

BEDE

BD-5J

QUICK REFERENCE



AZURPOLY

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1\ INTRODUCTION

The BD-5J is a single-seat, single-engine, homebuilt jet aircraft sold as a kit by Bede Aircraft. The BD-5J, also called the Acrostar, is the jet-powered version of the BD-5, a pusher-propeller light aircraft that first flew on September 12, 1971.

The BD-5J was introduced in 1973 and holds the world record for being the smallest flying manned jet aircraft. The jet was famously used in a 1983 James Bond movie, Octopussy.

The BD-5J is 12 feet, 9 inches long, 5 feet, 7 inches high (at the top of its vertical stabilizer), and weighs approximately 400 pounds, empty. It features a low, swept main wing with a span of 17 feet, a traditional empennage, and retractable tricycle landing gear.

The aircraft is powered by a tail-mounted Microturbo TRS turbojet engine that generates 225 pounds of thrust.

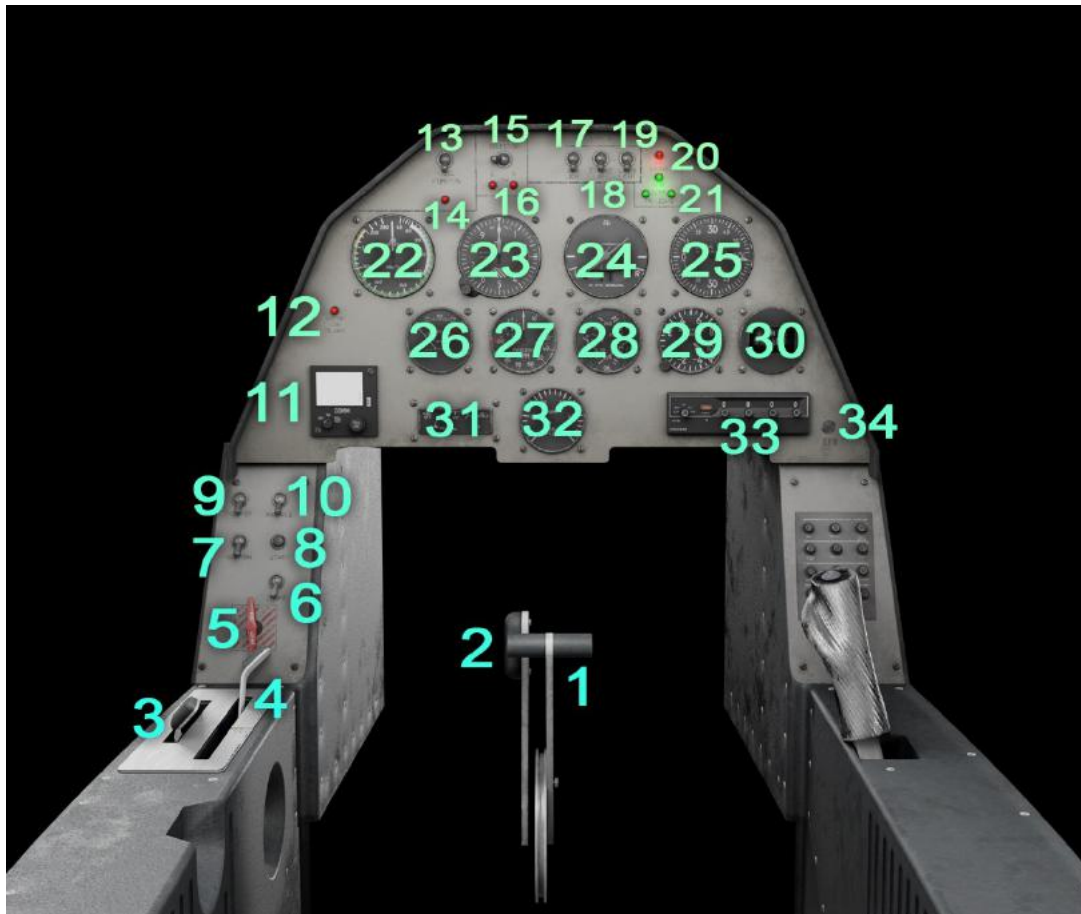
The Bede BD-5J is one of the most exhilarating aircraft in history to fly. From within the cockpit of the tiny jet, pilots can rocket up to altitude, perform aerobatics, or just cruise the heights.

