Got Friends

AeroElvira Optica

OA-7 (Series 300/301)

FLIGHT MANUAL

Microsoft Flight Simulator

FOR SIMULATION USE ONLY - DESIGNED FOR SINGLE-PILOT OPERATIONS:

This aircraft has been developed for single pilot operations and has been adapted in such a way to better represent the simulated environment. It has been produced using multiple real-world data points and manuals from various dates and sources with modifications to various components to make them more manageable in Microsoft Flight Simulator.

PHOTOSENTIVE SEIZURE WARNING:

A very small percentage of people may experience a seizure when exposed to certain visual images, including flashing lights or patterns that may appear in video games. Even people who have no history of seizures or epilepsy may have an undiagnosed condition that can cause these "photosensitive epileptic seizures" while playing video games.

Immediately stop playing and consult a doctor if you experience any symptoms.

These seizures may have a variety of symptoms, including light-headedness, altered vision, eye or face twitching, jerking, or shaking of arms or legs, disorientation, confusion, or momentary loss of awareness. Seizures may also cause loss of consciousness or convulsions that can lead to injury from falling or striking nearby objects.

Parents should watch for or ask their children about the above symptoms. Children and teenagers are more likely than adults to experience these seizures.

You may reduce the risk of photosensitive epileptic seizures by taking the following precautions:

- Play in a well-lit room.
- Do not play if you are drowsy or fatigued.

If you or any of your relatives have a history of seizures or epilepsy, consult a doctor before playing video games.

FLIGHT MANUAL INFORMATION:

This flight manual has been written to aid in both Microsoft Flight Simulator 2020 and Microsoft Flight Simulator 2024 gameplay. Although some images and information may be directed towards a specific simulator, most of the information is shared between both simulators. If you find discrepancies in this manual that differ between either, please contact the Got Friends team at gotfriends.marketing@gmail.com and we will do our best to address these issues and forward the changes to Microsoft for future manual releases. Thank you for your patience in advance and we look forward to receiving your feedback.

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INTRODUCTION

Presenting the AeroElvira Optica (Series 300/301), a collaborative project between Got Friends and Microsoft. This latest iteration represents the culmination of years of dedicated work, rigorous research, and continuous improvements from our previous renditions, going beyond a mere six-month remaster. In partnership with Microsoft, we've seamlessly integrated significant enhancements and are genuinely excited to share these advancements with the broader flight simulation community. Our focus on authenticity and innovation is grounded in extensive research into this aircraft platform, aiming to provide an enjoyable experience for years to come.

The entire Got Friends team expresses our heartfelt gratitude to the community for their unwavering dedication to our earlier models. We would also like to recognize Craig Richardson and Pam Brooker for their outstanding work on previous FSX renditions, which the community developed a deep affection for. Finally, we express our appreciation to Microsoft for enabling our team to revisit this aircraft and ultimately craft a definitive experience for Microsoft Flight Simulator, recognizing the Optica's distinctive design concepts and historical significance. This presentation not only establishes the Optica as a viable platform for the future but also honors John Edgley's original vision, reigniting interest and solidifying its past as a legendary icon in aviation history.

The OA-7 Optica (Series 300/301) is a single-engine, three-seat fixed-wing observation and reconnaissance aircraft developed and maintained by AeroElvira Limited in Salisbury, England. This Series is an evolutionary upgrade of the original EA-7 Optica Series 100/200, which was designed by the British aviation company Edgley Aircraft Limited and its founder, John Edgley. The Optica took its maiden flight on December 14th, 1979, and since then, a total of 22 airframes have been manufactured by various companies. In 1988, Aerospace Technologies of Australia and the Brooklands Aerospace Group of Salisbury announced a variant of the original EA-7 Optica design for operation as an airborne surveillance and monitoring system. This variant was improved and designated as the Series 300, better known as the Scoutmaster. In 2007, John Edgley re-purchased the rights and established AeroElvira to further enhance this distinctive design. Only a few of the original models remain, including G-BOPO, which AeroElvira has comprehensively restored and upgraded to their improved Series 301 standard. Currently, eight airframes are known to survive: five of these could potentially be made airworthy, including two in Sydney that are still operational, one in the United Kingdom, and one in the United States, notable for its appearance in the 1989 science-fiction film 'Slipstream'.

