



International Civil Aviation Organization

WORKING PAPER

A40-WP/225¹
EX/85
2/8/19

ASSEMBLY — 40TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 15: Environmental Protection – General provisions, Aircraft Noise and Local Air Quality– Policy and Standardization

ACI'S VIEWS ON THE REINTRODUCTION OF SUPERSONICS AIRCRAFT AND THE DEVELOPMENT OF APPROPRIATE SARPS

(Presented by the Airports Council International (ACI))

EXECUTIVE SUMMARY

ACI acknowledges the progress made by the ICAO Committee on Aviation Environmental Protection (CAEP) during its last cycle (CAEP/11) and welcomes the exploratory study for supersonic aircraft. ACI believes it is essential to better inform States on the potential noise and emissions impacts of newly developed supersonic aircraft, so they can take an informed decision on SARPs' stringencies. ACI expects the exploratory study to better address all the impacts of such aircraft.

Furthermore, it is essential that the development of the necessary SARPs be completed in a timely fashion to respond to the industry requirements, without compromising the need to address relevant aspects of supersonic aircraft design and operations which may have an impact on the environment, airport operations, and the public. Balancing these aspects will be necessary throughout the process.

In order to be acceptable to communities around airports, supersonic aircraft must not be noisier than comparable subsonic aircraft during their subsonic operations and must also comply with current and future noise and emissions subsonic-equivalent SARPs. In addition, enroute supersonic SARPs should also address the issue of sonic boom and the impact of supersonic aircraft operations on the general public. Consideration must also be given to operational traffic integration issues, including approach speed, separation, glide slope and runway occupancy.

Action: The Assembly is invited to:

- a) Recognize ACI's views on supersonic SARPs development;
- b) Amend Assembly Resolution A39-1, Appendix G to remove the specific reference to sonic boom;
- c) Request Council to develop noise and emissions SARPs for supersonic aircraft which promote the sustainable development of international aviation; and
- d) Recognize that the introduction of supersonic aircraft should not disrupt traffic flow of other aircraft, lead to loss of capacity, or unintentionally reduce efficiency or environmental impact elsewhere in the system.

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

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective E: Environmental Protection
<i>Financial implications:</i>	No financial implication
<i>References:</i>	<ul style="list-style-type: none"> • A40-WP/54-EX/21 • A40-WP/57-EX/24 • A40-WP/354-EX/148 (Information Paper)

1. INTRODUCTION

1.1 The reintroduction of supersonic aircraft may occur as early as 2023. The ICAO Committee on Aviation Environmental Protection (CAEP) is currently working on the development of noise and emissions Standards and Recommended Practices (SARPs) for supersonic aircraft. ACI fully supports the work at CAEP and recognizes the need of ICAO to develop timely international SARPs which promote the harmonized sustainable development of international aviation.

1.2 However, ACI is concerned that manufacturers have not been able to present evidence that new supersonic aircraft will be able to meet the latest ICAO standards for their subsonic counterparts of the same Maximum Takeoff Mass (MTOM). Considering that there is strong pressure on airports to reduce the noise and emissions footprint around them, and to reduce the impact of aviation on their communities, ACI believes that the re-introduction of supersonic aircraft must not undermine the efforts and achievements of the industry over the past decades. This is a matter which affects the entire aviation industry.

1.3 Furthermore, with the most recent scientific evidence brought by the Inter-governmental Panel on Climate Change (IPCC), which confirmed the need to limit global warming to 1.5°C it has become ever more relevant to ensure that the reintroduction of supersonic fleets do not reverse decades of improvements in fuel burn efficiency.

2. NOISE

2.1 In terms of assessment of community noise impact of supersonic aircraft, particularly around airports, ACI is concerned that their operational characteristics may not be fully captured using current subsonic noise certification methodologies. ICAO needs to address this challenge properly, as not to do so would undermine the achievements and efforts of the aviation community to address noise at and around the airports. For airports, there would be a negative impact on the relationship our members have strived to establish with surrounding communities. For others in the aviation sector, it could lead to calls for restricted operations or other measures which would limit the opportunities to accommodate the growth in air service demand.

