

# FLIGHT SIMULATOR



**TIMEX** **sinclair**



PERSONAL COLOR SOFTWARE



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Loading time: 3 minutes 45 seconds

Load name must be typed in lower case letters.

Learn to fly in a small, high-performance, twin-engine, propeller-driven airplane. Three options allow you to pilot the plane from airport to airport, take over the controls in mid-flight, or practice your approaches and landings. Learn to fly the same way professional pilots learn, using a computer-controlled flight simulator that lets you experience the thrill of flying first-hand – without ever leaving the ground!

Through the cockpit window, you see the horizon, as well as ground features passing beneath you. On take-off or landing, you see the runway rolling beneath you and the runway lights zipping past on either side.

## COMMAND CARTRIDGE INSTRUCTIONS

If you have the cartridge version of this software program please follow the steps listed below:

1. Turn off your TS2000
2. Lift cartridge door open
3. Insert command cartridge with label side up
4. Close cartridge door
5. Turn on your TS2000
6. Program will now begin execution

If Step 5 does not occur — start over with Step 1 . . . and reset cartridge once again.

ALWAYS TURN OFF YOUR TS2000 BEFORE INSERTING OR REMOVING CARTRIDGE.

TO LOAD: Press LOAD “flight”, start your tape player, then press ENTER. The program will load in 3 minutes 45 seconds and start automatically. Stop the tape when the menu appears.

TO PLAY: Select one of the three options on the menu. They are —

1. IN FLIGHT: Slip into the pilot’s seat and take over the controls while the plane is in flight. This is usually a pilot’s first experience at the controls. Landings and take-offs, normally, are saved until he or she has some familiarity with the controls. Select this option and you begin with your plane several thousand feet above the ground.
2. FINAL APPROACH: You find yourself a couple of miles from the end of a runway, in good position to begin your descent and landing. You see a speck in the distance, just below the horizon. That’s the airport. It grows in size until it finally blossoms into the end of the runway.
3. TAKE-OFF: Choose this option and find yourself sitting on the ground at the end of the runway, ready to take off.

At the beginning of all three options, you are looking out the window with the horizon ahead of you. Just beneath the window is your control panel, containing the various meters and computer readouts you need to successfully fly your plane. Let's take a look at each of the controls in action. Select option 1 above.

**NOTE:** To select any of the options, press the appropriate numbered key on the TS2000. You are asked if you want to include the wind as a factor in your handling of the plane. Press Y if you do, or N if you don't. We recommend that you fly without the added problem of wind until you master your controls without wind.

Upon selecting option 1, find yourself several thousand feet above the ground with the plane automatically stabilizing itself. When it reaches an altitude of approximately 6200 feet, it levels off and locks in at that altitude. Look at the controls as your plane makes its adjustments. Try pressing the M key on the computer. This shows the navigational map you'll reference to make adjustments in your course. We'll discuss this map later — for now, press M to return to the window and instrument panel. Let's look at each of the instruments:

### THE INSTRUMENT PANEL

**The RDF (radio-direction-finding) meter:** This is the large dial in the center of the instrument panel. A small airplane appears on the middle of the dial indicating the direction of the plane relative to the nearest ground beacon the RDF equipment is currently logged in on. The beacon is represented by a flashing dot on the dial. If you wish to head directly for the beacon, bank the airplane until the dot moves to the 12 o'clock position on the dial.

**The AIR SPEED INDICATOR:** This is the dial immediately to the left of the RDF. The needle indicates the airspeed of your plane in knots x 10. A reading of 15 is read as 150 knots.

**The ALTIMETER:** This is the dial immediately to the right of the RDF with two needles. The shorter needle measures your height in units of 1000 feet, and the longer one in units of 100 feet. Think of the needles as the hands of a clock — 10 minutes after 6 would be 6200 feet above the ground.

**The ROC (rate of climb) indicator:** This is the dial on the extreme right of the instrument panel. It measures the vertical speed of the airplane in units of 1000 feet per minute. When the needle rises above 0, the airplane is climbing. If it falls below 0, the airplane is descending.

