INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY SEVENTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/27)

Bangkok, Thailand, 5 to 8 September 2016

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.2: **ATM**

STANDARDIZATION OF OPERATIONAL TRIALS IN OCEANIC AIRSPACE

(Presented by the United States)

SUMMARY

Well-designed operational trials are critical to the successful implementation of new Air Traffic Management (ATM) procedures. They are used to demonstrate a practice, to acquire operational performance data, to expose participants to potential changes in operation, and to test the viability of one or more sub-systems that are critical to a new ATM procedure. Trials conducted over oceanic/high seas airspace have produced measurable gains in capacity and efficiency. However, operational trials are also associated with elevated risk and generally involve special training, software and equipment. At any one time, multiple trials may be ongoing in oceanic airspace around the globe. A single aircraft can be subject to more than one trial in a single journey, but there is no ICAO guidance to govern their conduct. To ensure that primary safety considerations are addressed in the design and execution of operational trials, ICAO and States should develop guidance to standardize the planning and implementation of operational trials in oceanic airspace.

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*

B: ***Air Navigation Capacity and Efficiency****—Increase the capacity and improve the efficiency of the global aviation system*

1. INTRODUCTION

1.1 Well-designed operational trials are critical to the successful implementation of new ATM procedures. They are used to demonstrate a practice, to acquire operational performance data, to expose participants to potential changes in operation, and to test the viability of one or more sub-systems that are critical to a new ATM procedure. However, the experimental nature of these trials means that participants and passengers may be exposed to risks not otherwise present in the use of established procedures.

1.2 Amendments to several Annexes to the Convention on International Civil Aviation, applicable since November 2009, introduced harmonized requirements for the implementation of Safety Management Systems (SMS) by aviation service providers. Accordingly, aircraft operators and other aviation service provider organizations must establish and apply a formal risk management process within the framework of the organizational SMS to ensure that risks are systematically analyzed (in terms of probability of occurrence and severity of hazard effects), assessed (in terms of tolerability) and controlled to an acceptable level (by implementation of mitigation measures).

1.3 Trials conducted over oceanic/high seas airspace have produced measurable gains in capacity and efficiency. Nevertheless, it is important to ensure that primary safety considerations are addressed in the design and execution of operational trials; the trials are well-documented and procedures are clear to participants; and regional agreement regarding the scope of the trials is established as necessary. Therefore, ICAO and States should develop guidance to standardize the planning and implementation of operational trials in oceanic airspace.

2. DISCUSSION

2.1 Operational trials occurring over the high seas may involve operators from multiple States, as well as airspace assigned to and managed by multiple States. Therefore, regional agreement is appropriate in such circumstances. Working Groups within the ICAO regional structure, such as the Planning and Implementation Regional Groups and the Regional Aviation Safety Groups, should be aware of and engaged in the implementation and oversight of operational trials conducted in oceanic airspace.

2.2 Operational trials are used to demonstrate a practice, to acquire operational performance data, to expose participants to changes in operation, and to test the viability of one or more sub-systems that are critical to a new ATM procedure. It is important to both conduct and document a safety risk assessment for the benefit of all stakeholders – such as air navigation service providers, air operators, and State regulators – prior to implementing an operational trial. Primary consideration should be given to the safety of non-participants in the surrounding environment, as well as to the participants operating in the trial environment.

2.3 At any one time, multiple trials may be ongoing in oceanic airspace around the globe. A single aircraft can be subject to more than one trial in a single journey. However, there is no ICAO guidance to govern their conduct, nor is there a centralized coordination arrangement to ensure that trials will not cause confusion to a flight crew traversing airspace in which more than one trial may be ongoing. For this reason, trials in oceanic airspace should be considered within the global framework. A centralized coordination arrangement for all trials in oceanic airspace and access to this information would allow users to make more informed decisions regarding their flight planning in or around such trials.

2.4 This paper recommends the development of common requirements or guidelines regarding operational trials according to the following principles:

2.5 At a minimum, plans for an operational trial should describe the scope and objective of the trial; the data that will be collected; notification procedures for commencement, termination, and suspension; the timeframe and duration of the trial; and the parameters for the success or failure of the trial. Furthermore, the plan should be accompanied by a reasonable safety assessment that is available to all stakeholders.

2.6 Operational trials should be of limited scope and/or duration. They should be long enough or extensive enough to obtain the information or quantifiable basis for extending operational practice, but they should not be extended beyond the minimum duration required to collect the necessary data.

2.7 The United States supports the development of guidance material to standardize the planning and implementation of operational trials in oceanic airspace.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) Note the potential capacity and efficiency benefits to be gained from the introduction of new ATM initiatives and/or systems;

b) Acknowledge that safety considerations must be documented and addressed prior to conducting operational trials of new ATM initiatives and/or systems in shared oceanic airspace;

c) Recognize the importance of sharing information regarding the status of trials that affect the aviation community; and

d) Recommend that ICAO develop guidance material regarding the design and execution of operational trials in oceanic airspace.

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