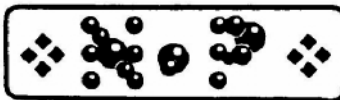


# WINGING IT

## Flight Simulator

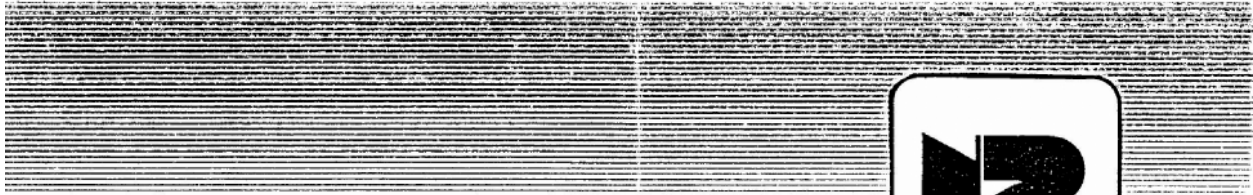
Fly your own private plane in this excellently visualized simulator. But aftered you've mastered flying, the excitement isn't over - three different games test your skill. Ground map and weather indicator chart your position on a randomized earth simulacrum. For 1 player.

TI BASIC - NO PERIPHERALS

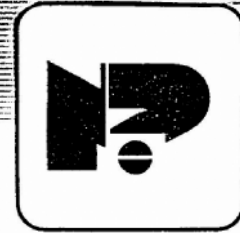


NOT-POLYOPTICS // 13721 Lynn St., Woodbridge, VA 22191

**GAMES FOR // TI 99/4(A)**



# POLYOPTICS



13721 Lynn Street, Suite 15, Woodbridge, VA 22191 ☎(703)491-5543

'Winging It' is an inexpensive flight simulator written in Basic to make it available to owners of the unexpanded TI 99/4A computer system. As such, its commands may appear to be slow; however, the instrument display has been calculated to advance in segments of three or four seconds each, thus preserving the 'real time' feel of more expensive flight simulators.

If you find that you are always crashing right after taking off, thus preventing you from getting any practice at the feel of the controls, next time press the 4 key to top the RPM's, then just wait until the plane takes itself off and reaches an altitude of at least 200 feet, to give you some room to maneuver in. If you get tired of waiting, prese the K key for one cycle to raise the nose a little bit (note that the little square in the middle is going down; this means the nose is going up). Once you have gotten a little altitude try some slow turns, never letting the wing-tip squares get past the corners of the big square.

To counter a tendency for the nose to raise up, lower the throttle with the 2 key or lower the trim tabs with the S key lower than 5.

To counter the nose dropping raise the throttle with the 3 key or raise the trim tabs with the D key above 5.

To counter the plane rolling to the left use the V full right rudder (use the P full right aileron only in emergencies); if the plane is rolling too much to the right use Z full left rudder (U full right aileron in emergencies).

If for some reason you cannot successfully load the program (always 'NO DATA FOUND, or 'ERROR IN DATA'), please return the cassette and a copy of your invoice from Triton to Not-Polyoptics and we will cheerfully send you another copy on cassette (on disk for \$1 more).



### MORE HINTS

1. Don't forget: the horizon indicator blocks show the opposite of the real position of the plane. Thus if the left block is up and the right block down, you are in a left turn (unless you are upside down, in which case you're in a right turns If the nose block is in the upper part of the horizon indicator you are diving (again, unless you are upside down, when you would be climbing).



2. If the green (land) half of the horizon indicator blocks are above the blue (sky) half, you are upside down.

3. You may use two keys at the same time, one from the right (stick) side and one from the left side.

4. Press the key or keys you want until the desired effect appears on the instrument panel. It takes 3 or 4 seconds for information to be processed.



5. You are suffering turbulence and/or icing if you see bad weather on the bad weather map. You don't have to be on it to be in the bad weather.

6. Beginners should fly without weather to get the feel of things first.

7. All controls have the opposite effect when you are upside down.

8. When you go slower your controls react more sluggishly.

### Flying

1. To take off press 4 until you hear the engine, or see the engine RPM's are up to 2000. When the speed gets to about 30 MPH pull back on the K key and take off. Watch out for cross winds, but don't overreact.

2. Make small aileron adjustments with the rudder. Experiment with combinations of aileron and rudder controls to get a feel for how the plane makes turns.

3. Trim tabs are small adjustments on the rudder. At a more than 5 position your lift is increased; at less than 5 your drag is increased. This is valuable at high speeds so that you don't climb too quickly into a stall, or at low speeds use the trim tabs to increase lift to keep the nose up.

