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## Daedalus BS214



The Daedalus BS214 is a prototype experimental twin-engine aircraft. It features a tricycle high-wing design and accommodates two seats, boasting Bush STOL capabilities.

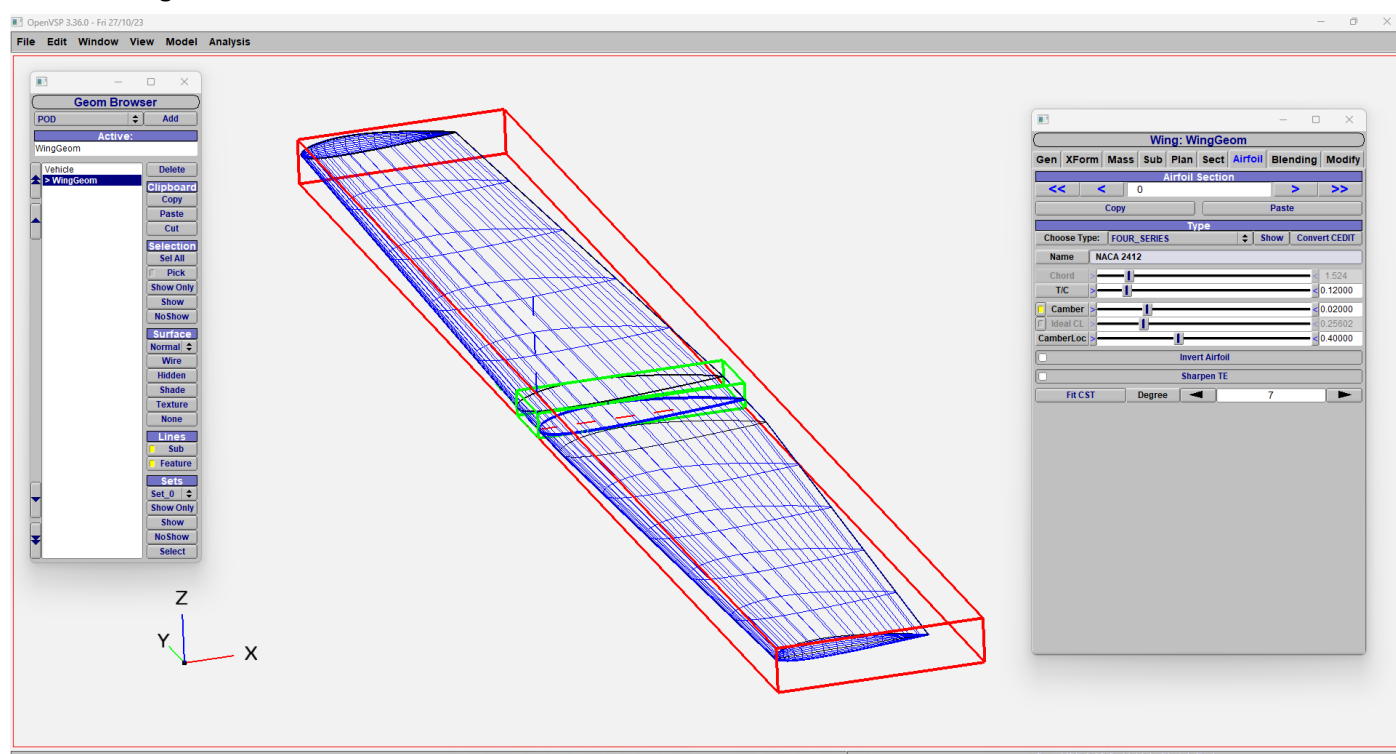
The aircraft was named in honor of Daedalus (Δαίδαλος), the famous ancient Greek architect and engineer who, according to Greek mythology, was the first man who build wings that he and his son Icarus used to escape from Crete. Icarus (Ἰκαρος) was the first man flew in the sky.

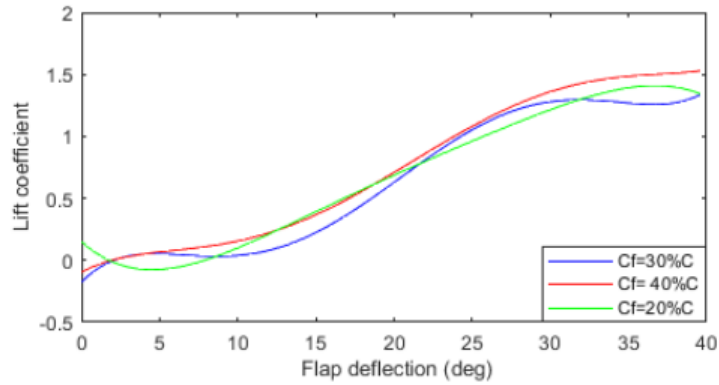
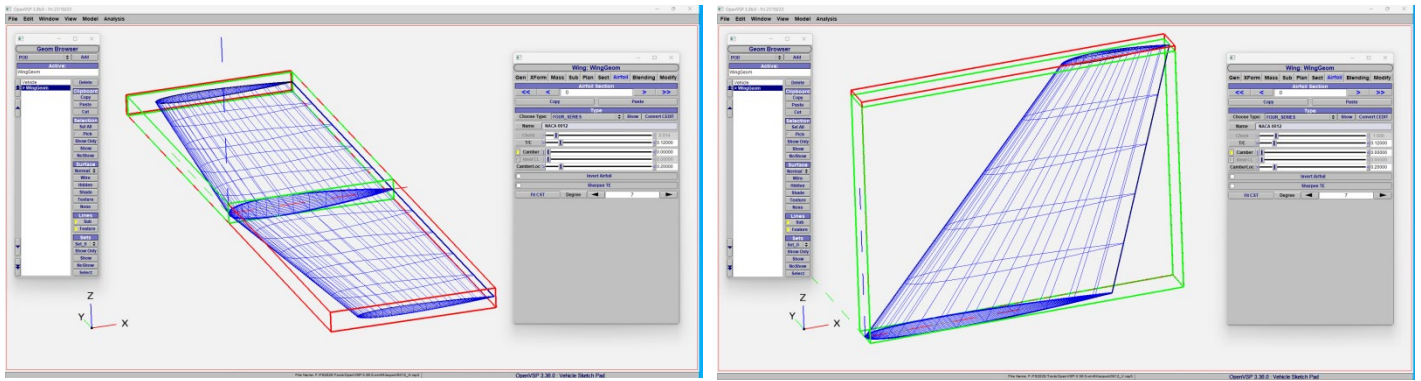
### Design

The Daedalus BS214 was designed and built for Microsoft Flight Simulator.

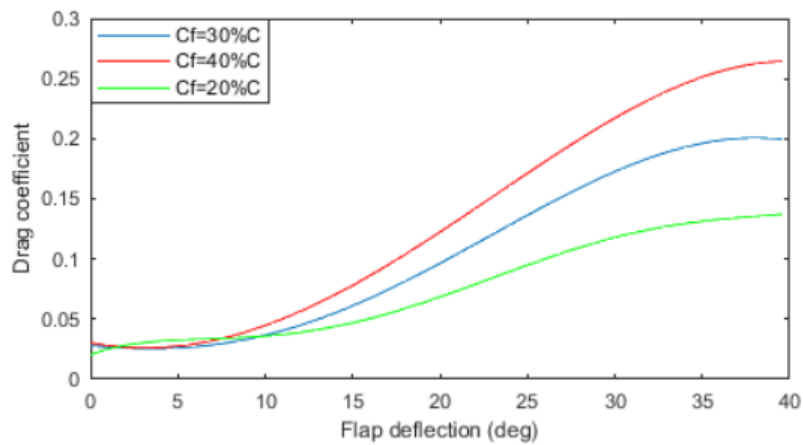
It was created using NASA's OpenVSP software (airfoils, wings, fuselage, calculations of areas, dimensions, lift polar, drag polar, etc.) and finalized in Blender. Real-world data and formulas were employed to calculate all necessary specifications, such as weight, surface areas, dimensions, etc.

