International Civil Aviation Organization
North American, Central American and Caribbean Office

INFORMATION PAPER

IAIM — IP/02
18/10/2018

Integrated Aeronautical Information Management Transition Planning Meeting (IAIM) (AIM Strategy)
Mexico City, Mexico, 29 to 31 October 2018

Agenda Item 7: Other Business

OTHER EMERGING ISSUES IMPACTING THE GLOBAL AIR NAVIGATION SYSTEM

(Presented by Secretariat)

EXECUTIVE SUMMARY	
This paper presents an overview of emerging issues that may impact the global air navigation system. It provides details on two new types of operations: the growing sector related to Commercial Space Transport (CST); and the reintroduction of Supersonic Transport (SST) for civil use. While they are not yet fully operational, it is important to consider and monitor their development as these operations may become regular before the next thorough revision of the Global Air Navigation Plan (GANP).	
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency
References:	• Doc 7300, *Convention on International Civil Aviation*

1. Introduction

1.1 Since the Twelfth Air Navigation Conference (AN-Conf/12), ICAO has been studying and monitoring several emerging issues that may impact the global air navigation system. At the time of writing, one specific item was seen as requiring the attention of the Conference, namely commercial space transport (CST). While not yet fully operational they are in varying stages of maturity, from developing to testing to operational (even though not frequently), and may indeed become regular before any future air navigation conference is held.

2. Commercial space transport

2.1 Over the past decade, progressive developments in the commercial space transportation industry sector have resulted in an increase in the frequency of suborbital and other space launches. This trend is expected to continue. While at the current time most launches are managed through segregation of mostly domestic and high-seas airspace, the frequency of operations will become more regular and the geography of their trajectories will transcend national boundaries. To that end, the important issues related to this sector in general, and to its safe accommodation in international airspace in particular, must be studied and addressed.

3. Current ICAO activities

3.1 In 2014, ICAO conducted a Survey on Suborbital Commercial Space Transportation and Airspace Integration (State Letter AN 1/64-14/41 refers) which requested States and stakeholders to nominate experts to assist the Secretariat in examining this emerging mode of transport. In total, more than sixty experts were nominated and they currently meet regularly as the Suborbital Commercial Spaceflight Learning Group, an informal group tasked by the Secretariat to study the subject.

3.2 The scope of the group has been to undertake specific studies and subsequently develop informal recommendations to facilitate the conduct of suborbital commercial spaceflight (SCS) operations and their safe accommodation into airspace and aerodromes and/or spaceports.

3.3 As a priority, the group studies the impact on activities at aerodromes and in airspace of: SCS operations; landing of CST vehicles at aerodromes; and the concept of air/space ports.

3.4 As the main deliverable, the group is developing informational material based on the current regulations, practices and experiences of States that are engaged in the CST sector.

4. Work with the United Nations

4.1 It is important to note that the successful identification and resolution of CST-related issues involve both aviation and space sectors. To that end, ICAO closely cooperates on this subject with the United Nations, specifically its Office of Outer Space Affairs (UNOOSA). The main deliverable of that collaboration was a series of three jointly held aerospace symposiums.

4.2 I Information on the symposiums, including a set of observations, was developed into Conference Room Papers (CRP) for consideration by the United Nations Committee on the Peaceful Uses of Outer Space (COPUS) which are available at:

http://www.unoosa.org/oosa/oosadoc/data/documents/2018/aac.105/aac.1051155_0.html.

5. Potential issues identified to date

5.1 Through the symposiums and the work of the Learning Group, it has become increasingly clear that there are a number of potential issues that would need to be addressed in order to ensure the long term sustainability of the CST sector. These include, but are not limited to:

a) challenges and risks posed by space debris and space weather to space flight and space operations, as well as to aviation;

b) airspace management and utilization, and the protection of space systems and aviation systems taking into account the expected growth of both the CST and aviation traffic;

c) effective management of safety in the transition through airspace, either to or from space;

d) better coordination at the intergovernmental level with the Committee on the Peaceful Uses of Outer Space on issues related to potential overlaps between Air and Space law

e) the possible future establishment of a space traffic management regime, which would need to be safely interoperable with the existing global air traffic management system and supporting infrastructure;

f) consideration of performance-based Standards to address risks associated with CST to allow for the flexibility of future technological development, increased predictability and transparency, enhanced implementation and effective management of safety; and

g) recognition of the wide range of different “vehicles”, both manned and unmanned, and the challenges faced with their proper classification as a space object, an aircraft, or possibly both.

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