



EVLOS & BVLOS

In the industry of remotely piloted aircrafts (RPAS), the acronyms EVLOS and BVLOS refer to Extended and Beyond Visual Line of Sight. Both EVLOS and BVLOS open up a myriad of possibilities for various industries, from agriculture to surveying and emergency response by enabling drones to fly operations further than the naked eye can see.

DEFINING THE OPERATIONS

EVLOS refers to operations where the drone is flown beyond the normal visual line of sight of the pilot, but still within the extended visual range that can be seen with the aid of visual observers or technology.

BVLOS involves flying the drone beyond the pilot's direct visual line of sight. This means the drone may be out of sight of the pilot and visual observers.

The primary difference is that EVLOS requires some form of visual contact (directly or through observers), while BVLOS permits operations where the drone is completely out of sight of the pilot.

These advanced operations also come with increased regulatory and technological challenges. Ensuring the safety and reliability of flights requires sophisticated communication systems, robust sense-and-avoid technologies, and compliance with strict aviation regulations. This new category is developing rapidly, and regulations are evolving.

DIFFERENCE BETWEEN EVLOS & BVLOS

EVLOS (Extended Visual Line of Sight):

- **Visibility:** Drone must be within the extended visual range of the pilot or visual observers.
- **Requirements:** Requires maintaining some form of visual contact, either directly or through observers.
- **EVLOS operations might include:**
 - **Inspection of Infrastructure:** Checking bridges or power lines where the drone is flown farther than typical line-of-sight but remains within the extended range of the operator and possibly visual observers.
 - **Agricultural Monitoring:** Surveying large fields with the assistance of visual observers stationed at different points to maintain overall sight of the drone.

BVLOS (Beyond Visual Line of Sight):

- **Visibility:** Drone can be flown completely out of the pilot's visual range.
- **Requirements:** Requires special permissions, advanced technology (e.g., detect-and-avoid systems), and detailed safety measures.
- **BVLOS operations might include:**
 - **Long-Distance Delivery:** Transporting goods across large distances, such as from a warehouse to a remote location, where the drone operates far beyond the operator's sight.
 - **Pipeline Monitoring:** Inspecting extensive pipeline networks where the drone flies autonomously over long stretches, using advanced systems to detect and avoid obstacles.



BVLOS OCTA Exam Prep

Prepare for your BVLOS OCTA exam through our comprehensive three-day virtual course led by aviation specialists. Engage in our virtual platform to partake in expertly guided sessions designed to equip you with the essential skills and knowledge required for the CASA examination.

3-day duration | Delivered Virtually | For RePL Holders

OVERVIEW

In the fast-paced field of remotely piloted aircraft systems (RPAS), a holder of a Remote Pilot License (RePL) is limited to operating RPAS within their visual line of sight. This means that the RePL holder must maintain a direct visual observation of the aircraft's position, speed, and flight direction, rather than relying on devices or screens for control.

To unlock the full potential of RPAS technology, especially for holders of a Remote Operator Certificate (ReOC), a Beyond Visual Line of Sight (BVLOS) exam is required for operating RPAs beyond visual line of sight (BVLOS).

The BVLOS Operational Certificate for Controlled Airspace (OCTA) exam provides an alternative route for RePL holders to expand their operational capabilities beyond the standard visual limits.

As the RPAS industry continues to evolve, the need for BVLOS operations is rapidly growing. This course is designed to equip RePL holders with the knowledge and skills necessary to pass the BVLOS OCTA exam, thereby extending their operational capabilities.

BVLOS drone operations have the potential to revolutionise various sectors, including logistics, agriculture, and inspections, by enhancing efficiency, cutting costs, and broadening service reach.

Please note that passing the proposed exam will only grant a pass credit for the BVLOS OCTA examination and will not include an IREX rating.

IREX OR BVLOS

CCASA introduced the IREX for crewed pilots to advance to an instrument rating. However, feedback highlighted that the IREX imposes unnecessary burdens on RPAS operators and does not cover some RPAS specific criteria. CASA aims to develop a more suitable examination for lower-risk BVLOS operations. An IREX (Instrument Rating Examination) holder still needs to complete the full CASA BVLOS (Beyond Visual Line of Sight) exam.

This new examination will be specifically tailored to address the unique challenges and requirements faced by RPAS operators, ensuring a more relevant and streamlined assessment process. By focusing on the distinct operational environments and risk profiles of BVLOS operations, CASA hopes to foster a safer and more efficient integration of RPAS into the national airspace.