The 3D model aligns precisely with the flight model, ensuring that what you see is accurately represented in Microsoft Flight Simulator.





**Figure 6.** Lift coefficient variation with flap deflection angle at zero attack angle



## Airframe

Fuselage, wings and tail are made by carbon fiber to increase strength and reduce weight. Fuselage designed such as to minimize drag, due to the increased drag produced by the fixed landing gear system.

Wings designed with a modified NACA 2412 airfoil. Horizontal and vertical stabilizers designed with the NACA 0012 airfoil.

## Technical Specifications

### Engines

Number of engines: 2  
 Engine Manufacturer: Rotax  
 Engine Model: 915iSc3 C24

### Dimensions External

|                                               |                      |                     |
|-----------------------------------------------|----------------------|---------------------|
| Total Length                                  | 8.03 m               | 26.35 ft            |
| Maximum Height                                | 3.45 m               | 11.32 ft            |
| Maximum Fuselage Width                        | 1.46 m               | 4.79 ft             |
| Wing span (incl. wing tip lights)             | 11.00 m              | 36.10 ft            |
| Wheel track                                   | 2.60 m               | 8.53 ft             |
| Maximum propeller diameter                    | 1.70 m               | 5.58 ft             |
| Wing area (projected)                         | 14.86 m <sup>2</sup> | 160 ft <sup>2</sup> |
| Wing mean aerodynamic chord (MAC)             | 1.429 m              | 4.688 ft            |
| Distance of MAC leading edge to Datum (MACLE) | 0.357 m              | 1.172 ft            |

### Dimensions Internal

|                  |        |         |
|------------------|--------|---------|
| Cabin height max | 1.22 m | 4.00 ft |
| Cabin length max | 3.04 m | 9.97 ft |
| Cabin width max  | 1.36 m | 4.46 ft |

### Weight

|                             |        |          |
|-----------------------------|--------|----------|
| Max. Take-off weight        | 894 kg | 1970 lbs |
| Max. Landing weight         | 894 kg | 1970 lbs |
| Empty weight                | 510 kg | 1125 lbs |
| Max weight of fuel (76 USG) | 214 kg | 471 lbs  |

### Approved maneuvers

1. All standard maneuvers during normal flight
2. Stalls (except whip stalls)
3. Non-aerobatic maneuvers:
4. Lazy eight
5. Chandelle
6. Steep turn in which the angle of bank is not more than 60°

### Maneuvering load factors

Maximum positive limit load factor

|                            |        |
|----------------------------|--------|
| Flaps UP                   | +4 g   |
| Flaps - any other position | +2.8 g |

Maximum negative limit load factor

|                            |        |
|----------------------------|--------|
| Flaps UP                   | -3.2 g |
| Flaps - any other position | -2.4 g |

## Flight crew

Number of seats: 2  
Minimum crew: 1 pilot on the left or right seat

## Kinds of operation

Day: VFR – IFR  
Night: VFR - IFR  
FIKI (fly into known icing)

## Fuel

|               |                          |
|---------------|--------------------------|
| Tank capacity | 38 USG in each fuel tank |
| Total fuel    | 2 x 38 USG = 76 USG      |
| Usable fuel   | 2 x 37 USG = 74 USG      |
| Unusable fuel | 2 x 1 USG = 2 USG        |

Approved fuel grades:

- EN 228 Super and Super Plus (RON 95)
- AVGAS 100LL (ASTM D910)

## Maximum passenger seating

Maximum passenger seating: 1

## Other limitations

|                                     |                      |
|-------------------------------------|----------------------|
| Maximum certified altitude          | 23000 ft             |
| Outside air temperature OAT (range) | (Limited by Coolant) |
| Max OAT at SL                       | 50 °C                |
| Min OAT at 23000 ft                 | -50 °C               |

Autopilot engagement during take-off and landing is PROHIBITED.  
Smoking prohibited.

## Glide

1. Speed: 62 KTAS
2. Flaps: Retracted

## Power to weight ratio

The aircraft has a high power-to-weight ratio of 0.2707 hp/kg (0.1228 hp/lb), which gives it some unique characteristics, including fast acceleration and a high climb rate of 2,600 fpm or more. To ensure a smooth takeoff and climb, you need to set the pitch trim for takeoff correctly:

- 1.5° for 894 kg (1,970 lbs) - (Pilot, Copilot, 100% Fuel) - In MSFS2024 set to 0.5°
- 1.0° for 768 kg (1,693 lbs) - (Pilot, Copilot, 50% Fuel) - In MSFS 2024 set to 0°
- For other weights, adjust accordingly >>

| Airspeed Limitations                                             |       |      |     |
|------------------------------------------------------------------|-------|------|-----|
| Speed                                                            | Flaps | KIAS | KTS |
| Never Exceed (VNE)                                               |       | 180  |     |
| Maximum Structural Cruising (V <sub>NO</sub> or V <sub>C</sub> ) |       | 140  |     |
| Maneuvering (V <sub>A</sub> )                                    |       | 96   |     |
| Maximum Flap Extension/ Extended (VFE)                           | (25°) | 100  |     |
|                                                                  | (40°) | 80   |     |
| Single-Engine Minimum Control Speed (VMCA)                       |       | 53   |     |
| Best Climb Speed (V <sub>Y</sub> )                               |       | 100  |     |
| Best Climb Speed Single Engine (V <sub>YSE</sub> )               |       | 75   |     |
| Rotation Speed (V <sub>R</sub> )                                 | (15°) | 50   |     |
|                                                                  | (0°)  | 65   |     |
| Take-Off Speed (V <sub>TO</sub> )                                | (15°) | 55   |     |
|                                                                  | (0°)  | 70   |     |
| Approach Speed (V <sub>APP</sub> )                               | (25°) | 70   |     |
|                                                                  | (40°) | 51   |     |
| Flaps Up Stall Speed                                             |       | 48   |     |
| Flaps Full Stall Speed                                           |       | 35   |     |
| Best Glide Speed (V <sub>G</sub> )                               |       |      | 62  |

## Performance

Standard day: 15° C at Sea Level

| Weight            | Pitch Trim for Take-Off |           |
|-------------------|-------------------------|-----------|
|                   | MSFS 2020               | MSFS 2024 |
| 768 Kg / 1693 Lbs | 1.0°                    | 0°        |
| 871 Kg / 1920 Lbs | 1.5°                    | 0.5°      |

**Take Off Performance****Weight: 871Kg / 1920 Lbs - Standard Day No Wind**

|                  | Ground Roll |     | 15m (50ft) obstacle clearance |     | Take Off Speed |
|------------------|-------------|-----|-------------------------------|-----|----------------|
|                  | m           | ft  | m                             | ft  | Vto KIAS       |
| <b>Flaps 15°</b> | 100         | 328 | 206                           | 676 | 55             |
| <b>Flaps 0°</b>  | 125         | 410 | 231                           | 758 | 68             |

**Climb Performance****Weight: 871Kg / 1920 Lbs - 5500 RPM****100 KIAS - 0° Flaps - Standard Day No Wind**

| Altitude | Vert. Speed |
|----------|-------------|
| Ft       | Fpm         |
| 1000     | 2550        |
| 10000    | 2550        |
| 12000    | 2525        |
| 14000    | 2500        |
| 15000    | 2475        |
| 16000    | 2300        |
| 17000    | 2125        |
| 18000    | 1950        |
| 19000    | 1750        |
| 20000    | 1550        |
| 21000    | 1350        |
| 22000    | 1150        |

**Single Engine Climb Performance****Weight: 871Kg / 1920 Lbs - 5500 RPM****75 KIAS - 0° Flaps - Standard Day No Wind**

| Altitude | Vert. Speed |
|----------|-------------|
| Ft       | Fpm         |
| 1000     | 1100        |
| 10000    | 1000        |
| 12000    | 975         |
| 14000    | 925         |
| 15000    | 900         |
| 16000    | 850         |
| 17000    | 775         |
| 18000    | 700         |
| 19000    | 650         |
| 20000    | 575         |
| 21000    | 500         |
| 22000    | 400         |