The Optica traces its roots to the mid-1970s, conceived by aerospace engineer John Edgley as a fixed-wing aircraft capable of low and slow flight, prolonged loitering, and exceptional visibility for situational awareness. It was designed to offer the observational advantages of a helicopter, but with increased on-site endurance and cost efficiency.

The Optica stands out as one of the most uniquely effective purpose-built aircraft ever created. Its nose-mounted, three-seat cockpit features a wrap-around canopy, providing a 270-degree panoramic view, including direct visibility above and below. The aircraft's high-aspect-ratio straight main wing is optimally designed for slow, endurance missions. It features two tail booms extending to an empennage with twin vertical stabilizers, connected by a horizontal stabilizer. The Optica's propulsion system consists of a quiet, ducted fan located behind the cockpit, aligned with the main wing's midline. It uses a fixed tricycle landing gear for ease of take-off and landing.

The Optica is renowned for its high-visibility canopy, extended loitering capability, quiet operation, and precise handling at low speeds. Its diverse applications include scientific observation, geotechnical surveying, aerial photography, videography, military and law enforcement surveillance, as well as flightseeing. While lacking vertical takeoff, landing, and hovering capabilities of a helicopter, the Optica offers comparable surveillance and observation advantages, with the added benefits of longer flight duration and lower operational costs.

The history of the Optica is not without challenges, including accidents and incidents. Despite setbacks, the aircraft's unique capabilities, quiet operation, and panoramic vision have kept its legacy alive. Today, the Optica stands as a testament to the resilience of visionary design and the pursuit of efficient, cost-effective solutions in aviation.

- Highly Detailed 3D Model with 4K HD Textures
- Accurate Flight Model with Ballast Tanks/Weights Simulation
- 8 Real World Liveries with Historical Significance
- Custom Lycoming IO-540 WWISE Sound Pack with optional Headphone Simulation
- Working Title Garmin 530 Compatibility with KAP140 Autopilot Functionality
- Fully Functioning Checklist with Locators, Cameras, Auto Complete and Evaluation Modes
- Functional Doors, Windows, External Power Unit, and Fuel Services
- Option to Fly with a Visible Co-Pilot while in the Virtual Cockpit
- Emergency Fuel Dumping System and Visual Effects
- Multi-Sensor Camera System on Observation (Series 300 "Scoutmaster") Liveries
- Customizable Registration Decals
- Deeply Simulated Lighting System

NOTICE:

This project was developed in partnership with Microsoft/Asobo and therefore only the WT 530 Navigation system is officially supported. However, our team has included all the necessary 3D models, coding and sounds for 3rd Party developers to unlock alternative GTN-750 support. We have worked directly with popular avionics developers, such as PMS50, to aid them in distributing small-size replacement packages that will enable the use of the alternative GTN-750 bezel upon release of the AeroElvira Optica for both simulators.

SPECIFICATIONS

General Characteristics:

Capacity:	Pilot + Two Passengers
Wingspan:	39.3 ft / 11.98 m
Wing Area:	170.5 sqft / 15.84 sqm
Length:	28.0 ft / 8.53 m
Flaps:	0° / 10° / 20° / 30° / 40° / 50°
Max Gross Weight:	2,899 lbs / 1,315 kg
Empty Weight:	2,090 lbs / 948 kg
Nose Weight:	6 x 7 lbs / 3.17 kg (Up to 42 lbs / 19 kg Total) (Pilot Only)
Left Tail Boom Ballast:	Up to 21 lbs / 9.52 kg (Full Crew Only)
Right Tail Boom Ballast:	Up to 21 lbs / 9.52 kg (Full Crew Only)

