



International Civil Aviation Organization

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WORKING PAPER

FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 26 August to 6 September 2024

- Agenda Item 3: Air Navigation System Performance Improvement**
3.1 Proposals to improve the efficiency of air navigation services contributing to LTAG

COMMERCIAL SPACE OPERATIONS

Presented by
International Air Transport Association (IATA), International Business Aviation
Council (IBAC) and International Federation of Air Traffic Controllers'
Associations (IFATCA)

EXECUTIVE SUMMARY

Commercial space operations are becoming more prevalent, with launches extending to different regions. At present, the aviation industry is faced with prolonged airspace closures to accommodate the launch and re-entry of commercial space craft. The growing frequency of such operations results in a significant volume of airspace being made inaccessible which drastically impacts efficient operations of traditional air transport and impacts the flying public. As commercial space launches are expected to increase in frequency and variety, it is important to manage these launches with minimal disruption to the air transportation ecosystem.

Action: The Conference is invited to agree to the recommendations in paragraph 4.

1. INTRODUCTION

1.1 The number of commercial space operations that penetrate controlled airspace in transit to the extreme upper limits of the atmosphere or above that airspace are growing. There is also an increase in the number of uncrewed aircraft operating for days and months at and above FL600.

1.2 Although there are concepts and proposals to minimize the amount of airspace used by these operations, the proposals have left several concerns that need to be addressed. While work has already started within ICAO working bodies, there is a need for to ensure results are obtained in a timely manner.

¹ Arabic, Chinese, English, French, Russian and Spanish versions provided by IATA.

2. **DISCUSSION**

2.1 As launch and recovery of spacecraft increase, the amount of airspace that needs to be protected also increases. Some launches require the reservation of a significant volume of airspace. At the moment, the aviation industry is faced with prolonged airspace closures to accommodate the launch and re-entry of commercial spacecraft.

2.2 The reservation of large portions of airspace results in operational disruption to airline network operations and delays for the flying public. The additional time/distance flown due to rerouting also has a cost and environmental impact. With the industry's commitment to the sustainability agenda, there needs to be a more efficient and harmonized way to manage commercial space launches. Additional flight time could reach up to 20-30 minutes per flight, which is estimated to result in ~1060 kgs additional CO² emissions per route/flight impacted.

2.3 To block airspace, ANSPs need to create temporary flight restrictions and publish a NOTAM to effectively communicate the reservation of airspace to all other airspace users, including airlines. However, the management and dissemination of NOTAMs is not always effective or timely.

2.4 The airspace is blocked for safety of the launch and other aircraft in the area, due to risk of falling debris. Additional airspace is also blocked around the launch site, and buffers are added in case there is a need for interruption during the launch. However, due to the lack of global standards for safety requirements for launches, every State determines the safety buffers and airspace reservations differently.

3. **CONCLUSION**

3.1 There is a need for global guidance to facilitate the management of controlled airspace during launch and re-entry of space operations. Airspace is a finite resource and as more new entrants commence and expand their operations, access to airspace should remain equitable and fair.

3.2 Timely communication with all airspace users and an inclusive approach to decision making will help manage space operations through controlled airspace. For such, there is a need for a wider application of collaborative decision making (CDM).

3.3 Furthermore, there is a need to define global procedures related to the safe and efficient transit of aerospace vehicles through controlled airspace.

4. **ACTION BY THE MEETING:**

4.1 The Conference is invited to agree to the following recommendations:

That States:

- a) share lessons learned to improve the risk assessment and identification of hazard areas associated with commercial airspace operations;
- b) promote collaborative decision making for effective and efficient management of launch and re-entry;
- c) ensure timely sharing of information, including the dissemination of NOTAMs concerning commercial airspace operations;

that ICAO:

- d) prioritize the development of procedures related to the safe and efficient transit of aerospace vehicles through controlled airspace;
- e) consider the establishment of an expert group to address all operational, safety and regulatory issues related to commercial space operations and higher airspace operation (HAO) including high altitude platform system (HAPS) transiting through controlled airspace; and
- f) develop guidelines to assess and mitigate safety risks posed by re-entry of space vehicles through controlled airspace.

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