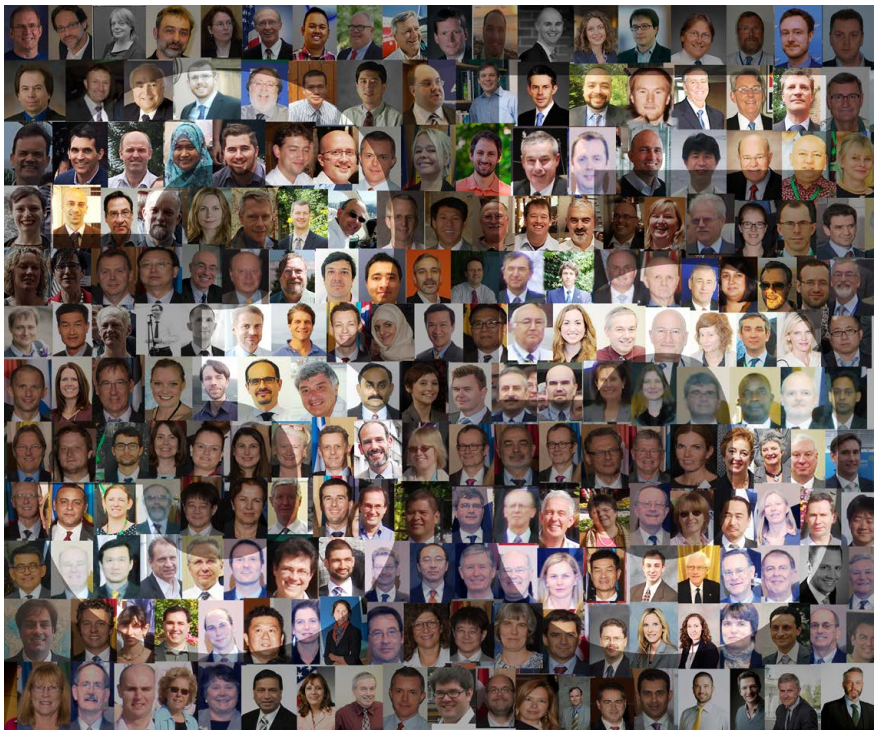
CAEP 35th Anniversary

By ICAO Secretariat



The ICAO Council established its technical Committee on Aviation Environmental Protection (CAEP) 35 years ago on 5 December 1983, superseding the Committee on Aircraft Noise (CAN) and the Committee on Aircraft Engine Emissions (CAEE). Over these 35 years, the role of CAEP has been crucial in assisting the ICAO Council in formulating new policies and adopting new international Standards and Recommended Practices (SARPs) relating to aircraft noise and emissions. CAEP consists of Members and Observers from States, intergovernmental and non-governmental organizations representing aviation industry and environmental interests. The successes achieved by CAEP are due to the commitment and technical prowess of the experts nominated by CAEP Members and Observers.

CAEP has completed eleven cycles which were full of significant achievements, major challenges and hard work to address the environmental aspects associated with international civil aviation. This has aimed to limit or reduce the number of people affected by significant aircraft noise; to limit or reduce the impact of aviation emissions on local air quality; and to limit or reduce the impact of aviation greenhouse gas emissions on the global climate.

The most significant and demanding deliverables from CAEP are reflected in the International Standards and Recommended Practices (SARPs) contained in Annex 16 to the Convention on International Civil Aviation. These encompass: aircraft noise (Annex 16, Volume I), aircraft engine emissions (Annex 16, Volume II), aeroplane CO_2 emissions (Annex 16, Volume III), and, most recently, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) contained in Annex 16, Volume IV. These SARPs were developed by means of a technically-driven and consensus based approach, with effective cooperation between ICAO Member States, industry, relevant aviation stakeholders and civil society. During the past 35 years, CAEP has worked diligently to develop and