Cruise PerformanceWeight: 871Kg / 1920 Lbs - 5200 RPM - Standard Day No Wind

| Altitude         | Manifold | IAS | TAS | Fuel Burn | Range |
|------------------|----------|-----|-----|-----------|-------|
| Ft               | In Hg    | Kts | Kts | USG x 2   | Nm    |
| <b>Sea level</b> | 30       | 114 | 116 | 5,5       | 780   |
|                  | 38       | 135 | 137 | 8,3       | 611   |
|                  | 44,9     | 149 | 151 | 10,7      | 522   |
| <b>10000</b>     | 30       | 114 | 132 | 6         | 814   |
|                  | 38       | 133 | 155 | 8,9       | 644   |
|                  | 44,9     | 145 | 169 | 11,3      | 553   |
| <b>15000</b>     | 30       | 113 | 142 | 6,2       | 847   |
|                  | 38       | 131 | 165 | 9,1       | 671   |
|                  | 44,9     | 143 | 179 | 11,5      | 576   |
| <b>23000</b>     | 27       | 102 | 147 | 5,4       | 1007  |
|                  | 30       | 111 | 159 | 6,6       | 891   |
|                  | 32,4     | 116 | 167 | 7,5       | 824   |

Single Engine Cruise PerformanceWeight: 871Kg / 1920 Lbs - 5200 RPM - Standard Day No Wind

| Altitude         | Manifold | IAS | TAS | Fuel Burn | Range |
|------------------|----------|-----|-----|-----------|-------|
| Ft               | In Hg    | Kts | Kts | USG       | Nm    |
| <b>Sea level</b> | 30       | 86  | 87  | 5,5       | 1171  |
|                  | 38       | 103 | 105 | 8,3       | 936   |
|                  | 44,9     | 114 | 116 | 10,7      | 802   |
| <b>10000</b>     | 30       | 85  | 99  | 6         | 1221  |
|                  | 38       | 101 | 117 | 8,9       | 973   |
|                  | 44,9     | 111 | 129 | 11,3      | 845   |
| <b>15000</b>     | 30       | 84  | 106 | 6,2       | 1265  |
|                  | 38       | 99  | 124 | 9,1       | 1008  |
|                  | 44,9     | 108 | 135 | 11,5      | 869   |
| <b>23000</b>     | 27       | 73  | 105 | 5,4       | 1439  |
|                  | 30       | 81  | 116 | 6,6       | 1301  |
|                  | 32,4     | 86  | 124 | 7,5       | 1223  |

Landing Distance: 110 m / 361 ft

| Max Demonstrated Crosswind | Take-Off  | Landing   | Take-Off | Landing   |
|----------------------------|-----------|-----------|----------|-----------|
|                            | Flaps 15° | Flaps 40° | Flaps 0° | Flaps 25° |
|                            | 15 Kts    |           | 20 Kts   |           |

Due to the high center of gravity (CG), the aircraft is more sensitive to crosswinds, which affects its lateral stability during ground operations. During takeoff, landing, and taxiing, when there is a crosswind component, the ailerons should always be turned into the wind (more or less, depending on the crosswind component) to keep the wings level.



## Aircraft Systems and Description

### Airframe

The main airframe of the Daedalus BS214 aircraft is constructed from aluminum, while the fuselage is made of carbon fiber.

### Wings - Tail

The wings and tail (horizontal and vertical stabilizers) are made of carbon fiber. The ailerons, flaps, elevator, and rudder are also carbon fiber structures. The wing and tail feature electrothermal leading edges for anti-icing protection. Flaps are designed as single-slotted surfaces.

### Aileron control

The ailerons are actuated with yokes. The movement of the yokes is synchronized via pushrod lead between the inside of the elevator control torque tube. The ailerons have differential actuation, to minimize the unwanted secondary yawing caused by aileron deflection.

### Elevator control and elevator trim tab control

The elevator is controlled by moving the yoke forward and aft. A system of transmission levers and pushrods transfers the yoke's movements to the elevator. An electric actuator installed in the horizontal stabilizer controls the elevator trim tab. Control switches are integrated into both yokes.

### Rudder control and rudder trim tab control

The rudder is controlled using foot pedals. Pedal deflections are transferred to the rudder via a cable-pulley system. The pedals also control the nose gear steering. The rudder is equipped with a fixed trim tab. The rudder trim tab is controlled by an electric actuator located inside the vertical stabilizer. Control switches for the trim tab are integrated into both yokes.

### Wing flaps control

The wing flaps are controlled by a central electric actuator connected to the flaps through a lateral torque tube with transfer pushrods on each wing. The flap actuator is located in the upper channel of the fuselage between the wings and is operated by a programmable control unit with a four-position lever located on the main panel.

Four LED indicators are integrated into the control unit to confirm flap positions (and transitions, indicated by blinking). Wing flaps can be deflected to 0°, 15°, 25°, and 40°.

### Nose wheel control

The turning of the nose wheel fork is controlled via the rudder control system. The nose wheel has a travel range of 40°.

### Landing gear system

The Daedalus BS214 features a fixed, three-wheel landing gear system consisting of the main landing gear and the nose landing gear.

### Main landing gear

The main landing gear comprises composite landing gear legs, a wheel axle, and wheels equipped with hydraulic disc brakes.

## Nose landing gear

The nose landing gear is steerable. It consists of a welded steel leg, a steerable wheel fork, a shock absorber (spring and oil damper) and the nose wheel itself.

## Wheel brakes

The aircraft is equipped with an individual hydraulic disc brake system for the main landing gear wheels, powered by Beringer. The braking system includes brake pedals (foot tips on the rudder control pedals), brake pumps, hoses for brake fluid supply, double-piston brake calipers, double ventilated disc brakes, and brake pads.

Pressing the pedals compresses the brake pumps, generating pressure in the brake circuit and causing the calipers to push the brake pads against the brake discs. Braking pressure is controlled via the force applied to the brake pedals.

The aircraft is also equipped with a manually controlled hydraulic parking brake, which is activated by pressing the brake pedals and pulling the parking brake control on the main panel.

## Powerplant

The standard power unit of the Daedalus BS214 airplane consists of two ROTAX 915iSc3 C24 engines paired with MTV-34 constant-speed, 3-blade propellers.

## Engines

The ROTAX 915iSc3 is a 4-stroke, 4-cylinder opposed engine capable of producing a maximum power of 104 kW (141 hp) at 5800 RPM. The engine is liquid-cooled and equipped with a turbocharger, enabling maximum continuous performance up to 15,000 ft.

The propeller is driven through a gearbox with a gear ratio of 2.54. Propellers are controlled by hydraulic governors.

The right engine rotates counter-clockwise, which means the aircraft has no critical engine. This setup simplifies flight control operations, requiring no rudder trim during normal flight phases. In the event of an engine failure (left or right), minimal rudder trim is needed to maintain aircraft balance.

## Propellers

The MTV-34 propeller is a hydraulically adjustable, three-blade wooden-composite propeller designed for light aircraft with piston engines up to 104 kW (141 hp). The maximum propeller speed is 2279 RPM.

The propeller spinner is a part of the propeller. The propellers are constant-speed, full-feathering, with a feathered blade angle of 88.0° and a low pitch blade angle of 8.0°.

The leading edges of the propellers are electrically heated for anti-ice protection.

## Fuel system

Fuel is stored in two integrated wing tanks, each with a capacity of 38 USG (37 USG usable fuel). Two fuel selectors are located on the overhead panel, offering three positions: Off, On, and Cross-feed. In the 'On' position, each tank feeds its respective engine. In the 'Cross-feed' position, fuel from either tank will be routed to the opposite engine.

The engine model does not include internal fuel pumps. External, mechanically driven fuel pumps have been installed, providing a pressure of approximately 3.0 bar. Additionally, each engine has an electrical backup fuel pump providing the same pressure. In the event of a mechanical fuel pump failure, the backup pump ensures continued engine operation.