**The POWER gauge:** Located on the bottom right of your panel, this gauge measures the extend of the throttle. The thrust of the engines increases with the throttle.

**The FUEL gauge:** This gauge indicates the level of fuel in the tanks.

**FLAPS:** This shows the angle of extension of the flaps. The needle (in a horizontal position normally) moves downward to indicate degree of extension of the flaps.

**GEAR:** This is a red and green panel. Landing gear up is indicated in the top red half — otherwise "down" appears in the lower green half.

BCN RGE BRG: This is a digital readout panel giving you information on the current logged-on beacon. BCN tells you the call sign of the logged on beacon. RGE (range) gives its distance in nautical miles, and BRG its bearing in compass degrees relative to the airplane.

The ILS (instrument landing system) gauge: Located at the far left of the instrument panel, this is a guidance system to aid the pilot during the runway approach. A radio beacon at the start of the runway emits a signal. Its position is displayed on the ILS as a flashing dot. When the airplane is on the proper approach to the runway, the flashing dot will be in the center of the ILS. If it is not at the center, steer the plane toward the dot. Hence, if the dot, representing the end of the runway, is to the left of center, bank left; if it's above the center, the plane is too low, so pull up.

The RA (radio altimeter): This is a digital readout and part of the ILS system. A radio signal bounced off the ground measures the height, in feet, from the ground to the wheels. It gives a precise measurement for landing.

### THE PILOT CONTROLS

Since you are relatively safe 6000 feet above the ground, try experimenting with each of the pilot controls as we explain them. But, be careful — if you go too far too fast, you'll find yourself in a smoldering heap on the shores of Lake Orb.

THE JOYSTICK: The joystick is represented on the TS2000 keyboard by the arrow keys (5, 6, 7, and 8). Pressing the 5 or the 8 key causes the plane to bank left or right. Pressing the 7 key moves the joystick forward (away from you), causing the nose of the plane to point downwards for diving. Pressing the 6 key pulls the joystick toward you, causing the nose to point upward and the plane to climb. (To better understand the 6 and 7 keys, try holding an imaginary stick in front of you, and then pulling it toward you and pushing it away from you. You can experience the feeling of going up and down. Keep this image in mind as you press the 6 and 7 keys, and you shouldn't be confused.) Try experimenting a bit.

You may bypass tape load instructions below.

### JOYSTICK FEATURE – 1 PLAYER

This program optionally allows the use of a joystick to control its actions. With the joystick in slot 1 the following actions replace their keyboard counterparts:

Stick up = Dive

Stick down = Climb

Stick right = Bank right

Stick left = Bank left

Button depressed = Increase power

THIS PROGRAM REQUIRES THE JOYSTICK TO BE IN THE PLAYER 1 SLOT.

The RUDDER: The rudder, located on the tail of the plane, is used to make minor adjustments when turning the plane. Press Z to turn left and X to turn right. When taxiing on the ground, the gear is steered by the rudder controls.

**POWER:** The thrust of the engines is controlled by the P and O keys. Pressing P increases the throttle and gives the engines more power, and pressing O reduces the throttle. (Note: The O key is to the left of the P key.)

**FLAPS:** The D and F keys control the angle of the flaps on the wings. Pressing D causes the nose of the plane to dip, and F causes it to rise. Remember D for “dip” or “down.” The flaps can be extended or retracted to varying degrees (as shown on the gauge), and should only be fully extended during the final stage of landing to avoid stalling at a reduced speed. With the flaps retracted, the stall speed of the plane is 80 knots. With full flaps, the stall speed is 60 knots. Extending the flaps while at high speed could cause the wings to be damaged or even torn off the plane.

**GEAR:** The gear, or landing apparatus, is extended by pressing the G key. Pressing G while the gear is down causes it to retract. The gear should not be dropped at high speed; besides increasing the drag on the plane the gear may be damaged.

**BEACON:** Press the B key to change the current logged-on beacon. Continue to press B until you have the call sign beacon you require showing under the BCN on your instrument panel. When you are in your final approach to the runway, the reading on your RDF meter and the BRG should match exactly.

