position of the joystick knobs. They should vary from "0" to "255" as the sticks are moved. Each number corresponds to one axis of travel on one stick. The neutral, or spring centered, position of each axis should be approximately "126" to "129" for most symmetrical control input. If they are not, then adjust the neutrals with each appropriate trim lever. On axis without spring centering, it is sufficient to ensure that the travel will go from "0" to "255". For use with the Dave Brown Products R/C Flight Simulators, the vertical axis (up and down axis), of the left stick, should have the centering-spring disabled for use as the throttle. All other axis should be spring-centered. The next step is to test the pushbuttons. Depress each pushbutton and the message "1>ON", "2>ON", or "3>ON" will appear. For most programs, only pushbuttons 1 and 2 are used, but this unit has the third one installed for any possible future use.

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R/C FLIGHT SIMULATOR
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SPEED-PITCH COUPLING is the tendency of a helicopter to pitch up in response to forward speed. If not carefully controlled by the pilot, severe, unstable oscillations may develop. The degree of coupling, in the simulation, is controlled by this parameter.

SENSITIVITY of the pitch and roll cyclic controls can be adjusted by this parameter. Dual rate controls is available on these functions - see the section on controls..

DRAG PARAMETER is a measure of the aerodynamic drag. A low value corresponds to a streamlined machine.

THRUST/WEIGHT ratio is the ratio of available lift in hover to the weight of the helicopter. Because of ground effect and translational lift, it is possible to fly with a thrust/weight ratio of less than one.

The preset values are somewhat arbitrary so you may want to experiment with the values until you like the results. After completion of this section, you will be returned to the main menu.

RUNNING THE SIMULATOR

When you have configured the helicopter, you can run the simulator by selecting item 1 from the main menu. At this time, you are asked if you wish to save your configuration to the disk, so the next time you run the program, you will not have to re-configure the helicopter. Answer by pressing 'Y' to save the new configuration, or 'N' to try a new configuration without saving it. The main part of the program will then be loaded.

You are now asked to center the joysticks, and press the 'RETURN' key to allow the computer to determine where the neutral settings are. After pressing the 'RETURN' key, the program starts and you will be presented with a frame corresponding to the picture from an imaginary TV camera pointing at the helicopter. The helicopter will be about 40 feet out in front of you, facing right. At the bottom of the display is a read-out giving the distance, in feet, of the helicopter from you, its velocity, the throttle setting, in percent, and the altitude, in feet.

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This instruction sheet includes a short Basic program with which you may test your Dual Joystick. Plug in your joystick, type in the test program, and run the program. The numbers on the screen indicate the position of the joystick knobs. They should vary from "0" to "255" as the sticks are moved. Each number corresponds to one axis of travel on one stick. The neutral, or spring centered, position of each axis should be approximately "126" to "129" for most symmetrical control input. If they are not, then adjust the neutrals with each appropriate trim lever. On axis without spring centering it is sufficient to ensure that the travel will go from "0" "255". For use with the Dave Brown Products R/C Flight Simulators, the vertical axis (up and down axis), of the left stick, should have the centering-spring disabled for use as the throttle. All other axis should be spring-centered. The next step is to test the pushbuttons. Depress each pushbutton and the message "1>0N", "2>0N", or "3>0N" will appear. For most programs, only pushbuttons 1 and 2 are used, but this unit has the third one installed for any possible future use.

JOYSTICK TEST PROGRAM

Note: This test program cannot be used to test a 'normal' Commodore joystick, as the normal joysticks are digital (on/off) rather than analog (proportional).

```
10 C=12*4096:REM SET PADDLE ROUTINE START
11 REM POKE IN THE PADDLE READING ROUTINE
15 FOR I=0TO63:READA:POKEC+I,A:NEXT
20 SYSC:REM CALL THE PADDLE ROUTINE
30 P1=PEEK(C+257):REM SET PADDLE 1 VALUE
40 P2=PEEK(C+258):REM " " 2 "
50 P3=PEEK(C+259):REM " " 3 "
60 P4=PEEK(C+260):REM " " 4 "
65 JV=PEEK(56320)
67 PV=PEEK(56321)
70 PRINT P2;TAB(6);P4;TAB(12);P1;TAB(18)
72 IF JV=126 THEN PRINT "1 ON ";
74 IF JV=111 THEN PRINT "2 ON ";
76 IF JV=110 THEN PRINT "1 ON 2 ON ";
78 IF PV<255 THEN PRINT "3 ON ";
79 PRINT
90 GOTO 20
95 REM DATA FOR MACHINE CODE ROUTINE
100 DATA 162,1,120,173,2,220,141,0,193,1
110 DATA 128,141,0,220,160,128,234,136,1
120 DATA 1,193,173,26,212,157,3,193,173,1
130 DATA 169,64,202,16,222,173,0,193,141
140 DATA 6,193,88,96
```

READY.