** Full Crew is defined as Pilot + Co-Pilot + Passenger Onboard*

Powerplant:

Brand:	Textron Lycoming
Model:	IO-540-V4A5D
Horsepower:	260 at 2700RPM
Cooling:	Air
Configuration:	V6 Flat

Propeller:

Blades:	5
Diameter:	4.8 ft / 146.30 cm
Type:	Fixed Pitch

Fuel Capacity:

Tanks:	2 x 34 US Gallons / 2 x 129 Liters

V-Speeds:

Never Exceed (VNE):	140 kts / 259 kph / 161 mph
Cruise Speed (VC):	100 kts / 185 kph / 115 mph
Takeoff Speed (VS):	55 kts / 102 kph / 63 mph
Best Climb Speed (VY):	65 kts / 120 kph / 75 mph
Best Angle Climb Speed (VX):	58 kts / 107 kph / 67 mph
Best Glide (VBG):	70 kts / 130 kph / 81 mph
Approach Speed (VREF):	52 kts / 96 kph / 60 mph
Stall Speed Full Flaps (VS0):	38 kts / 70 kph / 44 mph
Stall Speed Flaps Up (VS):	43 kts / 80 kph / 50 mph
Max Flaps Extended (Position #1):	110 kts / 204 kph / 127 mph
Max Flaps Extended (Position #2 - #5):	90 kts / 167 kph / 104 mph

1. External Power Button
    - ❖ Spawns Power Unit while Parked
2. Master Battery Switch
3. Master Generator Switch
4. Low Voltage Indicator / Push Test
5. Engine Starter Button
6. Fuel Pump Switch
7. Pitot Heat Switch
8. Navigation Lights Switch
9. Strobe Lights Switch
10. Landing Light Switch
11. Taxi Light Switch
12. Panel Lights Switch
13. Emergency Locator Transmitter Switch
14. Interior Registration Number
    - ❖ User Customizable In-Game
15. Avionics Lighting Brightness Knob
16. Panel Lighting Brightness Knob
17. Airspeed Gauge
18. Attitude Gauge
19. Attitude Adjustment Knob
20. Altimeter Gauge
21. Altimeter Calibration Knob
22. Turn Coordinator
23. Direction Heading Gauge
24. Gyro Calibration Knob
25. Heading Selector Knob
26. Vertical Speed Gauge
27. Tachometer Gauge
28. Manifold Pressure Gauge
29. Course Deviation Indicator Gauge
30. Omnibearing Selector Knob
31. OAT / Digital Clock
32. Ammeter Gauge
33. Fuel Pressure Gauge
34. CHT / EGT / Oil Press / Oil Temp Gauge
35. Left Fuel Quantity Gauge
36. Right Fuel Quantity Gauge
37. Audio Panel
38. GNS-530 Navigation Unit
39. KT-76C Transponder Unit
40. KAP-140 Autopilot Unit
41. AP/Trim Disconnect (Pilot)
42. AP/Trim Disconnect (Co-Pilot)

1. Fuel Shutoff Valve Handle
2. Fuel Dump Valve(s) Handle
    - ❖ Dumps Left and Right Fuel Tanks
3. Mixture Lever
4. Parking Brake Handle
5. Aileron Trim Wheel
6. Throttle Lever
7. Elevator Trim Wheel
8. Elevator Trim Indicator
9. Flaps Position Indicator
10. Flaps Position Switch
11. Fuel Selector Knob
12. Co-Pilot Cockpit Visibility Toggle **(MSFS 2020 Only)**
    - ❖ Displays Co-Pilot while in Cockpit Camera Mode
    - ❖ Note: Co-Pilot will always show in External Camera Mode when a Co-Pilot is onboard

NOTICE:

In MSFS 2020, support for a third-seat passenger is limited to flight model simulation only and a visual passenger will not appear in the cockpit's third seat. However, in MSFS 2024, this has changed, and a visual third-seat passenger is now available via weight and balance options in the new EFB interface.

