



EA-7

## Edgley Optica

QUICK REFERENCE GUIDE JUNE 2021



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# Thank you!

Orbx would like to thank you for purchasing the **EA-7 Edgley Optica!**

The Edgley EA-7 Optica was designed by Edgley Aircraft Limited and began in 1974 by John Edgley producing a prototype aircraft and in 1979 it made its maiden flight.

It took until 1982 until a production line was established and took 3 years until full production phase. The Edgley EA-7 Optica was designed by Edgley Aircraft Limited and began in 1974 by John Edgley producing a prototype aircraft and in 1979 it made its maiden flight.

The cockpit is very similar to that of on an Alouette helicopter that has a full 270-degree panoramic view and almost vertical downward view which is especially handy for landing and observational flying.

She can have up to 3 people in the cockpit; the pilot, observation and passenger. The aircraft has twin booms with twin, rudders and a high tailplane and with its bubble canopy has a very unique and distinctive shape.

With a loiter speed of 70 knots, around 40% power, the Optica's fuel tanks can allow for flying up to nearly 8 hours and has a range of over 650 miles.





## General Characteristics

- Crew: 3
- Length: 8.15 m (26 ft 9 in)
- Wingspan: 12.00 m (39 ft 4 in)
- Height: 2.31 m (7 ft 7 in)
- Wing area: 15.84 m<sup>2</sup> (170.5 sq ft)
- Empty weight: 948 kg (2,090 lb)
- Max take-off weight: 1,315 kg (2,899 lb)
- Fuel capacity: 250 L (66 US gal; 55 imp gal) useful capacity
- Powerplant: 1 × Textron Lycoming IO-540-V4A5D air-cooled flat-six engine, 190 kW (260 hp)
- Propellers: 5-bladed fixed-pitch ducted fan

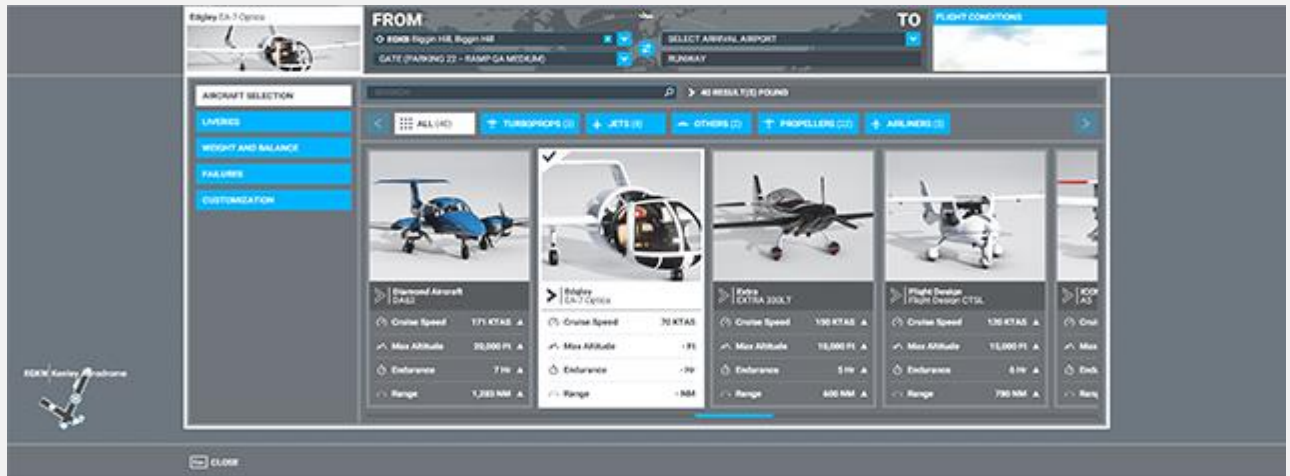
## Performance

- Maximum speed: 213 km/h (132 mph, 115 kn)
- Cruise speed: 130 km/h (81 mph, 70 kn) (loiter speed, 40% power)
- Stall speed: 108 km/h (67 mph, 58 kn) outboard flaps up
- Never exceed speed: 259 km/h (161 mph, 140 kn)
- Range: 1,056 km (656 mi, 570 nmi) at 130 km/h (81 mph; 70 kn) (45-minute reserves)
- Endurance: 8 h (at loiter speed)
- Service ceiling: 4,275 m (14,026 ft)
- Rate of climb: 4.1 m/s (810 ft/min)



## Aircraft Selection

You can find the Optica under the Propellers section, scroll along under All until it shows or you can type Optica in the search box.



