Aviation in Antarctica: Communication mechanisms to increase safety and reduce risks

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Summary

With increased activity in Antarctica, both in terms of governmental and non-governmental activity, follows an increase in aviation activity. This includes inter and intra-continental flights, the use of drones, helicopters, weather balloons etc. An increase in activity can lead to a higher risk of accidents, incidents and near misses. Having considered outcomes of the COMNAP Antarctic Aviation Workshop (March, 2022) to increase safety and reduce risks ,it is recommended that Parties strongly encourage operators they are responsible for to keep aircraft transponders activated at all times, and that operators work to establish regional communication groups/networks to ensure real time information sharing on flights within a region.

Discussion

Activity in Antarctica has increased over the last years as seen in reports from IAATO (most recently IP42, ATCM 17) and in the Electronic information Exchange System (EIES). These numbers are expected to continue to increase. An increase in activity has been followed by an increase in aviation activities, which is also visible through the numbers from IAATO and in EIES. This includes inter and intra-continental flights, drone flights, helicopter usage as well as weather balloons to mention the most common. With an increase in activity, the risk of accidents and incidents also increases. As such it is important that the ATCM works towards minimising those risks through implementing best practice and improving communication where possible.

COMNAP had a successful Antarctic Aviation Workshop in March 2022, and there were several recommendations from the workshop that we see as useful to take forward to the ATCM for discussion. We highly recommend Parties to refer to the full workshop report that is available on COMNAPs website for more detailed information and further recommendations. In particular for this paper, we would like to highlight recommendations 1 and the recommendations relating to communication between operators (4-8).

Recommendation 1 recommends that all aircrafts must operate with transponders turned on while operating in the Antarctic Treaty area. This was agreed by the ATCM in Resolution 3 (2022), and implementation by all should therefore be a priority. Turning on transponders is a simple way to decrease the risk of accidents and incidents, and this should be done for both governmental and non-governmental operators regardless of whether or not the activity is taking place in an area of little, light or high flight activity.

The COMNAP aviation workshop also put forward a range of recommendations dealing with different aspects of communication between operators (recommendations 4-8). These highlight a range of communication needs that need to be more formalised to ensure that there is a high level of communication between operators, and a high level of awareness of the activities going on in a given area. One of our main takeaways from this is that there is a need for well-established regional groups/networks that ensure that there is real-time communication on aviation activities taking place - encompassing all aviation activities including aircraft flights, helicopter flights, balloons and drones.

From experiences in Dronning Maud Land (DML), and through our involvement in DROMLAN (Dronning Maud Land Air Network Project) we feel that we have relevant experiences that could be used in other parts of the Antarctic. In DML, DROMLAN administrates «DROMCOM» which is an updated communication list for all operators and stations in DML, both governmental and non-governmental. This together with updated email lists for intercontinental and intracontinental flights used by all operators operating in the DML area, allows us to update each other in real time on activities taking place. All subscribers to the various email lists get advanced notice as well as real time updates on all aviation activities taking place in the region. This has worked very well and proved very useful since all operators in the region actively use this tool. This approach is something we think could be useful in other regions to improve awareness of flight operations, and therefore reduce the risk of incidents and accidents.

A difficulty we see with this system is in cases where new operators, or operators that do not normally have activities in a region decide to have activities there. For a well-functioning email system to work optimally we need to have a way of making these systems known to new operators and operators that are working in other regions than those they usually operate in. We would like for the ATCM to discuss this matter.

Conclusion

We ask that the meeting recommends that all Antarctic operators:

1. Ensure that aircraft transponders are turned on at all times in line with point 6(b) in ATCM Resolution 3 (2022).
2. Encourage the establishment of regional communication groups/networks for both national and non-governmental operators to provide information in real time on all types of aviation activity including flights, helicopters, drones, and balloons etc. This could for example be through an updated email list.
3. Consider how to ensure that these email lists can be made available as appropriate so that new operators, or operators flying in other regions than they normally do can easily access the correct email lists.