



WORKING PAPER

FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 26 August to 6 September 2024

- Agenda Item 2: Timely and safe use of new technologies
2.2: Addressing safety risks related to evolving aviation technologies

SYSTEM-BASED ATCO LICENSING

(Presented by the International Transport Workers' Federation)

EXECUTIVE SUMMARY

This paper presents information regarding system-based air traffic control officer (ATCO) licensing, and asks ICAO to ensure that any expansion of the current concept maintains or improves current levels of operational aviation safety.

Action: The Conference is invited to:

- a) note the information on the use and development of the concept of system-based ATCO licensing;
- b) request the ICAO Secretariat to work with all stakeholders to ensure that changes to the current licensing Standards of ATCOs as per ICAO Annex 1 — *Personnel Licensing* to accommodate system-based ATCO licensing maintains or improves current levels of operational aviation safety; and
- c) request the ICAO Secretariat to engage with the Personnel Training and Licensing Panel (PTLP) highlighting the challenges that may be created by the introduction of systems-based ATCO licensing, as well as the impact it may have on other areas to include safety, capacity and the environment.

1. INTRODUCTION

1.1 Since 1948 and through further iterations of ICAO Annex 1, the licensing of air traffic control officers (ATCOs) has been given a global framework and structure through Chapter 4 of said Annex.

1.2 Successful training and assessment (in tandem with other Standards being met) may result in the granting of an ATCO licence according to ICAO Standards, or standards further developed by States or regions.

1.3 For decades, training and assessment has relied heavily upon knowledge of air traffic-related subject areas, including air law, air traffic control equipment and meteorology, to name a few.

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

1.4 The subject areas of air law, navigation and operational procedures in particular focussed on an applicant's detailed knowledge of those elements as they pertain to the State in question. This ensures the solid and sound understanding of the various complex areas of air traffic service provision.

1.5 The applicant will normally progress to on-the-job training instruction at an aerodrome or sector (approach or en route), during which they will further hone their skills and expand their knowledge to become experts in the unit/sector at which they may eventually qualify.

1.6 This path to competence and framework upon a unit- or sector-based approach to ATCO licensing has ensured the integrity of air traffic service provision globally, and reconfirmed at any challenge the ongoing effectiveness of the provisions in ICAO Annex 1.

2. DISCUSSION

2.1 There have been developments in recent years in technology, along with calls by certain stakeholders to overhaul this system of training, and ultimately the licensing of ATCOs.²

2.2 Proposals include the desire for ATCOs to train and qualify on systems, rather than being experts in specific units or sectors. ATCOs would, in theory, be issued with a licence to provide air traffic services on a specific system. It is presumed that any such system where sufficiently supported by technology would permit ATCOs to be licensed on multiple "traditional sectors", or combinations of "traditional sectors" not currently or previously seen. There are proposals that where an ATCO would be licensed on a particular system and where airspace is deemed sufficiently generic, the ATCO could provide air traffic services to aircraft without ever having worked in that sector before.

2.3 In order to achieve this, there would almost certainly need to be wholesale changes to airspace structures in order to simplify the end goal that will likely have unintended and detrimental consequences for the whole aviation system.

2.4 Any wholesale changes to airspace structures to enable system-based ATCO licensing could introduce unforeseen risks into the aviation system:

- a) ATCO training may be quicker where it is done in less complicated, more generic airspace. Quicker, less thorough training of ATCOs may introduce safety risks.
- b) The ongoing competency of ATCOs may prove to be a challenge also. Any reduction of the requirements for ongoing competency to meet the aims of systems-based ATCO licensing could pose a risk to current levels of operational aviation safety.
- c) System-based ATCOs are likely to be less qualified in comparable knowledge and experience terms to traditional sector-based ATCOs as the training is not sector-specific, introducing safety risks. Areas where essential expertise would be lacking include aircraft performance, operational procedures and meteorology, where knowledge in these areas specific to the sectors in which the ATCO is controlling, would not necessarily be achieved as it would through unit- or sector-based training.

² <https://canso.org/atco-virtual-mobility-a-promising-solution-to-the-challenges-of-air-traffic-management-atm-capacity-in-europe/>

- d) Traditional airspace sectors may need to be scaled down in size to make them more manageable, and they may need to be standardised so as to reduce their overall complexity. This is highly likely to reduce capacity and may introduce other operational aviation safety risks, as well as impact environmental targets.

3. CONCLUSION

3.1 Unit- and sector-based ATCO licensing has been a mainstay of air traffic service provision and ICAO Annex 1 for decades.

3.2 Where technology advances challenge our ideas and the ways we have done things, it is essential that we ensure that the inherent safety in the system that we have come to expect, is respected and continuously enhanced.

3.3 It is incumbent upon ICAO as the global body overseeing aviation and in particular, air traffic service provision, that all areas of development as a result of technological opportunities are fit for purpose, where those areas will result in changes to ICAO Annexes.

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