## Electrical system

The airplane is equipped with a 28V DC electrical installation with grounded negative pole. Primary electrical power is supplied by two external alternators, while secondary power comes from two 24V batteries located inside the cabin aft of the baggage compartment.

The specific engine model does not include integrated generators. Instead, each engine is equipped with a 28.5V, 100A alternator, which is belt-driven and permanently attached to the engines. A third 70V, 70A alternator is installed on the right engine. This gear-driven alternator supplies current exclusively to the airframe anti-ice system and is activated via the surface anti-ice switch on the main panel's anti-ice subpanel.

## Pitot tube

The Pitot tube, featuring an angle-of-attack (AOA) sensor, is located beneath the right wing. The Pitot tube is electrically heated for reliable operation in varying atmospheric conditions.

## Stall warning system

The airplane is equipped with a vane-type stall warning unit, in the leading edge of the left wing, which is electrically connected to a stall warning horn. The stall warning uses AOA as well as normal and pitch acceleration (G3X system). It is set to warn the pilot (constant tone) when approaching a stall, approximately 5 knots above stall speed.

The stall warning unit is electrically heated for reliable operation in icing conditions.

## Anti-ice system

The Daedalus BS214 is certified for Flight Into Known Icing (FIKI) due to its advanced anti-ice protection system.

- **Airframe Protection:** A Low Power Electrothermal De-icing (LPED) system is installed on the leading edges of the wings, horizontal stabilizer, and vertical stabilizer. This system is powered by a 70V, 70A gear-driven alternator and activated via a switch with an LED indicator on the main panel's anti-ice subpanel. An ampere gauge on the pedestal displays the system's current draw.
- **Propeller Protection:** The propellers have electrically heated leading edges powered by the electrical sources (alternators and batteries). A dedicated switch for propeller heating is located on the anti-ice subpanel, along with an ampere gauge located on the pedestal displaying the system's current draw.
- **Induction System Protection:** In the event of induction system icing, an alternate air door automatically opens. When open, the engines draw air from within the cowlings, bypassing the inlet filters.

## Cabin

Access to the cockpit is from both sides after opening the doors. Please note that in MSFS 2020 control animations from the external camera view are not supported.

The cabin is ventilated with fresh air supplied through fuselage-side ducts, vent outlets below the main panel, and adjustable vent outlets on either side of the overhead panel. Ram airflow is controlled by the cabin air lever, while the ventilation fans are operated via the ventilation fan switch.

## Cockpit lay-out, Seats and safety harness

The cockpit features two side-by-side seats constructed from carbon fiber and Kevlar sandwich panels with leather upholstery. Each seat is equipped with an ETSO-approved three-point safety harness, consisting of two lap straps, one shoulder strap, and a safety harness lock. The lap and shoulder straps are adjustable, with the shoulder strap routed through clips on the cabin sidewall.

## Baggage compartment

A rear baggage compartment is located behind the seats, with a maximum capacity of 23 kg (50 lbs). Heavy items are prohibited in this compartment.

## Oxygen

The Daedalus BS214 is equipped with an oxygen system as part of its type design. An oxygen bottle is mounted aft of the seats, behind the baggage compartment. A high-pressure tube connects the oxygen bottle to cannulas located on the overhead panel. The oxygen flow is controlled via a switch on the overhead panel, and an oxygen pressure gauge monitors the system.

The oxygen system is designed to provide oxygen for up to two people for six hours at an altitude of 23,000 ft. This system operates independently of the electrical system and can be activated at any time, whether on the ground or in flight.

## Avionics

The aircraft comes in three variations:

1. G3X MFD (Default)
2. PMS750 (Integrated VC GTN750 by PMS50) Optional Extra
3. TDS750 ((Integrated VC GTN750 by TDS Sim) Optional Extra

The G3X MFD variation has the following avionics:

- 2 GDU 460 units (PFD)
- 1 GDU 460 unit (MFD)
- GTX 345 Remote-mount ADS-B "In"/"Out" Transponder
- GMA 245R Remote Audio Processor
- GTR205xR Remote COMM Radio
- GMC 307 Autopilot with Yaw Damper
- Attitude and Speed Backup instrument
- Trim/cabin temperature instrument

The remote units are controlled by the G3X Touch displays

The GTN750 variations have the following avionics:

- 2 GDU 460 units (PFD)
- 2 GTN 750 units
- GTX 345 Remote-mount ADS-B "In"/"Out" Transponder
- GMA 35 Remote Audio Processor
- GMC 307 Autopilot with Yaw Damper
- Attitude and Speed Backup instrument
- Trim/cabin temperature instrument

The remote units are controlled by the GTN750 or by the G3X Touch displays

## A/C

The aircraft is equipped with an automated air conditioning (A/C) system. The A/C unit is mounted on the left engine and integrates several components for optimal cabin climate control. These include:

- An A/C power switch
- A target temperature adjustment knob
- A cabin temperature monitoring instrument

The system works in conjunction with the ventilation fans switch and the cabin air lever to maintain the desired cabin environment.

## Main Panel



## Master

The master subpanel includes switches for the following:

- BAT 1 (Battery 1)
- BAT 2 (Battery 2)
- ALT 1 (Alternator 1)
- ALT 2 (Alternator 2)
- AVIONICS

Alternators 1 and 2 are the primary electrical power sources, while Batteries 1 and 2 serve as secondary sources. The electrical system is designed to allow operation with only one electrical power source (either an alternator or a battery). Each alternator has the capability to charge both batteries.

In normal operation, both batteries and alternators should be switched ON. The avionics switch controls power to devices connected to the avionics bus.

## Lights

The lights panel includes switches for:

- BEACON (Beacon light)
- NAV (Navigation lights)
- STROBE (Strobe lights)
- TAXI (Taxi lights)
- LANDING (Landing lights)

All lights use LED technology. Lights should be operated as required based on flight conditions.

## Anti-ice

The anti-ice subpanel includes switches that control the aircraft's anti-ice protection systems:

- **PITOT HEAT and STALL HEAT:** These should be turned ON when the Outside Air Temperature (OAT) is below 5°C.
- **WINDSHLD (Windshield Heat Switch):** Activates heating to defrost the windshield, door windows, and rear window.
- **PROP (Prop Heat Switch):** Heats the leading edges of the propeller blades using the aircraft's electrical power. The system operates in a timed sequence and can run continuously during flight. It functions automatically until the switch is turned off.
- **SURFACE (Airframe Heat Switch):** Activates the third 70V, 70A alternator on the right engine, powering the Low Power Electrothermal De-icing (LPED) system. This system heats the leading edges of the wings, horizontal stabilizer, and vertical stabilizer. A green LED on the switch indicates normal operation. The

system can run continuously in flight and shuts off when the switch is turned off (both the airframe heat and the third alternator). The right engine must operate above 2000 rpm to enable the alternator to produce enough current.

- **WING LT (Wings Light Switch):** Turns ON two small lights located on either side of the fuselage near the wings, allowing pilots to observe ice accumulation during night operations.

## Engines

### *ECU (Engine Control Unit)*

The Engine Management System (EMS) has the following main functionality

- Ignition control
- Fuel injection control
- Fault detection

Parts of the Engine Management System are Sensors, Actuators, the ECU and the wiring harness. The core of the EMS is the engine control unit (ECU), which consists of two modules. These modules will be denoted by LANE A and LANE B, each one capable of taking over control, regulation and monitoring of the engine. In error-free engine operation, both Lanes are turned ON.

### **Ignition control**

The 915 iSc3 is equipped with 4 double ignition coils. The ignition system is almost entirely wear-free, as the ECU generates and processes the ignition signal electronically.

### **Fuel injection control**

The engine is equipped with an electronic fuel injection system. This system is controlled by the ECU and enables highly accurate metering of the fuel according to operating and load conditions, whilst at the same time also taking ambient conditions into account. The key input variables are throttle valve position, engine speed signal, intake air temperature, ambient pressure, manifold pressure and exhaust temperature. Ultimately, the required fuel quantity or injection period is determined based on the calculated air density in the airbox, which is continuously monitored.

