airplane in units of 1000 feet per minute. When the needle points upwards above the 0, the plane is climbing and vice versa.

POWER gauge on the bottom right measures the extent of the throttle. The thrust of the engines increases with throttle but reduces in the rarer atmosphere of higher altitudes.

FUEL gauge displays the fuel remaining in the tanks.

FLAPS shows the angle of extent of the flaps. The needle points downwards with maximum flap and is horizontal with the flaps retracted.

GEAR has a green and red panel. When the undercarriage or gear is up this will be indicated in the red panel, otherwise "down" will appear in the green panel.

BCN RGE BRG is a digital readout giving information on the current logged-on beacon. BCN gives the beacon call sign of the logged on beacon. RGE gives its range in nautical miles and BRG gives the bearing of the beacon in compass degrees relative to the airplane.

ILS is the Instrument Landing System dial on the left of the panel. It is a guidance system which aids the pilot in the approach to the runway. A radio beacon at the start of the runway emits a signal, the position of which is displayed on the ILS as a flashing dot. When the airplane is on the correct approach to the runway, the flashing dot will be at the centre of the ILS. If it is not at the centre, you the pilot should steer towards the dot. Thus if the dot, representing the runway is on the left, the pilot should bank to the left until the dot moves to the centre. If it is above the centre, the plane is too low and the joystick should be pulled back.

Ra or Radio altimeter is a digital readout and part of the ILS system. A reflected radio signal from the ground measures the height in feet of the airplane from the ground to the wheels. It gives a precise measurement for landing.

THE PILOT CONTROLS

Joy stick – The joystick of the airplane is represented on the keyboard of the ZX Spectrum by the cursor arrows (keys 5, 6, 7 and 8). Press ← (key 5) to bank left. Press → (key 8), to bank right. Press ↑ (key 7) to move the joystick forward and point the nose of the plane down for diving. Press ↓ (key 6) to pull the joystick towards you so that the nose of the plane goes up for ascent.

Rudder – The rudder on the tailplane can help to turn the plane and is controlled by the keys "Z" to turn left and "X" to turn right. While taxi ing on the ground, the gear is steered by the rudder controls.

Power – The engines' thrust or power is controlled by the keys "P" and "O". By pressing the key "P" the throttle is increased and the engines give more power while pressing key "O" reduces the throttle and engine power (note "O" is to the left of "P").

Flaps – The extent of the flaps on the wings is controlled by the keys "F" and "D". Press the key "F" to extend the flaps further and press the key "D" to retract, or partially retract, the flaps (note key "D" is to the left of key "F"). The flaps can be extended or retracted to a varying degree (as shown on the gauge) and should only be fully extended for the final stage of landing to avoid stalling at reduced speed. With the flaps retracted, the stall speed of the plane is 80 knots, while with full flaps, the stall speed is 60 knots. Extending the flaps while the plane is at high speed could possibly damage or tear off the wings of the plane.

Gear – The gear or undercarriage can be extended by pressing the key "G". If the gear is down pressing the key "G" will retract the undercarriage. The undercarriage should not be dropped at high speed as apart from increasing the drag on the plane you may damage or destroy the undercarriage.

Beacon – To change the current logged-on beacon,

Key	Pilot Control
↑	Joystick forward (dive)
↓	Joystick backward (climb)
→	Joystick to right (bank to right)
←	Joystick to left (bank to left)
Z	Rudder control (left)
X	Rudder control (right)
P	Increase throttle (more power)
O	Decrease throttle (less power)
F	Increase flap extent
D	Decrease flap extent
G	Lower gear (undercarriage) if up. Raise gear (undercarriage) if down.
B	Change beacon sequentially
M	Switch from cockpit display to navigational Map or back to cockpit.

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Sinclair
ZX Spectrum with 48K RAM
FLIGHT
Simulation