1. Magneto Switch (Off, Right, Left, Both, Start)
2. Ballast Warning Indicators Reset Button
    - ❖ Resets / Clears Warning Indicator Lights
3. Nose Weight Light
    - ❖ Indicates Greater Than 0 Lbs Loaded in Nose
4. Passenger Weight Indicator Light
    - ❖ Indicates Greater Than 0 Lbs Loaded in Cockpit
5. Right Tail Ballast Indicator Light
    - ❖ Indicates Greater Than 0 Lbs Loaded in Right Tail Boom
6. Left Tail Ballast Indicator Light
    - ❖ Indicates Greater Than 0 Lbs Loaded in Left Tail Boom
7. Analog 24-Hour Clock
8. Magnetic Compass
    - ❖ Lighting Controlled with Panel Lights Switch / Panel Lights Brightness Knob

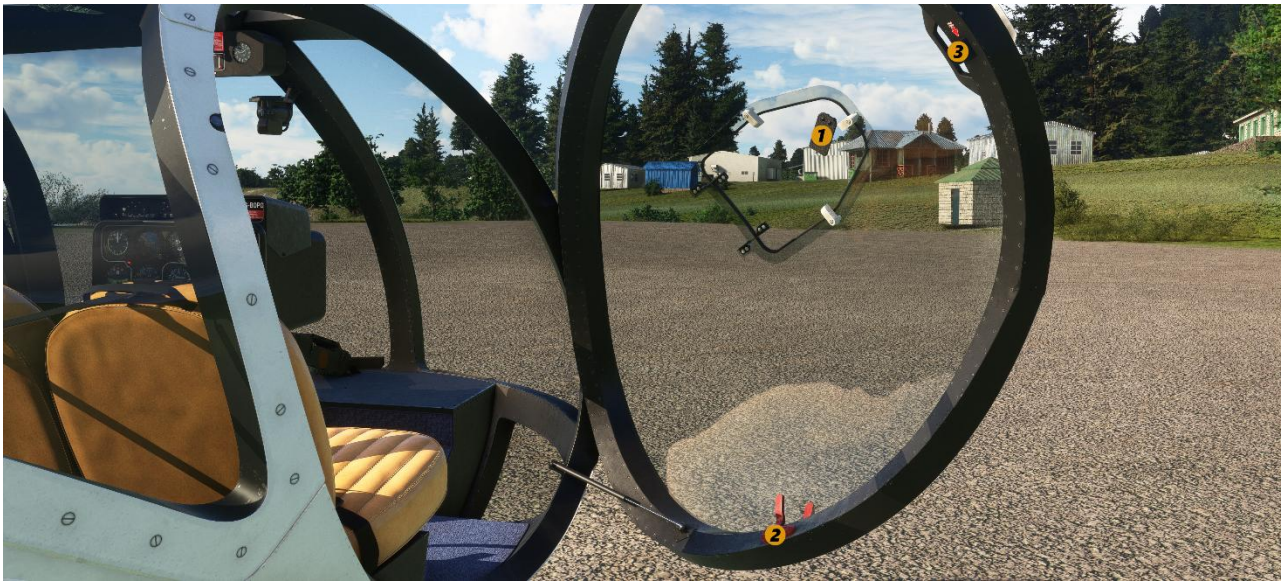
NOTICE:

In MSFS 2020, Physical Weights and Ballast Tanks can be adjusted in the Weight and Balance Menu. Nose Weights should only be added with a single pilot onboard. Tail Ballast should only be filled when a full crew (Pilot + Co-Pilot + Passenger) is onboard. You can also adjust Pilot, Co-Pilot, Passenger Weights and Fuel Quantities in this menu. However, in MSFS 2024, all ballast tank weights, and passenger seats are adjustable via the new EFB interface. *Take special consideration of the ballast tanks values during all career activities.*