### **Power supply**

A Fusebox takes care of the energy management and allows selecting whether the EMS is supplied by an external power source (e.g. one of the batteries) or one of the alternators. The selection of which alternator is powering the EMS depends on the engine status and can only be done by the Engine Control Unit (ECU). During the engine start an external power source (battery) is needed to power the EMS. . Once the engine speed is sufficiently high to power the EMS with the alternator, the external power source is only required in emergency situations.

There are four lane switches: LANE A and LANE B for ECU 1 (left engine) and LANE A and LANE B for ECU 2 (right engine), located on the engine subpanel.

### *Starters*

Each engine has an attached starter that is controlled by the corresponding starter push button located on the engine subpanel. The starters are powered by the batteries. To start an engine (by pushing the STARTER button), both lane switches (A and B) must be turned ON. The LANE A and LANE B indicator lamps will light up and should extinguish after approximately 3 seconds.

### **Note**

The doors should be closed before starting the engines (for safety reasons due to the position of the propellers). Engines will not start if the respective door is open. While engines are running, the doors will remain self-locked. Pull the SELF LOCK circuit breaker to unlock in case of emergency.

## *Fuel Pumps*

Each engine has a mechanical fuel pump that provides a fuel pressure of approximately 3.0 bar. There are two backup electrical fuel pumps -one for each engine- that also provide a fuel pressure of around 3.0 bar and the same fuel flow rate as the mechanical fuel pumps. The electrical backup fuel pumps are controlled by ON/OFF switches located on the engine subpanel. The functionality of the backup electrical fuel pumps should be checked before starting the engines and prior to take-off.

Electrical fuel pumps should be activated in the event of a mechanical fuel pump failure.

## *Prop sync*

The propeller synchronizer automatically matches the RPM of both propellers, with a range of authority limited to approximately 25 RPM. While normal governor operation remains unchanged, the synchronizer continuously monitors propeller RPM and adjusts one governor as necessary.

A toggle switch on the main panel activates the system. To operate the system, manually synchronize the propellers, and then turn the PROP SYNC switch ON. To change the RPM, adjust both propeller controls simultaneously to keep the settings within the system's limiting range. If the PROP SYNC switch is ON but unable to adjust the propeller RPM, the system has reached its range limit. In this case, turn the PROP SYNC switch OFF, manually synchronize the propellers, and then turn the PROP SYNC switch ON again. An LED above the switch indicates the system's operation.

Please note that both engines must be running to synchronize the propellers.

## *Flaps*

The FLAPS lever is located on the main panel and has four positions: 0°, 15°, 25°, and 40°. Four LED indicators adjacent to the lever confirm the flap positions (including transitional states that blink). To operate the flaps, the aircraft must be electrically powered.

For short-field takeoffs, flaps should be set to 15° with a rotation speed of 50 KIAS. For longer runways, takeoff can be accomplished with flaps at 0° and a rotation speed of 65 KIAS.

For short-field landings, use flaps at 40° with an approach speed of 51 KIAS. In strong headwinds or crosswinds, a flap setting of 25° with an approach speed of 70 KIAS is recommended.

## *A/C*

A 12,000 BTU A/C unit is installed on the aircraft, mounted on the left engine. The A/C system automatically provides warm or cool air to the cabin depending on the internal temperature and the desired temperature setting.

To provide cool air, the left engine should be running. To provide warm air, either the left or right engine should be running, and the oil temperature must be above 40°C. The A/C controller (A/C ON/OFF switch) requires the aircraft to be electrically powered in order to function.

The A/C ON/OFF switch, the cabin temperature rheostat knob, and the VENT FAN (ventilation fans) switch are located on the main panel.

The temperature rheostat knob has a range of 20°C to 28°C (68°F to 82°F). The display scale can be toggled between °C and °F using a button on the trim/cabin temperature instrument located at the top of the main panel. The selected option is stored in an LVar that loads every time you fly the aircraft.

The VENT FAN switch has three positions: OFF, LOW, and HIGH. When the A/C is ON, it boosts the warm or cool air provided by the A/C system. When the A/C is OFF, it boosts the ram air entering through the fuselage. Air flows into the cabin through vent outlets located under the main panel and on the overhead panel. Since the aircraft has no windows, cabin ventilation is always necessary. Even with the VENT FAN switch closed, ram air continues to flow through the vent outlets inside the cabin. To isolate the cabin from ram air, the cabin air lever should be pulled.

To operate the ventilation fans, the aircraft must be electrically powered. An advisory message, 'CABIN TOO COLD' or 'CABIN TOO HOT' will be displayed on the PFD when the cabin temperature is below 21°C (70°F) or above 26°C (79°F).



## Cabin Air Lever

The cabin air lever is located on the main panel between the flaps lever and the right yoke. When the cabin air lever is pushed, ram air flows into the cabin through the vent outlets. When pulled, the cabin is isolated from ram air. The lever features intermediate positions between fully pushed and fully pulled.

In very hot or cold conditions, pulling the cabin air lever can help the cabin reach the desired temperature more quickly. The cabin air lever should also be pulled if there is smoke or other hazardous gases in the atmosphere. If there is moisture inside the cabin, the cabin air lever should be pushed until the air becomes dry.

## Alternate static air lever

On the main panel, at the bottom and the left side of the left yoke, is the ALT ST AIR lever. This is a two-position push-pull lever. An alternate static air source system is installed to provide air to the ADC, standby airspeed indicator, and standby altimeter during operation should the static ports become blocked.

Whenever there is any obstruction in the Normal Static Air System, or if the Alternate Static Air System is desired, pull the ALT ST AIR lever. The normal position is pushed.

## Parking Brake

On the right side of the left yoke on the main panel is the PRK BRAKE (parking brake) lever. This is a two-position lever, pushed and pulled. When the lever is pulled, the parking brake is set, and when it is pushed, the parking brake is released.

## Lights Knobs

On the main panel, below the Anti-Ice subpanel, is the Internal Lights subpanel, which consists of the Annunciator Test button, the Instrument Light Knob, the Panel Light Knob, and the Flood Light Knob.

- **Annunciators Test button:** The ANNOUN TEST button, when pressed, checks the functionality of the ECU lanes, prop sync switch, surface anti-ice switch, A/C switch, flaps position and transit lights and autopilot LED lights. To perform the annunciator test, the aircraft should be powered electrically.
- **Instrument Light Knob:** The INSTR LT rheostat knob controls the illumination of the prop amps, airframe amps, and oxygen pressure analog gauges backlight illumination.
- **Panel Light Knob:** The PANEL LT rheostat knob controls the illumination of the main panel LED text indicators, the Garmin GMC 307 autopilot LED and text indicators, as well as the illumination of the rheostat knobs.
- **Flood Light Knob:** The FLOOD LT rheostat knob controls the illumination of four LEDs located on the underside of the Glareshield, which floods light to the main panel, as well as one LED that floods light to the overhead panel.

## Circuit Breakers



On both the left and right sides of the main panel, there are two subpanels containing the circuit breakers. All the circuit breakers are animated, coded, and fully functional.

Please note that, depending on the variation of the aircraft (G3X MFD or GTN 750), the corresponding circuit breakers (MFD, GPS 1, GPS 2) may be inoperative.



## Attitude and Speed Backup instrument



The Attitude and Speed Backup instrument is located on the left side of the main panel. It is connected to the Main BUS and sets the Altimeter 2.

The BARO rheostat knob, when turned, sets the barometric pressure for Altimeter 2. When pressed, it sets Altimeter 2 to standard barometric pressure.

The InHg/hPa button, when pressed, changes the displayed BARO unit between inches of mercury and hectopascals. The selection is stored in an LVar that is loaded each time you fly the aircraft.

## Trim/cabin temperature instrument



The Trim/Cabin Temperature Instrument is located on the upper side of the main panel. It displays indications for pitch trim, rudder trim, and cabin temperature.



The °C/°F button allows you to switch the displayed units of cabin temperature between Celsius and Fahrenheit. This button also changes the temperature rheostat knob's displayed range units. The selection is stored in an LVar that is loaded every time you fly the aircraft.

