

CHAPTER 3. TURBOJET AND TURBOFAN ENGINES INTENDED FOR PROPULSION AT SUPERSONIC SPEEDS

EXPLANATORY INFORMATION

As part of the CAEP/7 work programme, CAEP Working Group 3 (WG3) reviewed the historical background on the development of the emissions Standards for turbojet and turbofan engines intended for propulsion at supersonic speeds and discussed general technology aspects of supersonic engines in comparison to those for subsonic applications. The output of this work was reported in the *Report of the Seventh Meeting of the Committee on Aviation Environmental Protection* (Doc 9886), February 2007.

While further work, taking into account aircraft and engine development, was considered to be necessary to give clear recommendations on future changes to Chapter 3, the following preliminary observations and conclusions were agreed:

- a) The current supersonic Standard seems to be outdated.
- b) The Standard should not be applied to new engine projects.
- c) Part III, Chapter 3, of Annex 16, Volume II, needs to be revised.
- d) The timescale for updating should take into account the technological development of any new SST engine project and be in line with the work to be undertaken on development of revised noise Standards.
- e) Any alleviation compared to the current subsonic Standard would require detailed technical investigation.
- f) In order for these conclusions to become recommendations, work needs to be completed on whether the current subsonic LTO regulatory approach can be applied to supersonic.
- g) Effects of cruise emissions from a potential fleet of supersonic business jets require more scientific understanding.

WG3 continues to monitor developments within the aviation industry and scientific community on this issue. WG3 has also agreed not to update Chapter 3 until a new SST engine project reaches a sufficiently mature level such that it can inform discussions on potential future revisions.