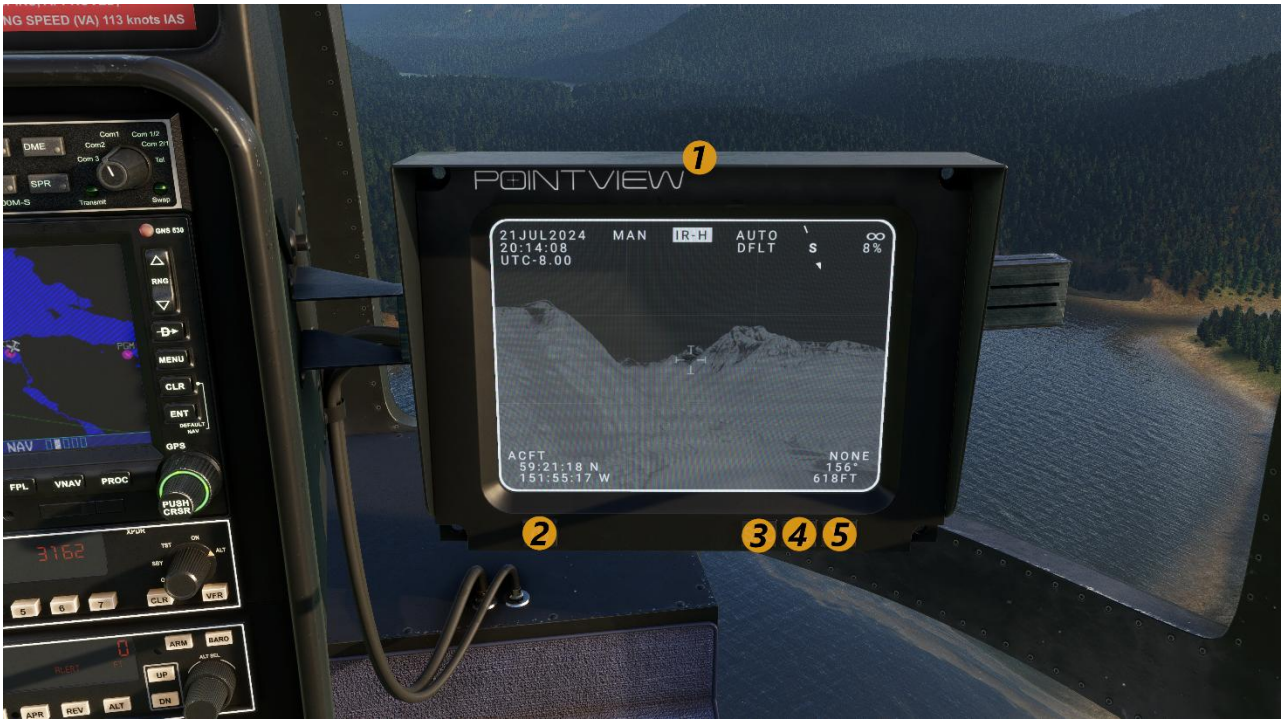
1. Avionics Brightness Knob (Side-View)
    - ❖ Adjusts GNS-530, KT-76C, KAP-140 and Multi-Sensor Camera System Brightness (If Installed)
2. Panel Lights Brightness Knob (Side-View)
    - ❖ Adjusts Panel Lights and Compass Light Brightness
3. Headphones
    - ❖ Turns On Headphone Simulation (Dampens Cockpit / Engine Sounds)
4. Headphones Cord
    - ❖ Turns Off Headphone Simulation

1. Cabin Spot Light Brightness Control (Default is 0%)
2. Cabin Spot Light Drag
    - ❖ Manually Drag to Desired Spot Light Degrees

1. Left Door Open / Close Switch
    - ❖ MSFS 2024: Triggers Aircraft Enter/Exit
2. Alternative: Left Door Open / Close Handle
    - ❖ MSFS 2024: Triggers Aircraft Enter/Exit
3. Left Window Open / Close