TRAINING OUTLINE

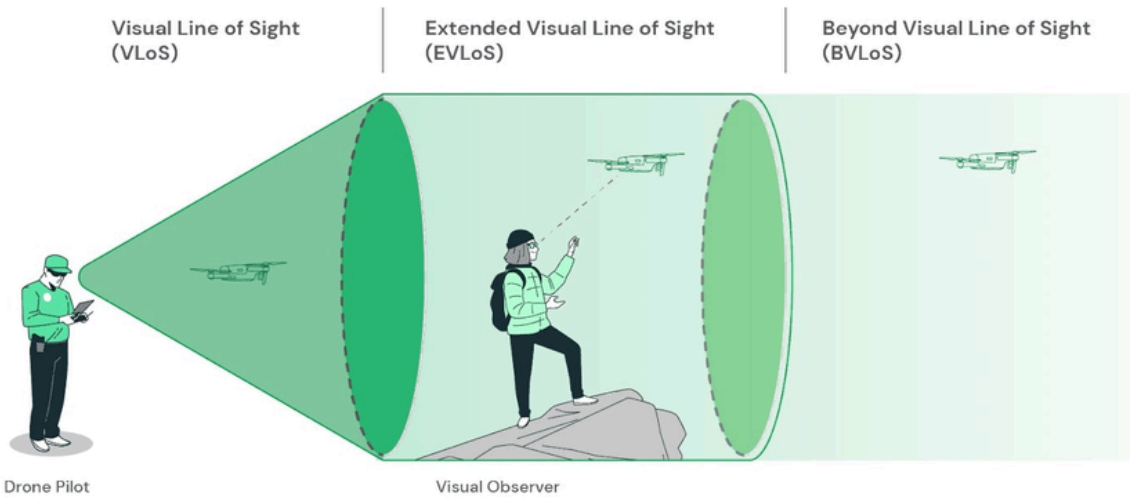
- Responsibilities in maintaining separation from manned aviation.
- Understanding local, area, and aerodrome altitudes to avoid conflicts.
- Planning operations near prohibited, restricted, and danger areas.
- Aerodrome visual and instrument approach and departure procedures for crewed aircraft.
- Rules to prevent conflicts between crewed and remotely piloted aircraft.
- Identification and avoidance of wildlife threats.

REQUIREMENTS FOR BVLOS OPERATIONS:

- Remote Pilot Licence (RePL) with either:
 - A pass in the CASA BVLOS Exam
 - Operate under the direct supervision of an individual who holds a pass in one of the exams (refer CASA EX51/24)
- Remotely piloted aircraft operator's certificate (ReOC)
- Updated ReOC with BVLOS Operations amendments
- Flight Authorisation for specific BVLOS Operations

OUTCOMES:

- Understand the additional approvals required for BVLOS operations
- Apply operation-specific procedures and materials (CONOPS)
- Stay updated on regulatory limitations related to BVLOS.
- Understand and apply the Specific Operations Risk Assessment (SORA) process
- Navigate BVLOS application requirements and exclusions.
- Utilise tools for situational awareness and RPA flight path monitoring.
- Navigate effectively to maintain awareness of the RPA's location.