2\ GENERAL DESCRIPTION

2.1\ Specifications

Weights	
Empty weight	195 kg
Maximum takeoff weight	408 kg
Maximum landing weight	390 kg
Dimensions	
Wingspan	5,18 m
Length	4,57 m
Height	1,52 m
Engine	
Fuel capacity	130 L
Dry weight	37 kg
Maximum thrust	1,1 kN
Maximum continuous	1,0 kN

2.2\ Detailed view



1	Landing gear handle	18	Strobe lights switch
2	Flaps handle	19	Cabin light switch
3	Throttle	20	Gear not locked light
4	Trim lever	21	Gear down lights
5	Fuel cutoff	22	Anemometer (kts)
6	Smoke switch	23	Altimeter (ft)
7	Ignition switch	24	Turn coordinator
8	Starter	25	Variometer (ft/min)
9	Master switch	26	Exhaust gas temperature (Celsius)
10	Avionics switch	27	Engine RPM (%)
11	Radio (COM 1)	28	Oil pressure (PSI) and temperature (Fahrenheit)
12	Low voltage light	29	Accelerometer
13	Fuel pump switch	30	Compass
14	Fuel pump light	31	Fuel level gauge
15	Fuel selector switch	32	Fuel flow (GPH)
16	Low fuel lights	33	Transponder
17	Navigation lights switch	34	EFB button

3\ AIRCRAFT SYSTEMS

3.1\ Flight controls

The BD-5 has classical mechanical flight controls. Flight stick is positioned on the right console.

An anti-servo tab assists pitch movement. Pitch trim is connected to the same tab from an electric actuator and can be set with the handle next to throttle.



3.2\ Electrical system

Electric supply is provided in flight, thanks to a generator, connected to the engine.

It can supply three different light systems:

- Strobe lights.
- Navigation lights.
- Cabin lights.



Even though the BD-5 has interior lights, it is not equipped for night flying as there is not any landing light.

3.3\ Fuel system

The BD-5J has two fuel tanks:

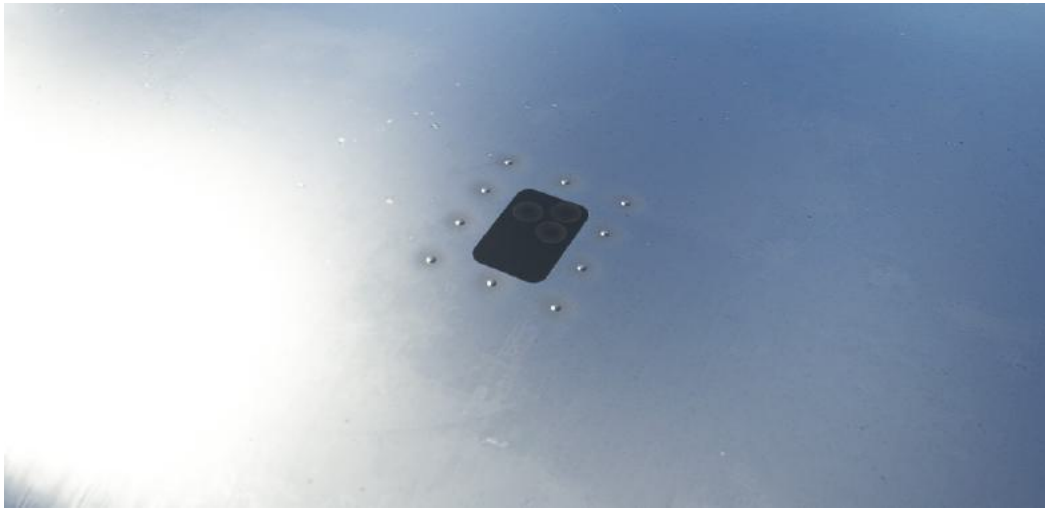
1. One tank in left wing.
2. One tank in right wing.

An electric fuel pump is connected to main electric circuit to assist in case of mechanical pump failure.

Fuel level gauge has been implemented in the aircraft for simplicity. However, most of BD-5 were not fitted with such a gauge.

Instead, six fuel prisms on each wing allow to determine fuel level. Each prism has a different length and will let light shine through it as soon as fuel level will drop below its base. Thus, six blank cylinders mean that no fuel remains in the tank.

You can see prisms on both wings with “INSTRUMENTS 04” and “INSTRUMENTS 05” cameras.



3.4\ Landing gear

The aircraft has a tricycle retractable landing gear. Each landing gear leg has one wheel. Main wheels are equipped with disc brakes.

Retracting mechanism is fully mechanic and cable operated.

A set of lights indicates:

- When landing gear is not locked (red light).
- When landing gear is extended and locked (one green light per leg).



3.5\ Flaps

Each wings hold a trailing flap, manually operated.

Three positions can be achieved: 0, 15 and 30 degrees.



3.6\ Radio

A simple radio is positioned on the main panel.

It allows to manage COM 1 frequency (active and standby). Left knob can be used to set volume.



3.7\ Transponder

The BD-5 is equipped with a regular transponder.

Four different knobs are used to set the code. Main knob allows to switch between different modes (OFF, SBY, TST, ON, ALT).