**MAP:** Press M to switch from the pilot’s display to the navigational map. Press M to switch back. The navigational map shows you the location of the two airports and which you may land, the location of the beacons (the current beacon is flashing), as well as such ground features as lakes and hills. Your plane is represented by the flashing replica of a plane. There is a large international airport called MAIN, and a smaller local one called CLUB. Near MAIN are two beacons (ME and MW) three miles beyond each end of the runway. Similarly, CLUB has two beacons, CN and CS, two miles beyond each end of the runway.

## NAVIGATING

The most difficult aspect of flying is the approach and landing at an airfield. Experiment with the controls to vary the speed, altitude, and direction of the plane at a reasonably high altitude without worrying about the navigation. However, if you wish to land the plane (and eventually you must), you need to navigate it onto the right course, and you need to approach the runway at roughly the right glide angle, or angle of descent. Normally, the glide angle should be about 3 degrees — which should find you at about 6000 feet at 20 miles out, 3000 feet at 10 miles out, and 1000 feet at 3 miles from the end of the runway. This is difficult and requires much practice before you’ll be able to make a successful landing.

Taking off is a relatively simple procedure, simply hold your finger on the P key to give the throttle full thrust. When you begin to lift off the runway, press the 6 key to increase your angle of ascent. Once you have climbed to 6000 feet, your throttle should ideally be decreased to slightly more than half of full power.

Happy landings!

## LOADING INSTRUCTIONS:

(See Chapter 4 of your instruction manual for detailed instructions.)

1. First listen to the tape so you will be familiar with its distinct sections. The tape has a period of silence at the beginning, followed by a high-pitched, screechy noise. This is the computer program. The program is recorded twice on the cassette in case one does not load.

2. Set the volume control on the cassette deck to about 3/4 of the maximum. If you have tone controls, set the bass to minimum and treble to maximum. If you have just one tone control, set it to HIGH or MAXIMUM.

3. Rewind the tape to the beginning. Connect the EAR jack on the computer to the EAR jack on the cassette deck recorder. Make sure the plugs are clean and securely in place.

4. To instruct the computer to accept the program you must press the LOAD command and type the name of the program in quotation marks. See the instructions or cassette for the correct loading name.

5. Start the cassette deck, allow a few seconds for it to get up to speed, then press ENTER during the silence before the program begins.

6. The border of the TV screen will alternate between pale blue (cyan) and red, during the time the computer is searching for the program on the tape.

7. When the program has been found, the screen border will show a pattern of lines in the same shades of blue and red, and shortly the name of the program will appear on the screen.

8. Next, as the program itself is being loaded into the computer, the border pattern will become thinner, faster moving yellow and dark blue lines.

9. When the computer has finished loading the program, one of two things will happen:

1. Most commercial programs will begin running automatically, usually with a "title screen" or instructions to the user. (A title screen may tell you that the tape is still loading, if not, you should stop the tape immediately at this point so as to be in the proper position to load the next program if you wish.) or
2. The screen will be blank, except for a 0 OK, 0:1 in the lower left hand corner. This is a *report code* and means that the computer has successfully loaded the program.

Stop the tape immediately. To execute the program, you press RUN and ENTER. This will start the program.

## SOME SUGGESTIONS

1. The volume at which the program is loaded is very important. Usually 3/4 maximum volume works best, but recorders vary and may require experimentation with the volume setting. If you have a technical background you can check the output level of your recorder's EAR/SPKR jack. It must be at least 4-volts peak-to-peak, although 5 to 6-volts peak-to-peak is best.

2. Clean and demagnetize the heads of the tape recorder. Your ears may not pick up the signal fluctuations due to magnetic flux on the tape heads, but the computer has a much more sensitive "ear."

3. The computer is very susceptible to outside interference. Working on a metal table or near electrical appliances should be avoided.

4. Occasionally, once a program has loaded, the video display will show instability. This can be corrected by adjusting the vertical hold on the television.

**WARRANTY**

There are no warranties which extend beyond the description on the face hereof. No other warranty, whether express or implied, including the warranty of merchantability, shall exist in connection with the sale of this product. In no event shall Timex be liable for any consequential, incidental or special damages.

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