## Livery Selection

Once you have selected the Optica, you have several liveries to choose from.

These range from real life aircraft liveries to fictional ones. They are located in the Liveries section with images and description of what they are. Simply click on your selected livery to enable it.

Some of the liveries have a different external model with a surveillance camera modelled. These are shown in the images of the aircraft on the selection screen.





You can preview the aircraft liveries within the My Hangar section.

Open up your hangar and press F11 to change the aircraft to the Optica, select the Optica livery you would like to see by pressing F12 and you can switch views within the hangar by using the icons on the top bar.



# Cockpit Layout

The cockpit is made up of various sections:

## Warning and Information Panel



This houses the ballast warning system, reference cards, clock and whisky magnetic compass.

## Main switches and information panel



This houses the standard aircraft switches for electrics and lighting, primary flight instruments, audio selection unit, the Garmin GNS 530 GPS navigation unit and the Garmin GTX330 transponder unit.



Below this panel in the centre are the engine and fuel monitoring instruments.



In the middle of the seats in the centre panel are the main fuel cut-off levers, throttle and mixture levers, trim wheel, flaps switch, wheel brakes and fuel selection switch.



To the side of each seat are the cockpit door opening latches.





# Cockpit Layout in Detail

## Warning and Information Panel



This panel has the reference card for the ballast weight system, below that is the warning panel if the ballast is incorrectly placed and centre of gravity is out of balance, a clock and the magnetic deviation reference card.

See the Weights and Balances section below for more details on the warning panel.



## Main Switch Panel



The main switch panel has on it, from left to right:

- External Power Supply push button – this enables the external power or APU unit to provide electrical power to the aircraft.
- Battery switch – This enables battery power to the aircraft systems.
- Generator switch – This supplies electric current to the electrical system and maintain a sufficient electrical charge in the battery.
- Low Voltage Warning light – This will illuminate if the batteries do not have sufficient electrical power stored.
- Engine Start switch – Press and hold to start the engine on the ground or during an in-flight engine re-start.
- Fuel Pump switch- This enables the fuel pump to push fuel to the engine for starting, during take-off, climb and landing.
- Pitot Heat switch – This heats the external pitot tube to prevent any build-up of icing on the tube which will interfere with a number of vital cockpit instruments.
- Nav light switch – This will switch on/off the external navigation lights.
- Strobe light switch – This will switch on/off the external strobe light.
- Landing light switch – This will switch on/off the main landing light on the nose of the aircraft.
- Taxi light switch - This will switch on/off the taxi light on the nose of the aircraft.
- Panel light switch – This will switch on the internal cockpit and instrument lighting system.

## Primary Flight Instruments



The “6 pack” of primary flight instruments consist of, from top left to bottom right.

Air speed indicator, Attitude Direction Indicator (ADI), Altitude Indicator, Turn and Slip Indicator, Heading Indicator (DG) and the Vertical Speed Indicator (VSI).

## Audio switch panel, Garmin GPS and Transponder Systems



To the right of the 6 pack are the audio and navigation panels allowing for comms to be switched, volumes adjusted and functions selected.

The Garmin GNS 530 GPS navigation unit is located below the audio panel and uses the standard in-sim controls when the aircraft has power. If you set a flight plan on the World Map this will be displayed on the GPS. Note: there is no autopilot in the aircraft so the route must be hand-flown.