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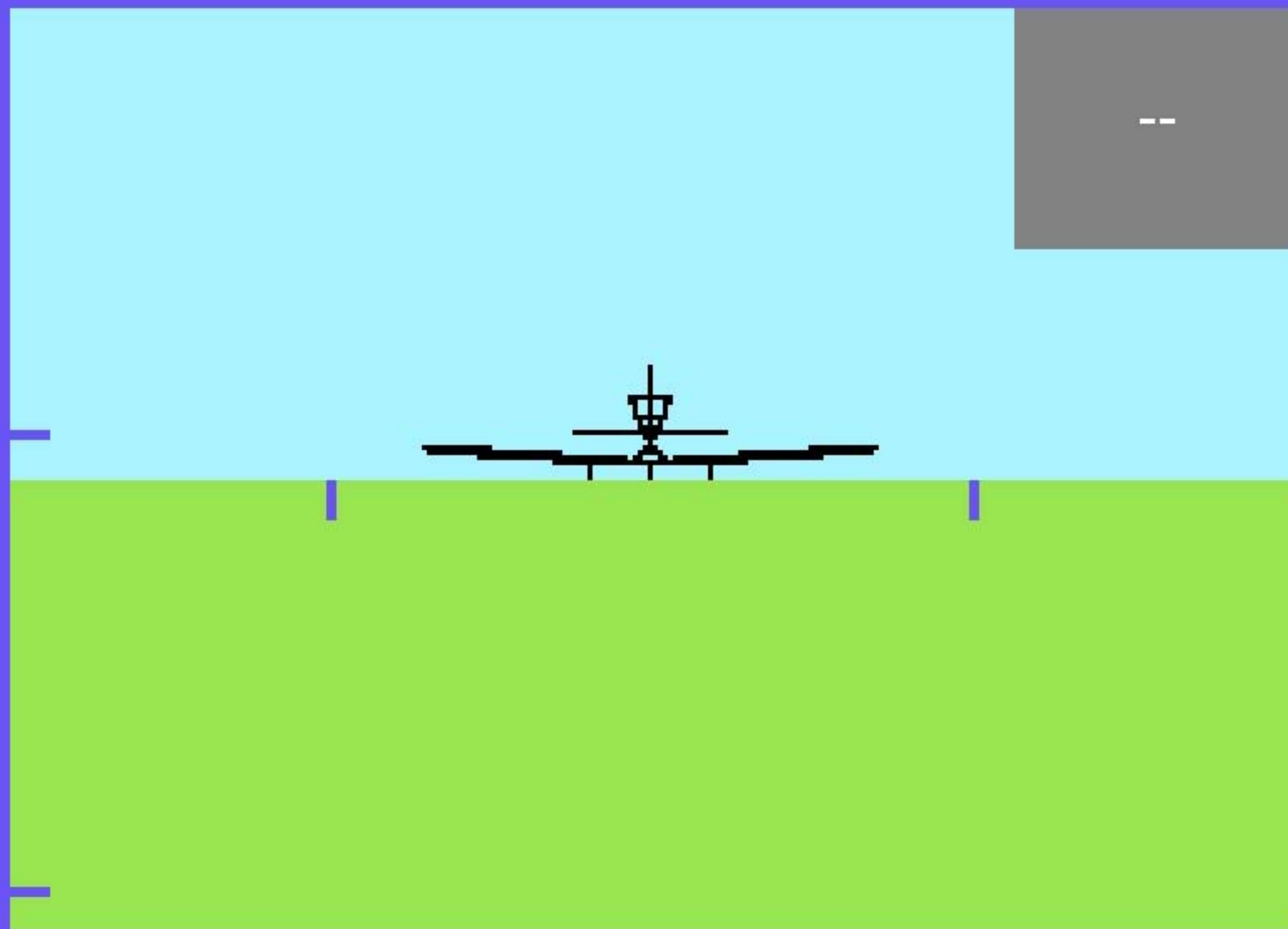