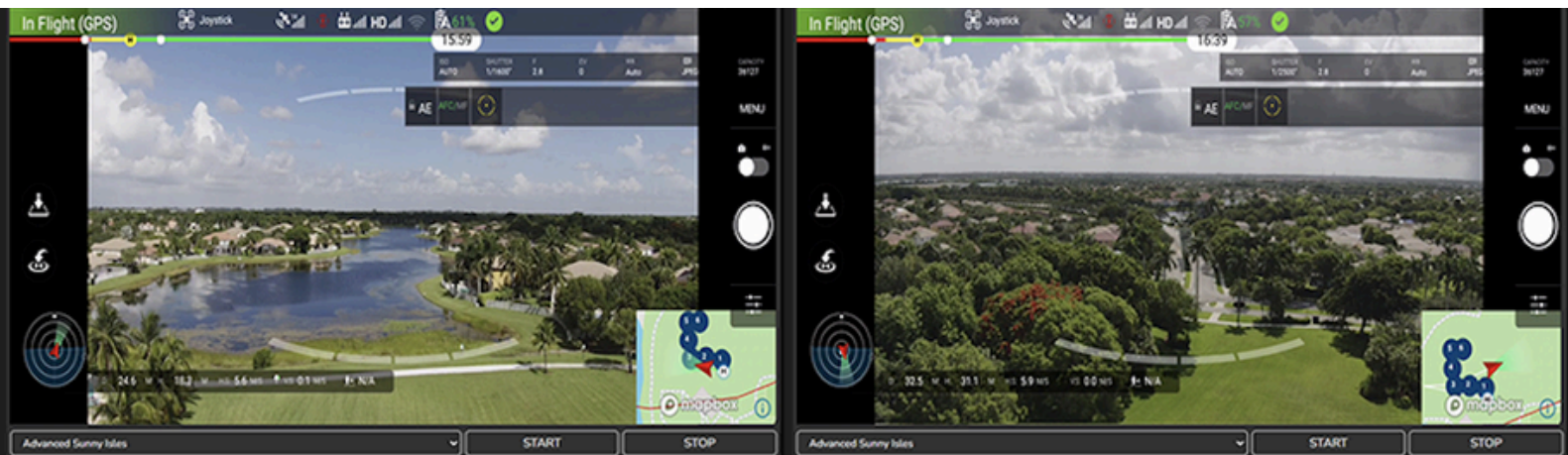
YOUR BVLOS PATHWAY

- RePL (AROC 25 NVLOS)
- Rapid ReOC
- BVLOS Exam Prep
- BVLOS Exam (CASA)
- ReOC BVLOS Ops Amendments
- BVLOS Flight Authorisation Form

COURSE DELIVERY:

The course is led by Alyce Johnson, Co-Founder, Head of Flight Operations, and Chief Pilot at Team Aviation. With over 13 years of aviation experience, Alyce offers invaluable insights and hands-on expertise. Her dedication to aviation and education ensures that participants receive exceptional guidance throughout the training. Our content is developed in line with the CASA RPAS BVLOS OCTA Knowledge Standards Syllabus)

- License Privileges and Limitations for BVLOS Operations
- Supporting Documentation and Information
- RPAS Instruments, Radios, and Equipment
- Meteorology Relevant to BVLOS Operations
- BVLOS Operations – General Overview
- Operations Outside Controlled Airspace (OCTA)
- Navigation and Global Navigation Satellite Systems (GNSS)
- Human Factors Relevant to BVLOS Operations



INDUSTRY DEVELOPMENTS

As the number of drones in operation increases, various applications are being realised, leading to a demand for drone operations that extend beyond the pilot's visual line of sight. This shift has made Beyond Visual Line of Sight (BVLOS) a focal point for regulators and numerous organisations.

The primary driver for BVLOS operations is drone delivery, with companies like Google's Wing, Wingcopter, Zipline, Manna Aero, and others actively delivering goods beyond visual line of sight. Recent authorisations granted to Zipline and Wing allow them to conduct package deliveries using their unmanned aircraft systems (UAS) while ensuring safe airspace separation. This approval empowers industry participants to manage airspace under strict safety supervision.

Australia has been an early adopter of BVLOS operations, with Wing Aviation, a major player in the industry owned by Google, conducting BVLOS drone deliveries in Canberra since 2014, the City of Logan in Brisbane since 2019, and more recently in 25 Suburbs across Easter Melbourne commencing in mid-2024.

In addition to drone delivery, several companies have received BVLOS approval for tasks like asset inspections, monitoring, mapping, and other long-distance applications, such as:

- Environmental Rehabilitation
- Food & Grocery Delivery
- Medical, Blood & Vaccine Delivery
- Cargo & Goods Delivery
- Mining Exploration

PROGRAM BENEFITS

Enhanced Efficiency and Cost-effectiveness:
Drones flying BVLOS can cover more ground in a single flight, collecting a larger amount of data compared to VLOS operations. This reduces the need for multiple deployments to gather the same volume of information.

Versatility and Broad Range of Applications:
Drones are particularly valuable in tasks like aerial surveying, mapping, and infrastructure inspection. Operating at lower altitudes enables improved data collection, especially in situations where precise timing is critical.

Safety and Risk Management:
Drones can help identify potential risks or problems in infrastructure, allowing for timely intervention and maintenance to prevent accidents or further damage.

THE FUTURE OF BVLOS

As BVLOS expands and regulations become more manageable, there will be a transition from drone deliveries to data collection. Drone deliveries will undoubtedly persist and grow over time, but there will also be an increase in autonomous operations that naturally operate BVLOS. Both DJI and Skydio have introduced docking stations for their drones, enabling operators to control them from a remote center hundreds or even thousands of kilometers away.