2.2 ACI therefore supports the agreement to an exploratory study at the CAEP/11 meeting in February 2019 and expects the study to deliver an assessment of the likely impact on community noise. The results of the study are intended to provide CAEP with a better understanding of airport noise impacts resulting from the introduction of supersonic aircraft, and not prejudice the need to conduct a

stringency options analysis in the future. ACI will participate fully in the study drawing on its global membership to provide expert practical advice.

3. EMISSIONS

3.1 The IPCC Report published in October 2018 highlighted the need for the entire global economy to transition to net zero emissions by 2050 in order to avoid the most severe impacts of climate change. Considering these recommendations, and the expected growth of aviation in the coming decades, ACI believes that supersonic aircraft should also comply with subsonic-equivalent ICAO CO₂ standard. This is a matter in which the aviation industry as a whole needs to be seen to be making progress to meet its international obligations.

3.2 Similarly, local air quality standards that have already been addressed by ICAO for subsonic engine emissions should apply to supersonic aircraft when they operate subsonically in the vicinity of airports.

4. OPERATIONAL ISSUES

4.1 ACI is also concerned about the operational integration of supersonic aircraft at congested airports. It is currently not clear what approach speed, wake separation, glide path angle, or runway occupancy supersonic aircraft will require, manufacturers have not been able to show that new supersonic aircraft will be able to behave in a similar way to subsonic aircraft of the same MTOM. ACI is of the general view that the introduction of supersonic aircraft should not disrupt traffic flow of other aircraft, lead to loss of capacity, or unintentionally reduce efficiency or environmental impact elsewhere in the system.

5. ICAO RESOLUTION A39-1

5.1 Resolution A39-1, Appendix G, should be extended to apply to the Landing and Take-Off (LTO) SARPs development. Specifically, Clause 2 of the Resolution instructs the Council, in the light of the available information and availing itself of the appropriate machinery, to review the Annexes and other relevant documents, so as to ensure that they take due account of the problems which the operation of supersonic aircraft may create for the public.

5.2 ACI fully supports the Council's proposal to change the text of the Resolution to include an explicit mention of the exploratory study on supersonics agreed at the CAEP/11 meeting. Considering that the exploratory study will address the impacts of supersonic aircraft operations at airports and that the sonic boom is not anticipated to be created during LTO procedures around airports, ACI believes the title of the Resolution should be revised accordingly, to remove the reference of sonic boom to better reflect the content. There is no doubt that ICAO should take due account of the problems which the operations of supersonic aircraft may create for the public, that those problems go far beyond the sonic boom issue, and affect airports and communities surrounding them.

6. DEVELOPING STANDARDS FOR NEW SUPERSONICS WHICH PROMOTE SUSTAINABLE AVIATION

6.1 Establishing a proper balance between the need to develop timely SARPs with the appropriate stringency is not easy. However, ACI believes that for such a balance to be established for supersonic aircraft, they need to comply with equivalent existing environmental SARPs, if they are to be accepted.

6.2 ACI acknowledges the challenges faced by CAEP to develop SARPs when there are no supersonic aircraft in operation. By comparison, SARPs for subsonic aircraft have been developed with aircraft in operation and their technology fully developed and understood. These challenges add an extra responsibility for ICAO to ensure that SARPs are developed to address both the operational envelope and the environmental consequences.

7. CONCLUSION

7.1 Airports already face many operational and environmental challenges from current noise and emissions from subsonic aircraft. ACI believes that it is crucial that supersonic aircraft not cause a negative impact on the delicate balance and the level of public acceptance of the aviation sector. Climate change is an increasing concern for the global economy, and aviation is no exception. Aviation noise and emissions are the responsibility of the entire sector and it must face the challenge to reduce them. New technologies can pave the way to prosperity, but only if they are able to fulfil the sector's obligation to grow sustainably. ICAO should ensure that all issues are properly addressed.

— END —