Below the GPS is the Garmin GTX330 transponder where you set the transponder code given to you by ATC. To switch on the unit, press the Standby button and switch to Alt prior to take-off.



## Engine and Fuel Monitoring Panel



In the front center console are the engine and fuel gauges.

From top left you have the engine RPM gauge including the tachometer which shows the hours flown in the aircraft and next to that is the Oil Temperature gauge.

Below the RPM gauge is the Oil Pressure gauge.

To the right of that is a multi-display gauge which consists of the Volts, Amps, CHT (Cylinder Head Temperature) and EGT (Exhaust Gas Temperature).

High CHTs generally indicate that the engine is under excessive stress and throttle should be reduced and immediately find somewhere to land safely.

By contrast, high EGTs do not indicate that the engine is under excessive stress, they simply indicate that a lot of energy from the fuel is being wasted out the exhaust pipe.

Careful engine throttle management will result in a smoother flight experience and longevity of the aircraft.

Below these are the left and right fuel gauges indicating how much fuel is in each tank; indicating empty, half and full with increments in-between.

It is always recommended to switch fuel tanks regularly to ensure balance within the aircraft.

It is vital during aircraft operation that each of these gauges are monitored closely for safe flying.

## Centre Console



The center panel houses the Throttle and Mixture levers which control the engine power to the aircraft.

To the right-hand side is the Brake lever. This is used as a Parking Brake with the lever fully up and during taxi and landing to control the wheel brakes by gently applying the brakes. There are no toe brakes on the rudder pedals as this brake handle is used.

Behind and to the left is the Trim Wheel which should be used to keep the aircraft nose at the required attitude during all phases of flight. Next to this is the trim indicator showing the trim tab on the elevators to be up or down.

To the left is the flap indicator. There are 3 stages of flaps, Up indicating 0, Take Off indicating 10 degrees and Landing indicating 50 degrees flaps down.

Behind and in the center is the flap switch to bring the flaps down or up.

To the rear of the panel is the left and right Fuel tank switch. The fuel gauges should be monitored and the switch used regularly to keep the aircraft balanced during flight.

# Weights and Balances

One key thing to note on the Optica is that it has a ballast system built in.

If you just hit Fly, no changes are needed. However, if you want to add extra crew or passengers you need to be aware of the aircraft limitations shown in the image below. This is located within the aircraft just above the whisky compass at the top of the cockpit.

BALLAST MUST NEVER BE SPLIT BETWEEN NOSE AND TAIL STATIONS	
AVAILABLE CAB/LOAD SEAT LOAD AND BAGGAGE	BALLAST POSITION
LESS THAN 77kg	FLIGHT PROHIBITED
77kg - 100kg	15gp ON NOSE
100kg - 200kg	NO BALLAST NECESSARY
200kg - 250kg	7.5kg IN EACH WING
MORE THAN 250kg	FLIGHT PROHIBITED

If the weight and balance is out of centre of gravity limits the warning lights in the cockpit will show on the warning panel.





This can be cleared by opening the Weights and Balances pop out in-sim.

Simply move your mouse towards the top of the screen for the menu to appear, click the Weight icon and the pop-up will show.

You may need to drag the bottom right hand corner of the pop-up out to extend the box fully.

Below is an example of the warning of CG Out of Limit.



Simply adjust the passenger weight and ballast weight as per the reference card and the warnings will all go out.



# Getting Started

We have included a comprehensive checklist to assist you in all aspects of the aircrafts flight.

Move your mouse to the top of the screen to open the checklist section, the Tick icon.



There are several checklists to assist you:

- Preflight Inspection – Cabin
- Before Starting Engine
- Starting Engine
- After Starting Engine
- Taxi
- Normal Take Off
- Cruise
- Descent
- Normal Landing
- After Landing
- And Shutdown

Each one is detailed in the procedures of flying the Optica.

If you know where the switches, levers and dials are you can simply tick each one off the checklist as you go around the cockpit.

If you are unfamiliar with the cockpit a highlighting system is available.

Click on the eye icon next to the checklist item and the camera view will switch to that item and flash blue in colour.