The °RESET button reinitializes the cabin temperature. When the aircraft is loaded in the simulator and is ready to fly, the cabin temperature is initialized based on several factors, such as the current outside air temperature (OAT), the time of day, the precipitation state, the aircraft's geographical location etc.

If you change the weather after loading the aircraft at an airport or if you teleport the aircraft to another location, you can press the °RESET button to reinitialize the cabin temperature.

## Screens Backlight

It is recommended to set up the G3X Touch to use Auto Backlight for the screens by selecting the Photo Cell option in the Backlight Intensity settings. This ensures a good balance between day and night visibility.

The backlight intensity of the Attitude and Speed Backup instrument screen, as well as the Trim/Cabin Temperature instrument screen, is automatically adjusted based on the G3X Touch backlight intensity.



For the GTN 750 (if installed), it is recommended to set the Backlight to Auto and the Mitigation to None. This provides a good balance with the G3X Touch, both day and night.



For the GTN 750Xi (if installed), it is recommended to set the Backlight to Level 80% and the Manual Offset to 0.0%. This ensures a proper balance with the G3X Touch, both day and night.

## Pedestal



### Analog gauges

On the pedestal, there are two analog gauges that display indications for propeller amps and airframe amps.

In normal operation, the prop amp gauge should read between 13 and 17 amps, while the airframe gauge should read between 46 and 54 amps.

### Engine controls (Throttles, Propellers)

The upper portion of the pedestal houses the throttle (black) and propeller (blue) control levers. Pushing forward on a control lever increases its appropriate function, while pulling back decreases it.

The controls are centrally located for ease of operation from either the pilot's or the copilot's seat.

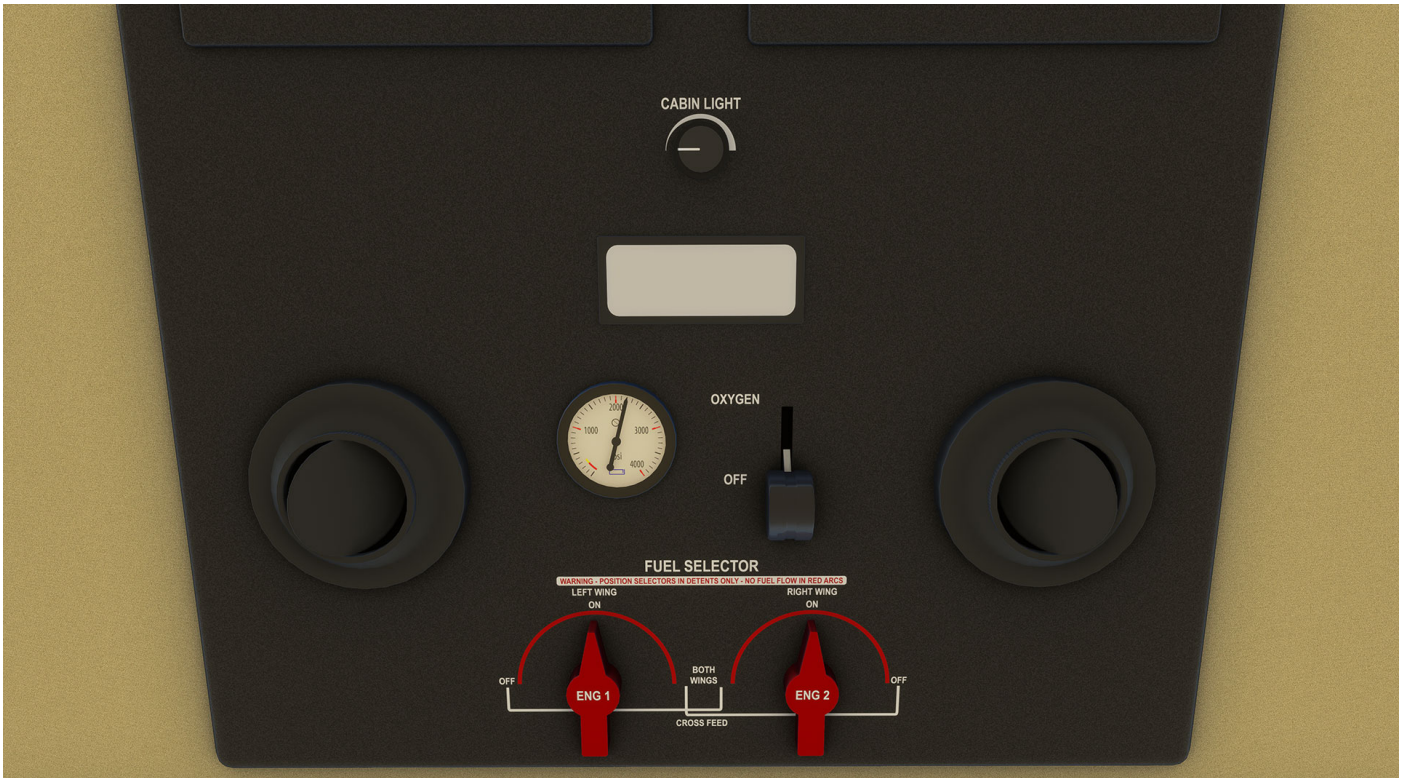
Propeller RPM is controlled by a governor in each engine which regulates hydraulic oil pressure to the hubs. The Push-pull prop levers allow the pilot to select each governor's RPM range.

The prop levers range has a physical detent at MIN position. The upper range set the propellers between high and low pitch while the bottom range set the propellers to feathering.

If an engine fails during flight, the propeller will remain in low pitch to facilitate a potential restart. If restarting the engine is not possible, the prop lever should be moved to the feathering position to minimize drag produced by the stopped propeller.



## Overhead Panel



### Fuel Selectors

The aircraft has two cross feed Fuel Selectors located on the overhead panel. Each fuel selector has 3 positions controlling the fuel distribution from the fuel tanks to engines.

- When the left FUEL SELECTOR (ENG 1) is set to ON position, fuel will flow from the left fuel tank located inside the left wing to the left engine.
- When the right FUEL SELECTOR (ENG 2) is set to ON position, fuel will flow from the right fuel tank located inside the right wing to the right engine.
- When the left FUEL SELECTOR (ENG 1) is set to CROSS FEED position, fuel will flow from both fuel tanks to the left engine.
- When the right FUEL SELECTOR (ENG 2) is set to CROSS FEED position, fuel will flow from both fuel tanks to the right engine.

In normal operation, both fuel selectors should be set to the ON position.

If an engine fails during flight, the counterpart fuel selector should be set to the OFF position while the other engine's fuel selector should be set to CROSS FEED. This ensures the running engine is fueled by both tanks, keeping the wings balanced.

E.g. Left engine fails: ENG 1 Fuel selector set to OFF, ENG 2 Fuel selector set to CROSS FEED.

### Oxygen System

The oxygen system's ON/OFF switch and the analog oxygen pressure gauge are located on the overhead panel. The OXYGEN switch controls the flow of oxygen to the cannulas and operates independently of electrical systems; it can be activated at any time while on the ground or in the air.

The oxygen pressure gauge displays the pressure of the oxygen bottle in PSI, which is located on the backside of the cabin.

The oxygen system has a minimum working pressure of 300 PSI below which oxygen cannot flow to the cannulas. Oxygen should be activated when flying above 12,500 feet. An advisory message 'USE OXYGEN MASKS' will be displayed on the PFD.

Please note that oxygen cannulas are not simulated.

## Cabin Light

The CABIN LIGHT rheostat knob controls the illumination of an LED located on the overhead panel, which floods light into the cabin.