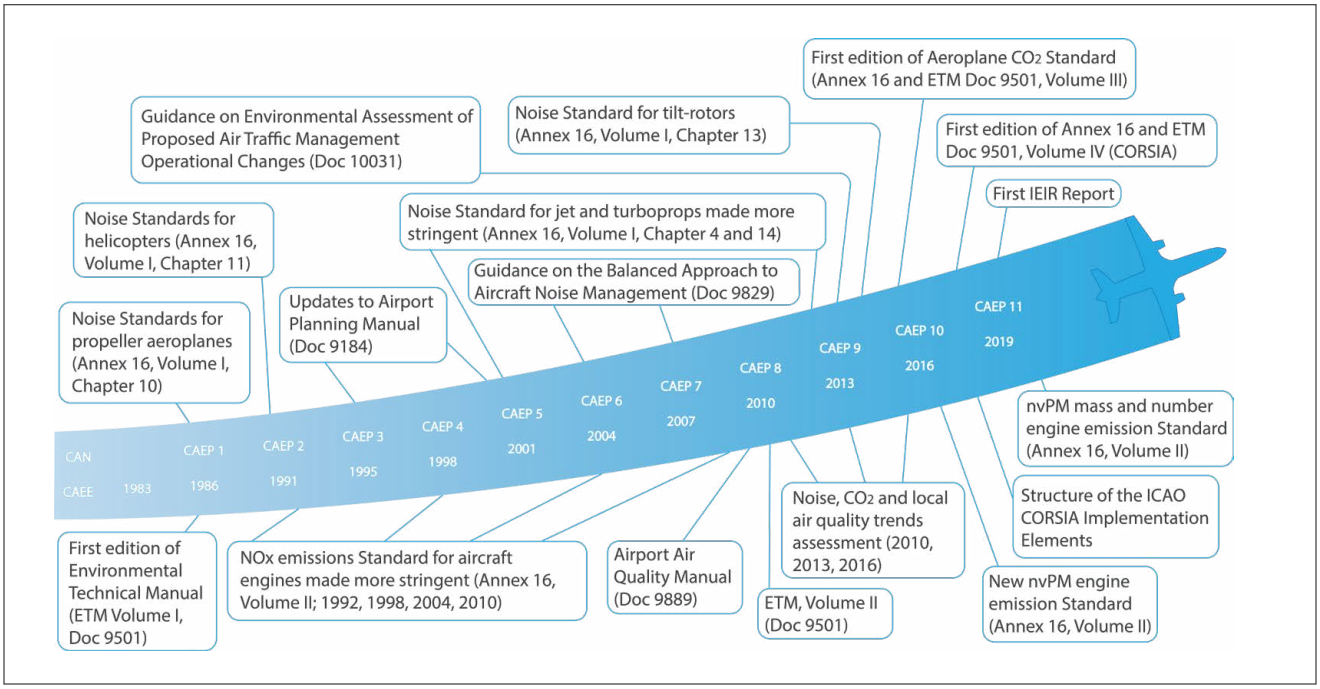
to keep ICAO environmental SARPs up-to-date, ensuring that the latest environmental technologies are incorporated into new aircraft designs, and the environmental impact of international civil aviation is limited and reduced.

CAEP also developed various guidance materials that support States' initiatives towards the environmental goals defined by the ICAO Assembly. The overarching ICAO Policy on aircraft noise management, the "balanced approach", is fully detailed in ICAO Doc 9829, *Guidance on the Balanced Approach to Aircraft Noise Management*. ICAO Policies on local air quality are addressed in the Airport Air Quality Manual (ICAO Doc 9889). CAEP's work has also resulted in the development of guidance to address the climate change impacts of civil aviation. ICAO Doc 9184 Part 2, *Airport Planning Manual* is a significant piece of guidance delivered by CAEP, as it provides a comprehensive analysis of international aviation environmental impacts and outlines strategies to reduce them from the design, planning and operations of airports. The global environmental trends developed by CAEP have also provided the fundamental basis for ICAO decision-making on environmental matters. Recently, in light of the challenges ahead of the sector, CAEP has expanded its scope of actuation by providing sound technical analysis on topics such as sustainable aviation fuels, climate change adaptation, community engagement, and aircraft end-of-life.

The most recent meeting of CAEP, the 11th CAEP Meeting (CAEP/11) took place in ICAO Headquarters in Montréal in February 2019. The meeting agreed, inter alia, on new non-volatile particulate matter (nvPM) mass, and number standards, new integrated noise, and emissions technology goals for the sector. The meeting also considered technical details associated with the consideration of CORSIA eligible fuels, a global synthesis on climate change adaptation and aircraft end-of-life and recycling. It also considered an eco-airports toolkit e-collection, community engagement for Performance Based Navigation (PBN), and the environmental analysis of the ICAO Aviation System Block Upgrades (ASBU), amongst many other items to address aircraft noise and emissions.

The new, quickly emerging aviation technologies and innovations demand an enhanced approach for the consideration and analysis of their impact on environment, with the subsequent delivery of relevant SARPs. In turn, this requires coordination with different stakeholders and the involvement of new specialists and expert groups. New electric and hybrid aircraft technologies, while