Click the switch, tick the item in the checklist and click on the Eye icon and you can move to the next item.

The Optica is extremely easy to start and fly and we have comprehensive Quick Reference Cards that you can print at the end of this manual.





# Product Technical Support

For product support, please visit <https://orbxdirect.com/support>.

## Please do NOT email support requests

Orbx provides world-class support on our forums, and it's the only way in which you can receive support for Optica. Provided you adhere to the forum terms of use and have a legitimate copy of Optica, you will always be offered our support at no cost as we work toward a resolution to your problem each time.

## What to include in your support request

If at all possible, this is what we'd like to see provided for each request you log:

- Include your TRANSACTION ID from your Optica purchase in your post
- A screenshot to highlight what you are talking about.
- A descriptive post title which clearly states what the issue is.
- Detailed comments in your post about what you are reporting on.

The Orbx support team is always on standby to assist you with any problems you may have, or will comment on your issue reports. Please remember, our priority is fixing any urgent issues first, and addressing bug reports second. Clearly though, any “show stopper” bugs will be given top priority though.

## Thanks for reading!

We hope you enjoy flying the Optica as much as we have enjoyed developing her.

If you would like to know more about Orbx products and the perfect scenery to add to your collection to fly the Optica around, please visit our Orbx Direct website at <https://orbxdirect.com/>

# Quick Reference Cards

## Pre-flight Inspection

Parking Brake.....	Set
Ignition.....	Off
Battery Switch .....	Off
Generator .....	Off
Mixture.....	Lean
Fuel tank shutoff levers .....	PULLED
Fuel selector .....	Fullest Tank
Circuit breakers.....	All pushed
Transponder .....	Off
Radios.....	Off
Battery Switch .....	On
Ballast weights .....	Set and warning lights extinguished
Strobe .....	On
Navigation lights.....	On
Landing light.....	On
Taxi light.....	On
Panel light.....	On

## Before Starting Engine

Strobe .....	Off
Navigation lights.....	Off
Landing light.....	Off
Taxi light.....	Off
Panel light.....	As required
Flaps.....	Set to 0

## Starting Engine

Magnetos.....	Off
Propeller area.....	Clear
Doors .....	Closed and locked
Fuel tank valve shutoff levers.....	PUSHED
Fuel selector .....	Fullest tank
Fuel pump.....	On
Mixture.....	Rich
Magnetos.....	Both
Brakes.....	Test and Set On
Starter .....	On
Throttle lever .....	Advance 1 centimetre
Throttle lever .....	Idle
Engine gauges .....	Check within limits
Generator switch .....	On

## After Starting Engine

Altimeters setting .....Set and check  
 Transponder .....Set to Standby  
 Compass .....Check working and aligned  
 Flaps.....Set to 0  
 Elevator Trim.....Set to neutral

## Taxi

Fuel selector .....Fullest tank  
 Navigation lights..... On  
 Taxi light..... On  
 Panel light.....As required  
 Control stick.....Free and correct, full travel  
 Throttle lever .....2100RPM  
 Magnetos..... Check left and right 50RPM drop for each  
 Throttle lever ..... Idle

Magnetos.....Both  
 Throttle lever .....Set to desired power  
 Brakes.....Release

## Normal Take Off

Taxi light..... Off  
 Landing light..... On  
 Transponder .....Set to ALT  
 Fuel pump..... On  
 Brakes..... Test and set  
 Throttle..... Full  
 Brakes.....Release  
 Rotation.....59 KIAS  
 Initial climb.....66 KIAS  
 Throttle.....2100RPM  
 Trim .....As required

## Cruise

Landing light..... Off  
 Flight instruments.....Check  
 Fuel pump..... Off  
 Adjust cruise speed.....70KIAS  
 Trim .....As required