4. To land: put trim tabs to 5, reduce throttle to about 600 RPM, put nose down slightly (11 way between middle and top) until altitude gets to 100 feet, then pull up until nose marker is in the middle. Keep your wings level. Try to land at 70 MPH or less.

### Aerobatic Maneuvers

1. Loop: throttle to 2000, build up speed by dropping the nose a little. When you get to about 100 MPH pull back on the K key until you've gone all the way around.
2. Roll: as in above, work up speed to 100 MPH, put your nose up a little, and press the extreme left or right aileron controls to roll.
3. Spin: if you find yourself in a spin, go to full throttle and pull back on the extreme left or right (M or period) opposite the spin of the plane, until you have pulled up, or crashed.
4. Using these basic manouvers, you can create manouvers of your own. Do a victory roll for every manouver you come up with.

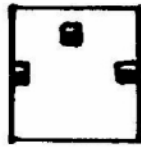
### Game Hints

1. Game 1: There are two indicators, underneath the compass, that tell you how far away and in what direction the meteor is; the first is the difference in latitude between you and the meteor, the second the difference in longitude. If you are north of the meteor, the first will be a letter less than the letter O; if you are west of the meteor the second will be a letter less than O. North and west are negative directions; south and east are positive. The closer to two letter O's on the indicators you get, the closer to the meteor you are.
2. Game 2: The flying saucer moves randomly; you must follow it and land on it.
3. Game 3: The best strategy is to head west immediately and gain altitude, so that when the enemy plane shoots your gas tank you can glide across the river.

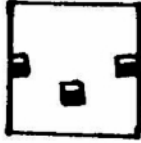
Earth



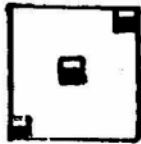
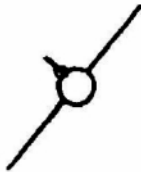
You are in the plane



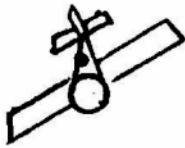
nose down



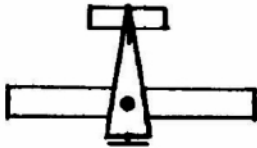
nose up



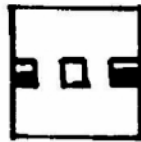
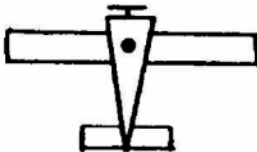
roll clockwise



nose down/roll clockwise



nose straight down



nose straight up



inverted



90° roll clockwise

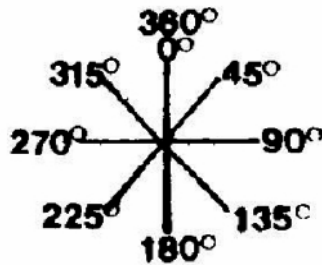
You gun the 95 hp Manasco and your Arrow rolls slowly down the runway, then faster and faster. Your airspeed increases: 30 knots, 60 knots, 90 knots. Slowly you pull back on the stick, eyes on the horizon indicator. Suddenly the horizon marker drops, the altitude shows ten feet. You're flying!

WINGING IT is a Not-Polyoptics simulation of flight in a 1932 Manasco Arrow monoplane.

### 1 - Cockpit Instruments

There are eight instruments to help you fly the plane:

1. Fuel
2. Altitude- in feet
3. Speed- in knots.
4. GM- ground map. This is a bird's eye view of the terrain around where the airplane is. The plane takes off from airport 1.
5. BW- bad weather. This shows bad weather around the plane's location. Bad weather will cause icing on the wings or buffeting of the plane; it is best avoided.
6. Trim tab- This shows the tab's position, from 1 to 9. The tab is a device on the elevator which is used to dampen the effect of the elevator. Thus the tab should be down (less than 5) when climbing, up 380° when diving.
7. Course in degrees- This is read clockwise with respect to the ground map (see illus.)



8. Horizon indicator- This is a simulation of a ball horizon, showing the plane's relative pitch (nose up or down) and roll (wing position). When the middle marker is going down, the plane's nose is going up; when it goes up the nose is pointing down. When the outer two markers are turning clockwise the plane's wings are turning counter-clockwise, and vice-versa. Note: this is a correct simulation. When looking at a ball horizon you aren't looking at what the plane is doing, you're looking at what the plane is doing to the ball horizon.

## 2 - Controls

2a. There are five console controls:

- 1-trim tab,
- 2-throttle,
- 3-brake,
- 4-rudder, and
- 5-weapons.

These are found on the left side of the keyboard.

2b. There are twelve stick positions:

- 1-forward left,
- 2-forward,
- 3-forward right;
- 4-full left,
- 5-left,
- 6-right,
- 7-full right,
- 8-back left,
- 9-back,
- 10-back right,
- 11-full back left, and
- 12-full back right.