## Overhead Vent Outlets

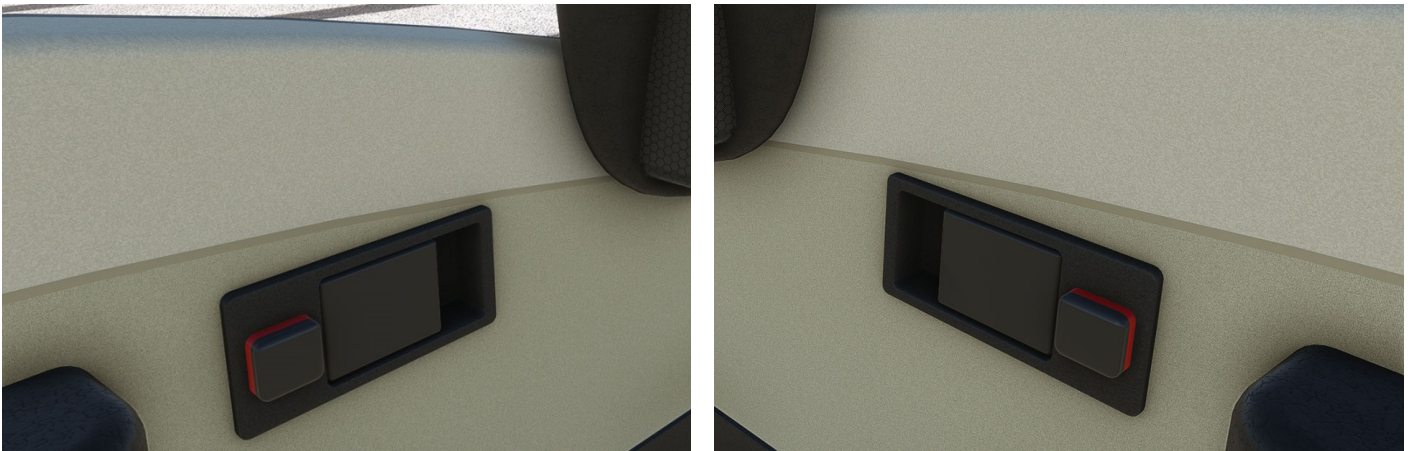
Two ventilation outlets are located on the overhead panel, one for the pilot and another for the copilot. Their direction can be adjusted. The selection for each vent outlet is stored in an LVar that loads every time you fly the aircraft.

The outlets cannot be closed since the aircraft does not have any windows, and the cabin should be ventilated by ram air except in hazardous atmospheric conditions.

The airflow through the Overhead Vent Outlets is automatically controlled by the A/C (cool/dry air). Warm air is circulated through the vent outlets located beneath the main panel.

The airflow volume is controlled by the ventilation fans switch located on the main panel.

## Doors



The aircraft has two doors - one on the left side and another on the right side. Each door is equipped with an open/close lever and a lock button.

To open or close the doors, the lock button must be pulled (unlocked). To secure the doors, simply push the lock button (locked).

In MSFS 2020, control animations from the external camera view are not supported, so you cannot open or close the doors from outside the aircraft.

### Note

The doors should be closed before starting the engines (for safety reasons due to the position of the propellers). Engines will not start while the respective door is open. Once the engines are running, the doors will remain self-locked. Pull the SELF LOCK circuit breaker to unlock them in case of an emergency.

## Seats and armrest



The seats are animated and can be adjusted by moving them forward or backward. The height can also be adjusted by moving the seats up or down. Each seat base has two rotation knobs at the front:

- The left rotation knob moves the seat forward or backward.
- The right rotation knob moves the seat up or down.

The seatbacks are animated and can be rotated forward or backward. Each seat has a rotation knob located at the pedestal's side that controls the seatback's rotation. Both the rotation knob and the seat base are marked with two red lines. Prior to takeoff and landing, the seatbacks should be in the correct position, which can be accomplished by aligning the red lines.

The head pillows on each seat are animated and can be moved up or down.

The armrest located at the back end of the pedestal is animated and can be rotated or moved up or down.

All seat adjustments are stored in LVars that load every time you fly the aircraft.





A lock/unlock button is located at the back end of the pedestal. To move the seats, the SEATS MOVEMENT UNLOCK button should be pulled to the unlock position. After adjusting the seats to your desired position, you should push the SEATS MOVEMENT UNLOCK button to lock the seats and avoid any accidental movements. The armrest's up or down movement is protected by the SEATS MOVEMENT UNLOCK button, while the armrest rotation can be adjusted at any time. By default, when you load the aircraft for a flight, the SEATS MOVEMENT UNLOCK button will be in the locked position.

Below the SEATS MOVEMENT UNLOCK button, there is a RESET SEAT POSITIONS push button. When this button is pressed, any adjustments made will be reset to default values. Stored values in LVars will also revert to default values, and the seats will return to their default positions.

The use of the reset button will be very helpful if you wish to revert the seats back to their default positions; however, special care is required to avoid losing any adjustments you have already made.

To reset the seat positions, the SEATS MOVEMENT UNLOCK button must be pulled to the unlock position.

## VR

On a 2D monitor, moving and adjusting the seats away from their default positions may not be useful. However, such adjustments will be very helpful in VR mode.

Initially, you need to find the correct position for your Pilot VR camera based on your height. This can be done by creating a custom camera for VR within the simulator, similar to how custom cameras are created for other views.

Once you've found the correct position for your Pilot VR camera, you can adjust the pilot seat as described above to ensure you see yourself seated correctly.

Don't forget to set up a "Reset VR Camera" button in case your VR headset loses tracking.

## Seatbelts



The seatbelts can be hidden. If you are flying in VR, you may wish to hide the pilot seatbelt to avoid seeing it when seated. To hide or show a seatbelt, simply click on the seatbelt buckle.

## Sunvisors



There are two sunvisors, one for the pilot and one for the copilot, located at the front of the cabin ceiling. The sunvisors are animated and can be adjusted to a desired position when the sun is directly in front of you. This feature is particularly helpful in VR mode, as looking directly at the sun can be quite bothersome.



## Yokes



The aircraft is equipped with two yokes: one for the pilot and one for the copilot. Both yokes are identical in functionality, though the buttons and switches on the copilot's yoke are mirrored.

Each yoke features a pitch trim switch that controls the electric motor driving the elevator trim tab and a rudder trim switch that operates the electric motor for the rudder trim tab.

The A/P DISC button disconnects the autopilot; pressing it a second time will disengage the Flight Director.

The VOR IDENT button allows you to identify a VOR station already tuned to the radio by its audio signal.

The PTT (Push to Talk) button is currently inoperative in the simulator.

The RDR TRIM CENTER button resets the rudder trim to a neutral position.

All these switches and buttons require the aircraft to be powered electrically to operate.

## Checklist



A detailed normal checklist is available in the Microsoft Flight Simulator menu. Please note that the checklist is not interactive and does not include the preflight inspection or emergency procedures.

## Warnings on PFD



| Warnings     | Cautions         | Advisories       |
|--------------|------------------|------------------|
| CHT HI       | Door Open L      | AVIONICS FAN     |
| FUEL FLOW HI | Door Open R      | PFD FAN FAIL     |
| FUEL QTY LO  | ALT LOAD         | USE OXYGEN MASKS |
| L-R ALT INOP | FUEL QTY LO      | CABIN TOO COLD   |
| L ALT INOP   | L STARTER ENGD   | CABIN TOO HOT    |
| R ALT INOP   | R STARTER ENGD   |                  |
| OIL TEMP HI  | MAINBUS VOLT HI  |                  |
| OIL PRESS HI | MAINBUS VOLT LO  |                  |
| OIL PRESS LO | OIL PRESS HI     |                  |
| RPM          | OIL PRESS LO     |                  |
| ENGINE FIRE  | PITOT FAIL       |                  |
|              | STALL HEAT       |                  |
|              | LOW VACUUM       |                  |
|              | ALT AIR OPEN     |                  |
|              | ALT MISCOMP      |                  |
|              | IAS MISCOMP      |                  |
|              | LOW OXYGEN PRESS |                  |



## Engine Wear Simulation



The aircraft simulates engine stress and damage resulting from exceeding RPM or temperature limits (CHT, coolant, and EGT), as well as airspeed indicator failure under specific conditions.

On the G3X Touch EIS → INFO page, two Engine Wear indicators (one per engine) display accumulated wear. The ENGINE WEAR switch, located on the right side of the panel, enables or disables the wear simulation.