FIGURE 1: Timeline



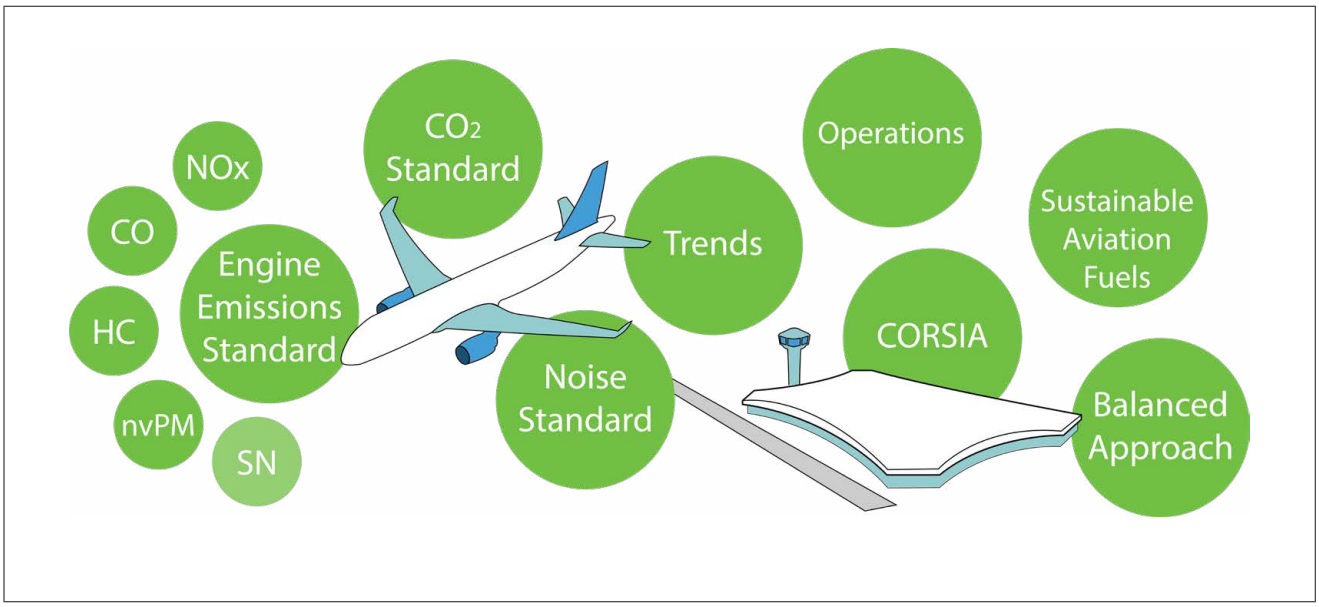
promising significant environmental benefits, require specific considerations on the use of batteries and possibly on non-traditional certification procedures. To keep the pace towards new, emerging fields and the fast speed in which new technologies arise, CAEP periodically reviews its structure and approach to the work and considers novel practices into its working process.

CAEP has experienced changes and evolved continuously through its 35 years, and as the Committee's work continues to be based on the commitment of people: the CAEP Members, Observers, and their technical advisors. Over 600 experts from 31 States and 10 international organizations contribute to the work of CAEP. Numerous meetings and hundreds of teleconferences are held during each 3-year CAEP work cycle. All these efforts result in ICAO policies and SARPs being aligned with the main principles of CAEP work which accounts for technological feasibility, economical reasonableness, environmental benefit and interdependency of measures.

Moving into the future, CAEP will continue to monitor the developments and new emerging issues in aviation environmental protection, in order to take necessary actions, and make well-considered recommendations to the ICAO Council, in a timely manner.

All of these developments demonstrate that CAEP continues to provide invaluable contributions that have enabled a sustainable path for international aviation, and will remain of paramount importance in continuing this path in the future, and in enabling the ICAO Council to address upcoming environmental challenges.

FIGURE 2: CAEP Deliverables



CAEP Publications

- Reports of the Committee on Aviation Environmental Protection (CAEP/10, Doc 10069; CAEP/9, Doc 10012; CAEP/8, Doc 9938; CAEP/7, Doc 9886; CAEP/6, Doc 9836; CAEP/5, Doc 9777);
  - Annex 16 to the Convention on International Civil Aviation — Environmental Protection: Volume I — Aircraft Noise
  - Volume II — Aircraft Engine Emissions
  - Volume III — Aeroplane CO_2 Emissions
  - Volume IV — Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
- Environmental Technical Manual (Doc 9501, Volumes I, II, III, and IV)
- Guidance on the Balanced Approach to Aircraft Noise Management (Doc 9829)
- Offsetting Emissions from the Aviation Sector (Doc 9951)
- Report on Voluntary Emissions Trading for Aviation (VETS Report) (Doc 9950)
- Guidance on Aircraft Emission Charges Related to Local Air Quality (Doc 9884)
- Guidance on the Use of Emissions Trading for Aviation (Doc 9885)
- Airport Air Quality Manual (Doc 9889)
- Report of the Independent Experts on the Medium and Long Term Goals for Aviation Fuel Burn Reduction From Technology (Doc 9963)
- Airport Planning Manual, Part 2 — Land Use and Environmental Control, (Doc 9184)
- Noise Abatement Procedures: Review of Research, Development and Implementation Projects - Discussion of Survey Results (Doc 9888)
- Recommended Method for Computing Noise Contours around Airports (Doc 9911)
- Guidance on Environmental Assessment of Proposed Air Traffic Management Operational Changes (Doc 10031)
- Operational Opportunities to Minimize Fuel Use and Reduce Emissions (Doc 10013)

Other e-publications available on:

- https://www.icao.int/environmental-protection/Pages/environment-publications.aspx
- https://www.icao.int/environmental-protection/Pages/Ecoairports.aspx