These keys are found on the right side of the keyboard.

2c. Due to the unique ability of the TI 99/4 of split keyboard, one command from the left side and one command from the right side of the keyboard can be made simultaneously.

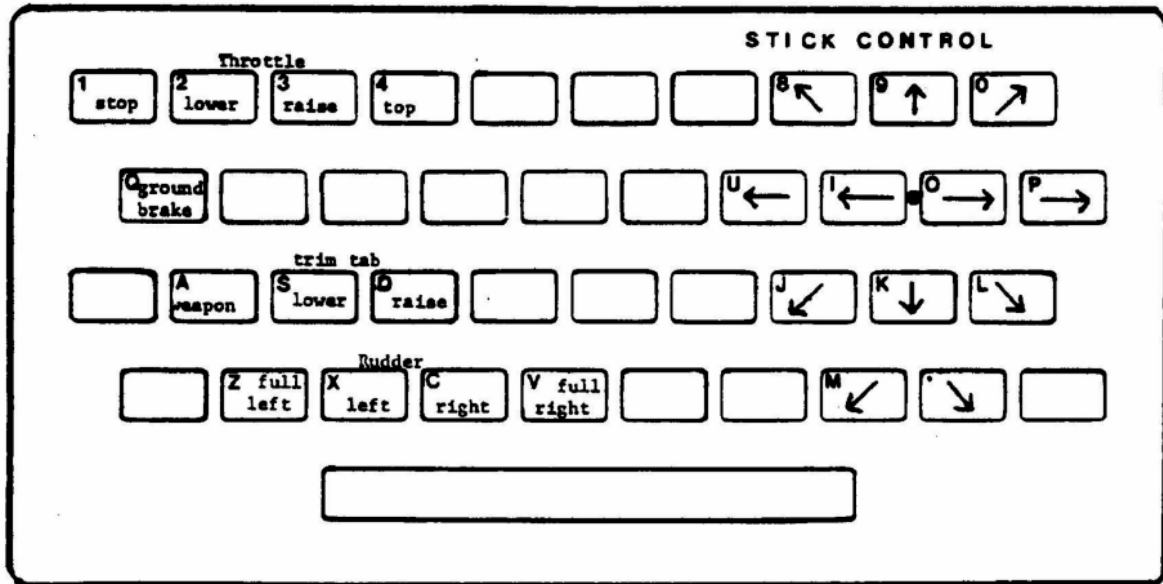
2d. See the inclosed template for the key commands.

2e. This is a list of the effects of the key controls:

1 - stops the engine.	9 - elevator down.
2 - lowers the throttle.	0 - elevator down, ailerons clockwise. (Zero)
3 - raises the throttle.	U - full ailerons counterclockwise.
4 - tops the throttle.	I - ailerons counterclockwise.
Q - ground brake.	O - ailerons clockwise. (Ooh)
S - lowers trim tab setting.	P - full ailerons clockwise.
D - raises trim tab setting.	J - elevator up, ailerons counterclockwise.
Z - full left rudder.	K - elevator up.
X - half left rudder.	L - elevator up, ailerons clockwise.
C - half right rudder.	M - full elevator up, ailerons counterclockwise.
V - full right rudder.	. - full elevator up, ailerons clockwise. (period)
8 - elevator down, ailerons counterclockwise.	