### Descent

Landing light..... On  
 Throttle.....As required  
 Trim .....As required

### Normal Landing

Flaps.....Landing  
 Fuel pump..... On  
 Speed .....Greater than 58KIAS

### After Landing

Fuel pump..... Off  
 Flaps..... 0  
 Transponder ..... Standby  
 Taxi light..... On  
 Landing light..... Off  
 Strobe ..... Off

### Shutdown

Parking brake .....Set  
 Throttle lever ..... Idle  
 Elevator Trim..... Neutral  
 Taxi light..... Off  
 Generator ..... Off  
 Mixture.....Lean  
 Fuel tank valve shutoff levers..... PULLED  
 Ignition..... Off  
 Radios..... Off  
 Navigation lights..... Off  
 Battery ..... Off

# End User License Agreement (EULA)

For the most recent version of the EULA, see [orbxdirect.com/eula](http://orbxdirect.com/eula).

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- the Orbx libraries associated with the Software (**Orbxlibs**); and
- associated printed materials, media and online or electronic documentation (**Documentation**),

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- 4.1. We warrant that:
  - a) the Software will, when properly used on an operating system for which it was designed, perform substantially in accordance with the functions described in the Documentation;
  - b) the Documentation correctly describes the operation of the Software in all material respects.
- 4.2. The warranty in 4.1 does not apply if:
  - a) the defect or fault in the Software results from you having altered or modified a Software Product; or
  - b) if the defect or fault in the Software results from you having used a Software Product in breach of the terms of this EULA.

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We may terminate this EULA immediately by written notice to you if you commit a material or persistent breach of this EULA which you fail to remedy (if remediable) within 14 days after the service of written notice requiring you to do so. Upon termination for any reason:

- a) all rights granted to you under this EULA shall cease;
- b) you must cease all activities authorised by this EULA; and
- c) you must immediately delete or remove the Software Product from all computer equipment in your possession and immediately destroy or return to us (at our option) all copies of the Software Product then in your possession, custody or control and, in the case of destruction, certify to us that you have done so.

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- 6.6. The above disclaimers do not exclude or limit in any way our liability to you where it would be unlawful to do so.
- 6.7. You acknowledge that the Software Product has not been developed to meet your individual requirements, and that it is therefore your responsibility to ensure that the facilities and functions of the Software as described in the Documentation meet your requirements.

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You agree to defend, indemnify, and hold us, our members, managers, officers, employees and agents harmless from and against any claims, actions or demands, including, without limitation, reasonable legal and accounting fees, arising or resulting from your breach of this EULA or your uploading of, access to, or use or misuse of the Software Product.

## 8. COMMUNICATIONS BETWEEN US

- 8.1. If you wish to contact us in writing, or if any condition in this EULA requires you to give us notice in writing, you can send this to us by email to Orbx Simulation Systems at [info@orbxsystems.com](mailto:info@orbxsystems.com). We will confirm receipt of this by contacting you in writing, normally by email.
- 8.2. If we have to contact you or give you notice in writing, we will do so by email or by pre-paid post to the address you provide or confirm to us.

## 9. HOW WE MAY USE YOUR PERSONAL INFORMATION

We will only use your personal information as set out in our privacy policy, a copy of which is contained on our website.

## 10. OTHER IMPORTANT TERMS

- 10.1. We may transfer our rights and obligations under these terms to another organisation. We will always tell you in writing if this happens and we will ensure that the transfer will not affect your rights under this EULA.
- 10.2. You may only transfer your rights or your obligations under this EULA to another person if we agree in writing.
- 10.3. Each of the paragraphs of this EULA operate separately. If any court or relevant authority decides that any of them are unlawful, the remaining paragraphs will remain in full force and effect.
- 10.4. If we do not insist immediately that you do anything you are required to do under this EULA, or if we delay in taking steps against you in respect of your breaking this EULA, that will not mean that you do not have to do those things and it will not prevent us taking steps against you at a later date.
- 10.5. This EULA constitutes the entire statement of the agreement between you and us on the subject matter, and merges and supersedes all other or prior understandings, purchase orders, agreements and arrangements. This EULA shall be governed by the laws of Victoria, Australia.