- OFF (default): wear simulation inactive.
- ON: enables wear tracking for both engines.

Wear data are stored in LVars and persist between flights. Turning the switch OFF does not reset existing wear; it only deactivates tracking.

Pressing the RESET button clears all recorded wear and extinguishes any active engine fire (if triggered).

### RPM limits:

- Normal 5800 rpm for Take-Off,  $\leq 5500$  rpm for Climb,  $\leq 5200$  rpm for Cruise
- $> 5500$  rpm to  $\leq 5800$  rpm Transient 5 min
- $> 5800$  rpm Transient 15 sec, Take-Off Transient 60 sec

### CHT limits:

- Normal  $\leq 110^{\circ}\text{C}$
- $> 110^{\circ}\text{C}$  to  $\leq 120^{\circ}\text{C}$  Transient 60 sec (Yellow zone)
- $> 120^{\circ}\text{C}$  Transient 10 sec (Red zone)

### Coolant limits:

- Normal  $\leq 110^{\circ}\text{C}$
- $> 110^{\circ}\text{C}$  to  $\leq 120^{\circ}\text{C}$  Transient 60 sec (Yellow zone)
- $> 120^{\circ}\text{C}$  Transient 10 sec (Red zone)

### EGT limits:

- Normal  $\leq 950^{\circ}\text{C}$
- $> 950^{\circ}\text{C}$  Transient 10 sec (Red zone)

Exceeding transient limits will gradually degrade engine health.

When an Engine Wear indicator reaches the red zone, an engine fire may be triggered. Continuous monitoring of engine instrument indications is recommended during all phases of flight to help maintain engine health.

## Ground and Flight Handling Characteristics

Due to its high power-to-weight ratio (0.2707 hp/kg), the aircraft accelerates very quickly.

- **Takeoff acceleration:**

On a flat runway with no wind, applying full throttle (with pitch trim correctly set, controls centered, and hardware inputs neutral) will keep the aircraft on the centerline. The aircraft will lift off on its own at approximately **90 KIAS** and continue climbing without pilot input.

- **Parking brake behavior:**

When the parking brake is released, the aircraft may begin to roll, depending on wind direction and strength. With both engines at full throttle, the parking brake cannot hold the aircraft stationary. This is a limitation of the MSFS ground handling model.

In real-world testing during development (reverse-engineering with a single nose-mounted engine), the aircraft remained stationary both with the parking brake released and with full throttle while the brake was set.

- **Taxi handling:**

Do not expect to steer with engine power as you might in a jet-powered twin.

The left engine produces torque that pulls the aircraft left, while asymmetrical thrust pushes it right. The right engine, rotating counterclockwise, shows the opposite behavior. Asymmetrical thrust is the dominant force, so the left engine produces net force to the right, and the right engine produces net force to the left.

- **Engine-out control:**

In flight, single-engine control is straightforward. There is **no critical engine**, and the aircraft remains easy to handle with one engine inoperative.

- **Steering:**

The aircraft is designed for unpaved strips and has a high ground clearance. With a relatively high center of gravity, careful steering is required at low speeds.

- **Crosswind operations:**

During takeoff and landing, even low crosswind components require attention.

Due to the rapid acceleration, **ailerons into the wind and opposite rudder** are required to maintain the centerline.

## Installation

For PC users purchased the aircraft from the Just Flight store:

To install the aircraft, unzip the '[justflight-aircraft-daedalus-bs214.zip](#)' file into your MSFS 2020 or MSFS 2024 Community folder.

## Updates

For future updates, we recommend deleting the aircraft from the Community folder first, then copying the new version from the ZIP file. Your aircraft state and custom camera views will remain unchanged.

## Uninstallation

To uninstall it, simply remove it from your corresponding Community folder.

## Updates and Technical Support

For technical support (in English), please visit the Support pages on the Just Flight website:

<https://support.justflight.com>. As a Just Flight customer, you are entitled to free technical support for any Just Flight product.

If an update becomes available for this aircraft, Just Flight will post the details on the Support page and will also send a notification email to all buyers who are currently subscribed to Just Flight emails.



News about future updates will also be posted on our website: <https://arantissim.com> and on our [Discord](#) Support server.

For aircraft-specific bugs or technical issues that cannot be resolved by the Just Flight support team, you may contact us directly by joining our [Discord](#) Support server.

## Notes

### Sounds

The aircraft uses Wwise custom sounds.

### Avionics

The aircraft uses the default G3X Touch avionics by Working Title and the default GMC 307 Autopilot by Asobo.

The default variant of the aircraft is the **G3X MFD**, which uses the G3X Touch as both the PFD and MFD. It does not require any additional software to operate the aircraft. This default variant, excluding the optional extra GTN750 variants, is considered as a complete product (software).

Please note that the two GTN750 variants include integrated third-party software and are available as optional extras for users who already have the third-party software or wish to acquire it. If you do not have the required software, the GTN750 units will not be displayed.

However, the GTN750 variants will remain fully functional and flyable, though they will lack the external GPS driving the G3X Touch. In this case, the G3X PFD will use its internal GPS instead (you will need to manually select the internal GPS in the PFD options).

This scenario will also benefit from higher FPS, since only one JavaScript instrument will be loaded (the left and right PFDs are mirrored).

The **PMS50 GTN750** variant requires the PMS50 GTN750, either the Free or Premium edition, to be installed. The Premium edition is a paid version.

You can download the Free edition or purchase the Premium edition from their website: <https://pms50.com>. A paid version is also available in the Marketplace.

The PMS50 GTN750 can work with either the default MSFS navigation data or with Navigraph navigation data (subscription required).

In MSFS 2024 you may see a warning that the G3X is not compatible with the SDK 2024.

To fix that, you can force the SDK version from the GTN750 options page to SDK 2020. After that, you must restart the GPS unit. The SDK version to be used is saved as a persistent variable at the aircraft level.

The **TDS GTN750Xi** variant requires the TDS GTNXi Pro to be installed on your PC.

You can purchase the TDS GTNXi Pro from their website: <https://www.tdssim.com>.

A Navigraph subscription is required for the updatable navigation database in the TDS GTNXi Pro; otherwise, you will be limited to the outdated database included with the software.

The TDS GTN750Xi currently does not support dual GTN750 units communicating with the G3X. Only the left (Unit 1) GTN750Xi will function with the G3X. You can use the left GTN750Xi for flight planning and the right GTN750Xi for other purposes.

If you see the GTN750Xi units displaying black screens, please run the 'TDS GTNXi Flight Sim' on your PC.

The CDI button in the GTN750 units will only switch GPS/VLOC1 but while in VLOC1 mode, you can switch to VLOC2 from the G3X PFD.

Any bugs or malfunctions in the avionics suite (G3X Touch, GTN750, and GTN750Xi) cannot be resolved by us, as we did not create these instruments. However, we will communicate with the developers to ensure any issues are addressed.

## Xbox and MSFS 2024 compatibility notes:

- The aircraft is a **native MSFS 2020** add-on.
- The aircraft is compatible with **Xbox**.
- The aircraft is compatible with **MSFS2024**. However:
  - Lighting and graphics in MSFS 2024 differ from those in MSFS 2020, resulting in some aesthetic variations.
  - In **MSFS 2024**, the default flight planner is the **EFB**. You can create or load a flight plan in the EFB and send it to the avionics while you are still in the **Free Flight** menu. However, if you then modify the flight plan in the avionics—or delete it and create a new one—you cannot load it back into the EFB. Once you start the flight, the EFB and the avionics will no longer synchronize. This is a limitation of **MSFS 2024** that affects all aircraft originally designed for **MSFS 2020**, because Working Title introduced **V2** versions of all avionics systems in MSFS 2024, which are not supported by MSFS 2020-compatible aircraft. This may be addressed in future updates by Asobo.

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The aircraft (software) includes assets (in GTN750 variants) as optional extras for VC integration with third-party software (PMS50 GTN750, TDS GTN750Xi). The required third-party software, which needs to be downloaded or purchased, is not part of the aircraft.

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