4\ ELECTRONIC FLIGHT BAG

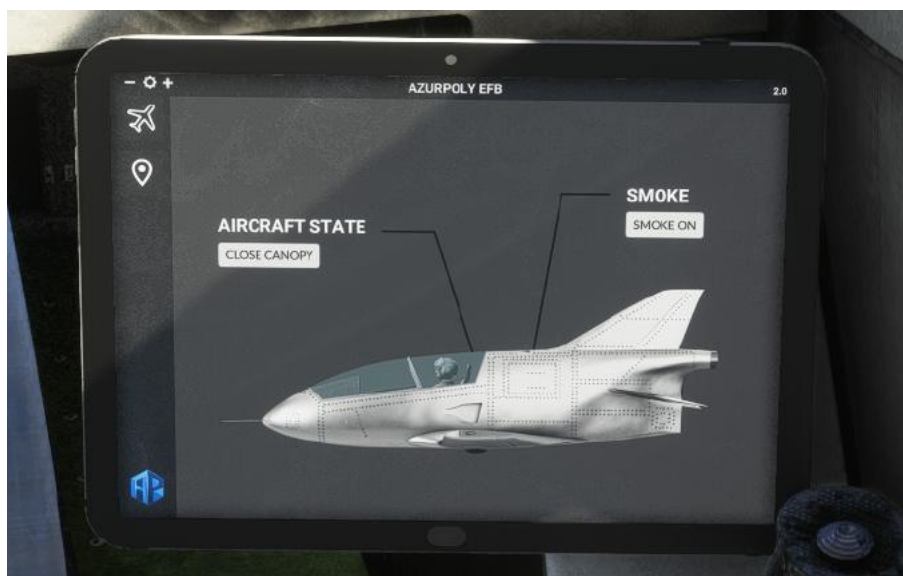
To help managing all actions related to the aircraft, an EFB has been implemented. It can be opened and closed thanks to a cockpit button.



When opened, screen brightness can be set from the top bar.

Aircraft state

This menu has two buttons, one for opening and closing aircraft canopy, the other to switch on/off white smoke.

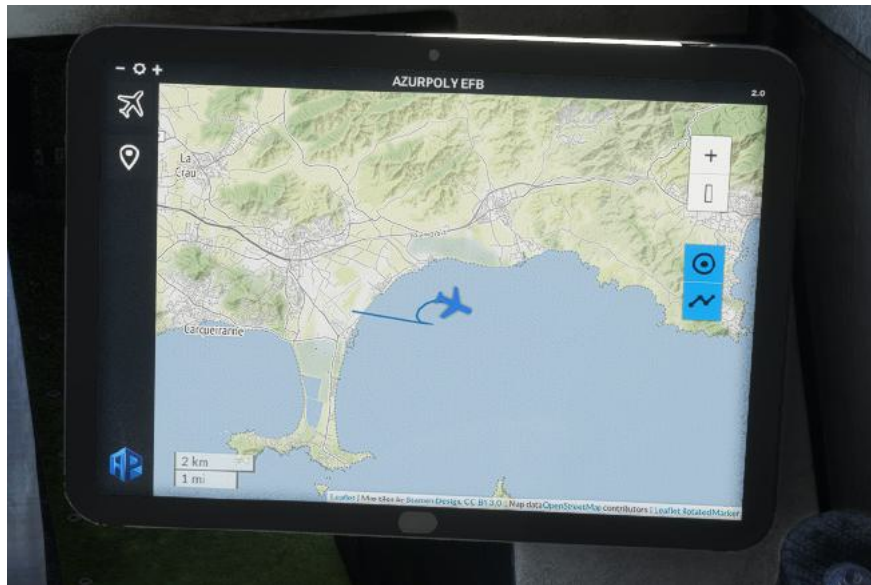


Map

This menu consists of a map showing current aircraft position.

Different controls on the right part allow to interact with the map:

- Zoom buttons.
- Button to stop auto centering to aircraft position.
- Trajectory button to show or hide aircraft path.



5\ NORMAL PROCEDURES

5.1\ Reference speeds

Stall speed (full flaps)	60 kts
Stall speed (no flaps)	65 kts
Rotation speed	75 kts
Final approach speed	85 kts
Maximum flaps extended (VFE)	130 kts
Maximum gear extended (VLO)	140 kts
Maneuvering speed (VA)	170 kts
Maximum speed in turbulent air (VNO)	200 kts
Never exceed speed (VNE)	250 kts

5.2\ Checklists

In addition to this manual, you can find in-game interactive checklists to help you complete each step.

STARTING ENGINE

Fuel valve	OPENED
Master	ON
Ignition	ON
Area	CLEAR
Strobes	ON
Starter	ON
Throttle	IDLE
EGT	MAX 500°C
N1	30-40 %

BEFORE TAXI

Avionics	ON
Brakes	CHECKED
Flight controls	FREE
Compass	CHECKED

BEFORE TAKEOFF

Canopy	CLOSED
Flaps	15 degrees
Seat belts	SECURE
Fuel pump	ON
Trim	T/O
Accelerometer	RESET
Transponder	ALT

AFTER TAKEOFF

Security height	CHECKED
Landing gear	UP
Flaps	RETRACTED
Fuel pump	OFF

BEFORE LANDING

Flaps	30 degrees
Landing gear	DOWN

AFTER LANDING

Flaps	RETRACTED
Transponder	SBY
Seat belts	RELEASED

SHUTDOWN

Throttle	IDLE
Radio	OFF
Transponder	OFF
Avionics	OFF
Ignition	OFF
Fuel valve	CLOSED
Master	OFF