1. Right Window Open / Close
2. Alternative: Right Door Open / Close Handle
3. Right Door Open / Close Switch



NOTICE:

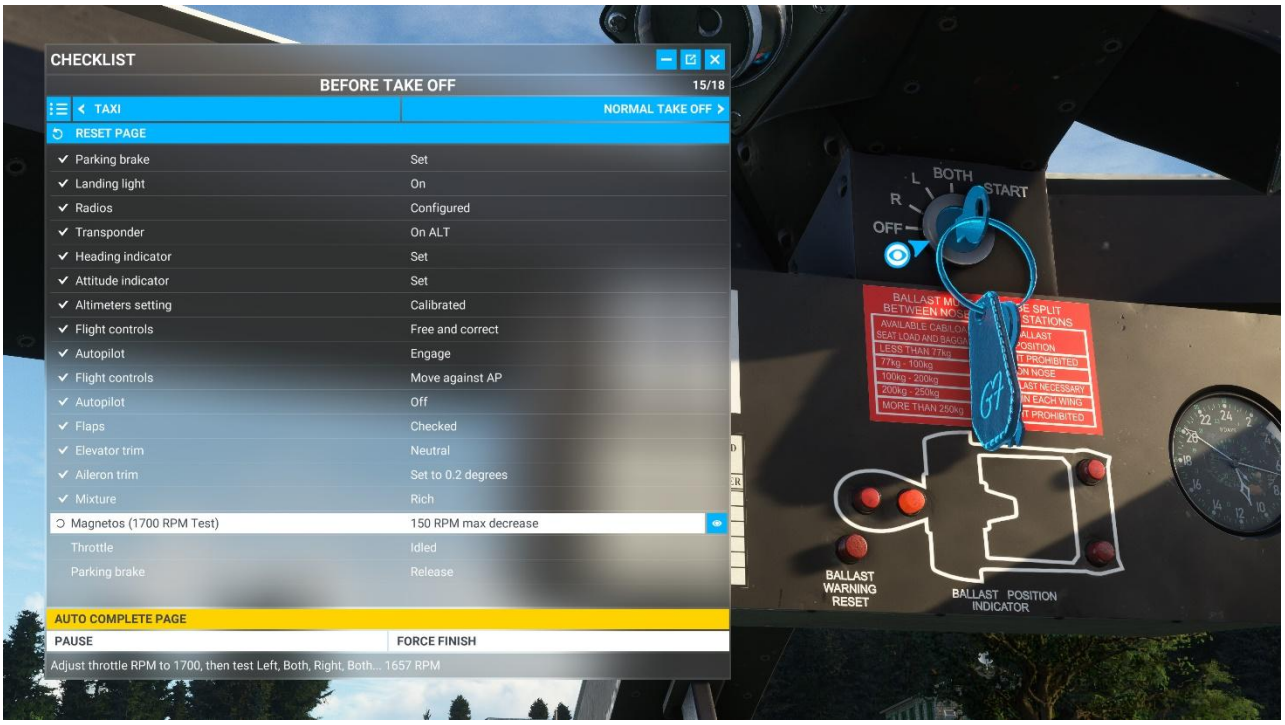
The Multi-Sensor Camera System is only available on the Scientific Research Variant (Series 300). If you want to use the camera system, please select one of those liveries from the Aircraft Selection/Configuration Menu.

