



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

RESILIENCE OF THE AIR NAVIGATION SYSTEM

(Presented by International Air Transport Association (IATA) and
International Business Aviation Council (IBAC))

EXECUTIVE SUMMARY

An airspace disruption may have several root cause factors; from geopolitical tension to civil unrest to armed conflict and natural disasters, industrial action, to cyber-attacks on aviation digital infrastructure. It is easier to anticipate some types of natural disasters, for example, some regions can predict and prepare for hurricane or typhoon seasons. Even when an interruption in air navigation services or airspace closure is anticipated, political unrest and armed conflict often persist for long periods of time during which there is little information provided to civil aviation about how the situation is evolving on the ground. The issue is compounded when the airspace across and adjacent to where the disruption occurred is not efficiently managed. This paper proposes a framework for addressing long-term disruption or service interruption and how to ensure operational resilience.

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

1. INTRODUCTION

1.1 Climate change is impacting weather patterns, which is changing the frequency and severity of natural disasters. At the same time, the geopolitical environment in certain regions is resulting in interruptions in air navigation services, some of which are long term unavailability of airspace.

1.2 The recent strategic guidance of the Global Air Navigation Plan (GANP) appends “Resilience” to capacity. The Global ATM Operational Concept (GATMOC) also outlines an intention that the worldwide air navigation system ought to leverage its intrinsic potential to accommodate the demands of airspace users during peak periods and in high-traffic areas, while also aiming to reduce limitations on the flow of traffic. Therefore, the air navigation system must be resilient enough to withstand service interruptions and the associated temporary reductions in capacity.

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

2. DISCUSSION

2.1 A service interruption often has a spill-over effect, by which the impact of a disaster may not only be felt in its immediate location, but also within that region, and sometimes across several regions. Therefore, air navigation system resilience should not be restricted to the boundaries where the cause of service interruption is since an airspace closure will impact traffic through adjacent flight information regions (FIRs).

2.2 The number of airspace disruptions have increased in recent years, impacting the available airspace capacity. In cases where there is a long-term airspace disruption, airline continue to face challenges impacting efficient operations around airspace no longer available for civil aviation. This is primarily due to inefficiencies in the airspace that existed prior to the airspace disruption but were amplified with the re-directed traffic.

2.3 Avoidance scenarios and contingency measures, in the case of a long-term disruption, should consider the impacts on airline operations and what some of the issues/challenges are, e.g., impact on fuel, aircraft performance and crew duty time limitations, but also take these constraints into consideration when implementing contingency plans and re-routing.

2.4 ICAO's AN-Conf/14-WP/10 underlines how the use of strategies and initiatives covered by ICAO provisions, such as air traffic flow management, flexible use of airspace and civil-military cooperation, can result in performance improvement across large sectors of airspace. Such airspace optimization initiatives can support more efficient airline operations across axes where there was a shift in traffic flow due to an airspace disruption.

2.5 Exchange of information, amongst States, for known and anticipated disruptions, can help air navigation services providers (ANSPs) and airlines better prepare and agree on contingency scenarios. Additionally, organizing tabletop exercises to test our contingency plans can enhance the ability of ANSPs, airport and airlines to develop collaborative approaches to assessing risks and responding to disruptions.

2.6 At a tactical level, the contingency coordination teams (CCTs) work well in managing and mitigating short term disruptions. However, in the case of long-term unavailability of airspace, work should go beyond contingency (temporary) re-routing.

3. CONCLUSION

3.1 With increasing number of long-term airspace disruption, there is a shift in traffic flows across some regions. This requires airspace optimization across these traffic flows. Airspace optimization initiatives such as air traffic flow management (ATFM) and flexible use of airspace (FUA) can be used.

3.2 Safety risk assessments, especially when it comes to making decisions for resuming normal operations, require having the right information and at the right time. Sharing of known risks on restrictions between governments is a critical enabler of this process.

3.3 While the provisions of Annex 11 — *Air Traffic Services* relating to contingency planning provide an outline for regional and cross regional work on airspace resilience and response to service interruptions, there remains a need for additional guidance, specifically when it comes to recovery to normal operations.

4. **ACTION BY THE MEETING:**

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

That States:

- a) implement airspace optimization initiatives covered by ICAO provisions, such as air traffic flow, flexible use of airspace and civil-military cooperation;
- b) share advance information related to known/anticipated disruptions; and

that ICAO:

- c) together with industry, develop a global guidance on ATM contingency management and recovery phase, and regional frameworks, to support the implementation of Annex 11 — *Air Traffic Services* provisions.

— END —