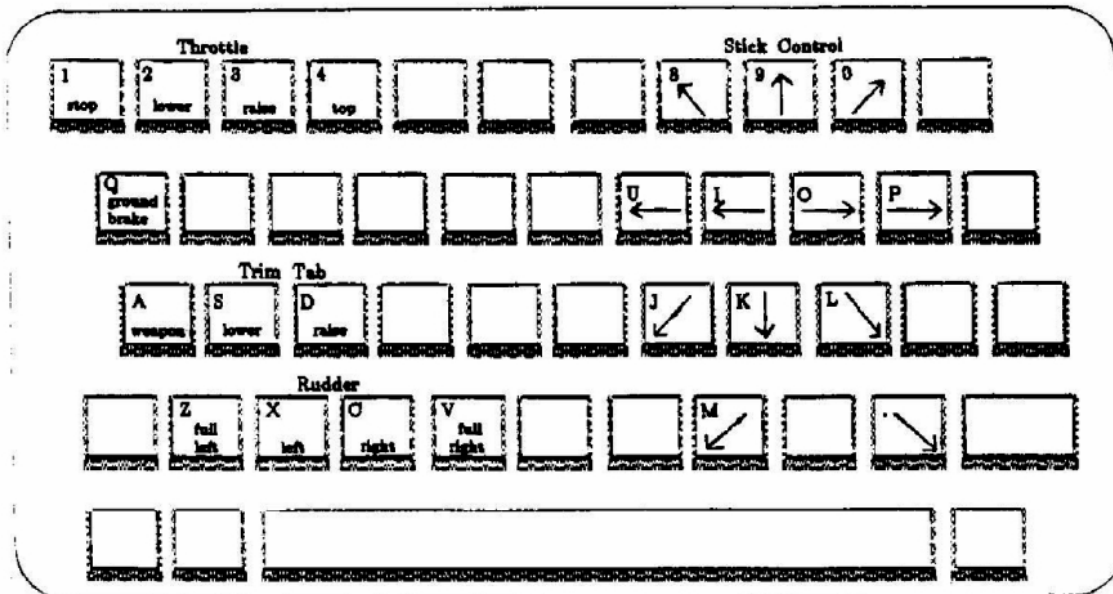
Two different views of the keyboard

WINGING IT



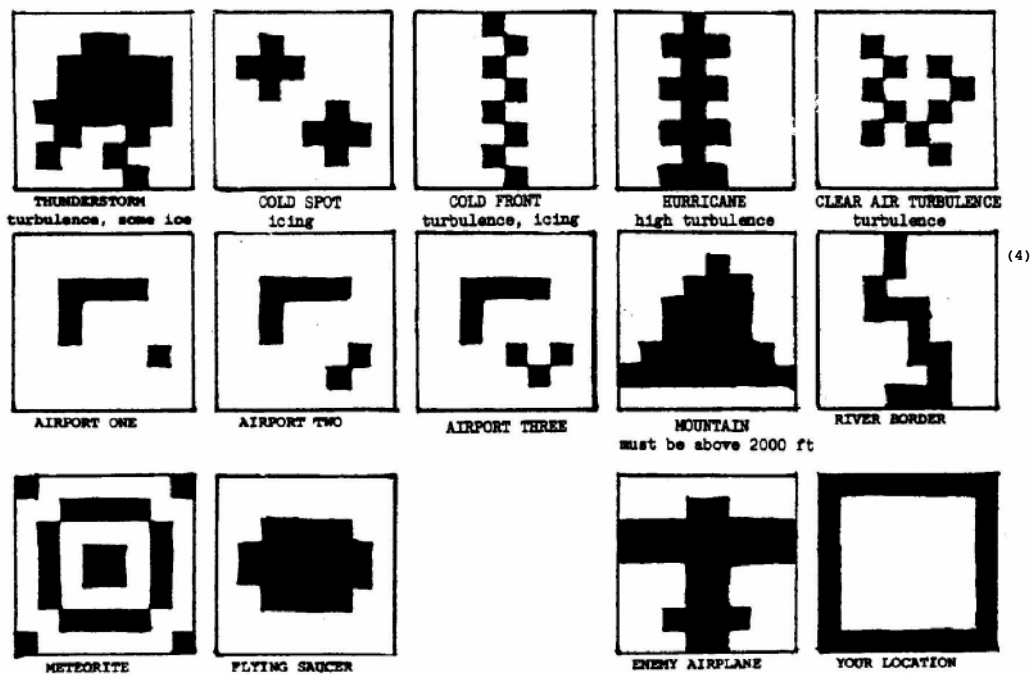
FOR 99/4 A OWNERS use alpha lock setting when playing this game

WINGING IT



Alpha Lock key must be down to play this game.





### 3. Games

3a. If you wish to fly without playing a game press 0 (zero) when asked.

3b. Game 1 is an aerial search for a fallen magnetic meteorite. The object is to find the meteorite and fly over it. The number displayed below the trim tab is a geiger counter; it is the product of the latitude of the plane minus the latitude of the meteorite, plus the longitude of the plane minus the longitude of the meteorite. After finding the meteorite you must then land.

3c. Game 2 shows a flying saucer on the ground map, moving in a random pattern. The pilot must fly over the flying saucer and re-lease his weapons. If the saucer flies out of sight of the ground map the pilot must rely on dead reckoning to find it again.

3d. Game 3 challenges the pilot to cross the river border shown on the ground map before an enemy plane can catch up to him. The river border is to the west. When the plane catches up to him the pilot must dive, climb, or turn to avoid getting shot. Watch out for gas tank hits

### 4. For the Beginner

WINGING IT is a simulation of flying an airplane with instruments only; the beginner will have difficulties.

The number one rule is to keep your plane right side up and don't roll onto your back because you may go into a violent dive. The second but not less important rule is to keep your nose near the horizon. Also, extreme dives or climbs should be avoided.



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