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TE9S



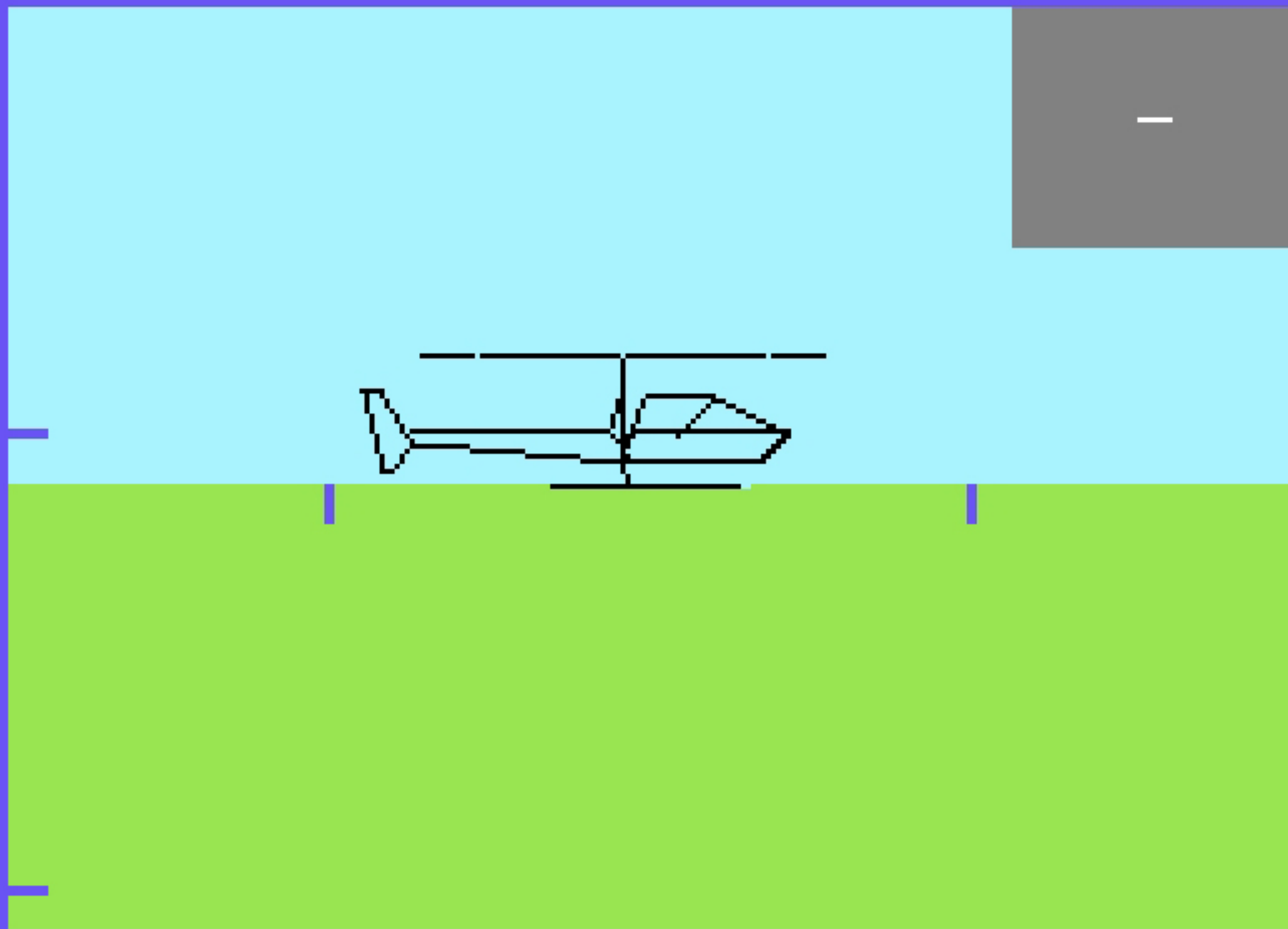


DIST 40

VEL 0

THR 0

ALT 0



DIST 34

VEL 0

THR 0

ALT 0