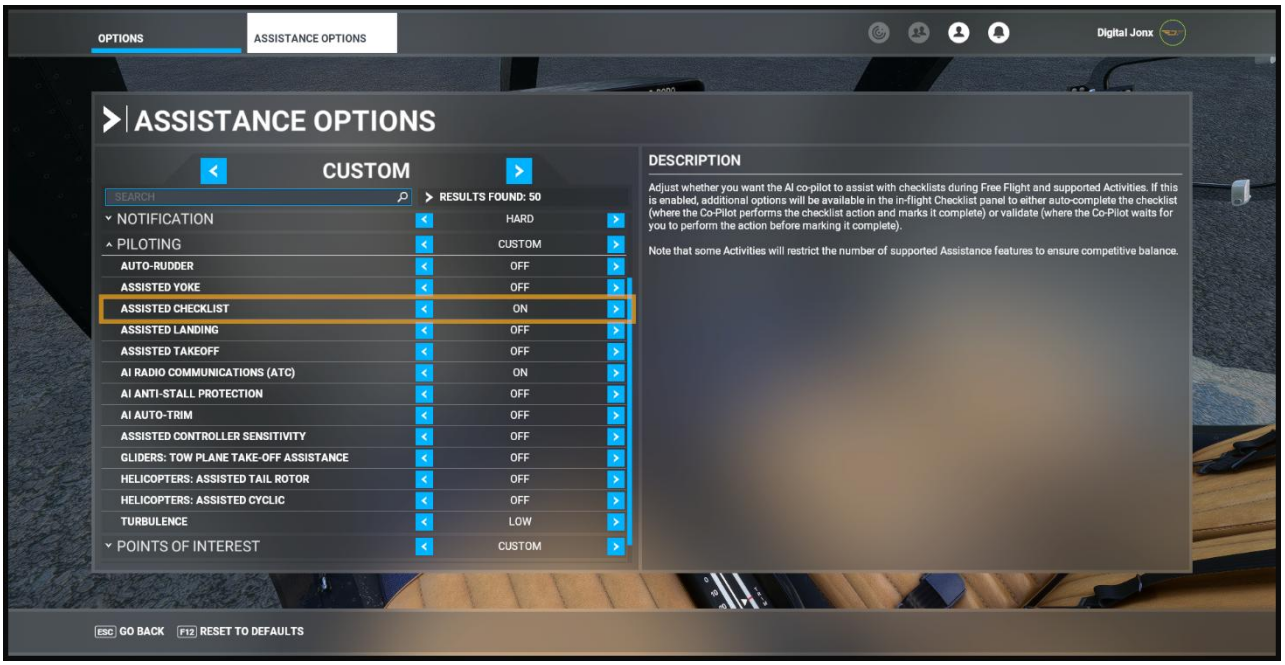
1. Camera Display (Adjust / Slide)
    - ❖ Manually Drag to Desired Position
2. Camera System Power Button
3. Camera System Source Button
    - ❖ IR-H (Infrared – Hot Greyscale)
        - ➢ Day/Night Visuals
    - ❖ IR-C (Infrared – Cold Greyscale)
        - ➢ Day/Night Visuals
    - ❖ EO (Electro-Optical Color)
        - ➢ Day Only Visuals
4. Camera Contrast Up Button
5. Camera Contrast Down Button

NOTICE:

Although camera contrast is adjustable via the Camera Contrast Up / Down Buttons, brightness is adjustable via the Avionics Brightness Knob on the left side of your Main Panel.

The AeroElvira Optica has been developed to fully utilize Microsoft Flight Simulator 2020's In-Game Checklist System. If you would like an in-depth walk-through during any phase of flight, you can select the Checklist Pop-Up Menu and get started. The checklists have been designed to assist with locations of each item, Co-Pilot autocompletion and evaluations. If you would like deeper checklist functionality, please consider turning "ON" the Assisted Checklists Option from Microsoft Flight Simulator's Assistance Options Menu. This will allow "Auto Completion" features like automated brake checks, engine warm-ups, and magneto checks when triggered.





The AeroElvira Optica in Microsoft Flight Simulator 2024 is designed to fully utilize the simulator's integrated Electronic Flight Bag (EFB) checklist system. This feature provides in-depth, interactive checklists accessible at any phase of flight, guiding you through procedures and highlighting the location of each item. The system also allows you to track your progress, ensuring a comprehensive and user-friendly experience.