

IAATO RPAS for Navigational Use

Background

The term Remotely Piloted Aircraft Systems (RPAS) is used for any remote piloted aircraft (Formerly called UAVs).

IAATO accepts the general use of RPASs within their members' operations, provided the following criteria have been met:

- i. For the 2018–19 season, recreational RPAS flights are not allowed in coastal areas;
- ii. RPAS flights for scientific, navigation or commercial purposes are allowed if flying permission has been incorporated into the IAATO Member permitting and planning processes. Non-approved Individuals guests, staff, passengers and other personnel are not allowed to fly RPAS's;
- iii. RPAS flights are allowed at deep field sites, including coastal areas bound by ice shelves, if conducted with the permission/authorization from a competent authority.
- iv. Members who allow RPAS flights should have Standard Operating Procedures in place that are specific to their operation.
- v. Prior to conducting the activity, the use of Remotely Piloted Aircraft Systems (RPAS) must be included in the operator's permit/authorization conditions e.g. Advance Notification, Environmental Impact Assessment (EIA) and Waste Management Permit (WMP), where relevant.

Purpose

Whilst the IAATO Recreational Ban of RPASs remains strong within the IAATO Community it is acknowledged that more and more vessels are using RPASs for Navigational Use. Deployment of Remotely Piloted Aircraft Systems (RPAS) can, in some circumstances, reduce or avoid environmental impacts that might otherwise occur. Their use may also be safer and require less logistical support than other means of deployment for the same purpose.

With this use in mind, IAATO would like to propose the following RPAS Guidelines for Navigational Use to be assessed during the 2018-19 Antarctic Season.

Scope of RPAS use for Navigation:

1. Assess sea ice conditions
2. Assess open water, coastal or other, navigational constraints or risks
3. Having been permitted for navigation, other uses of opportunity, such as commercial filming of the vessel, should not be performed.

Guidelines

Pre-deployment Planning and Environmental Impact Assessment (EIA)

Requirements of the Environmental Protocol and its Annexes

- i. A permit for operation of an RPAS for navigational use must be issued by an appropriate national authority before the activity is undertaken.
- ii. Any proposed activities undertaken in the Antarctic Treaty area shall be subject to the procedures set out in Annex I of the Environmental Protocol for prior assessment of the impacts of those activities on the Antarctic environment.
- iii. Flying or landing an aircraft in a manner that disturbs concentrations of wildlife is prohibited in Antarctica, except in accordance with a permit issued by an appropriate authority under Annex II to the Environmental Protocol.
- iv. Removal of hazardous wastes from Antarctica, including electrical batteries, fuels, plastics, etc. is required by Annex III, which should be considered in contingency plans for lost or damaged RPAS as part of the Environmental Impact Assessment (EIA).
- v. A permit issued by an appropriate national authority is required to enter an Antarctic Specially Protected Area (ASPAs), and special requirements to operate RPAS may apply within an ASPA or an Antarctic Specially Managed Area (ASMA): any planned RPAS operation within ASPAs or ASMAs, including any overflight of these areas, must be in accordance with the respective ASPA or ASMA Management Plan.

General Considerations

- i. Undertake detailed pre-flight planning, including thoroughly assessing the particularities of the operational area in advance of deployment, to ensure an appropriate understanding of its topography, weather and any hazards that may impact upon an environmentally sound operation.
- ii. Map out flight plans, prepare contingency plans for incidents or malfunctions, including alternative landing sites and plans for RPA retrieval should there be a crash.
- iii. When operating RPAS from vessels, be aware of elevated risks of collisions with flying birds that often follow ships.



Operator Characteristics

- i. RPAS pilots should be well-trained and experienced before undertaking operations in Antarctica. Supporting documents and demonstration of experience (flight logs, etc.) need to be verified by the IAATO Operator.
- ii. Before operating in Antarctica, RPAS test flights should be undertaken in a variety of conditions by the pilot that will be operating in Antarctica with the specific type and model of RPAS that will be deployed.
- iii. RPAS operations should comprise a pilot and at least one observer. Pilots and designated observers should operate within Visual Line Of Sight (VLOS) with the RPA at all times, unless the operation is approved by a competent authority to operate "Beyond Visual Line Of Sight (BVLOS)".
- iv. Pilots and designated observers should be vigilant during operations and maintain good communications with each other throughout operations, watching for wildlife moving into the area of operations.
- v. When possible, pilots should avoid operation of RPAS near wildlife.
- vi. Pilots and designated observers should operate with special care near cliffs where birds may be nesting, and where practicable maintain the horizontal separation distance. During VLOS operations, pilots and designated observers should watch for, and inform each other of, signs of wildlife disturbance.

Reporting

- i. If an interaction with wildlife occurs, the designated observer (other than the pilot who should be principally focused on RPA systems and control) should record animal reactions
 - a. Interactions should be defined as changing the behavior of wildlife due to an interface with the RPAS.
- ii. Post-activity reporting should be completed in accordance with the EIA, IAATO and/or permitting associated with the activity.
- iii. RPAS operators are encouraged to carry out further research into the environmental impacts of RPAS to help minimize uncertainties and to undertake regular reviews of the research to help refine and improve currently known best practice environmental guidelines for the operation of RPAS in Antarctica.

Please also see the following support documents in the IAATO Field Operations Manual (FOM):

- Environmental Guidelines for operation of Remotely Piloted Aircraft Systems (RPAS) in Antarctica
- RPAS Best Practice Paper
- IAATO Statement on the use of Remotely Piloted Aircraft Systems (RPAS) 2018