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Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

GLOBAL STANDARDIZATION OF LICENSE EXAMINATION QUESTION DATABASES FOR PILOTS, AIR TRAFFIC CONTROLLERS, AND AIRCRAFT MAINTENANCE ENGINEERS

(Presented by Kazakhstan)

EXECUTIVE SUMMARY

In line with the Global Aviation Safety Plan (GASP), which emphasizes competency, harmonization, and systemic safety, this working paper highlights the critical need for the global harmonization of theoretical knowledge assessments in personnel licensing. It proposes the development of ICAO-led common examination question databases for pilots, air traffic controllers (ATCOs), and aircraft maintenance engineers (AMEs).

While ICAO Annex 1 — *Personnel Licensing* and other pertinent documents offer guidance, significant variation persists in how States assess knowledge. Unlike the globally standardized requirements for medical fitness, age limits, and skill evaluations, the benchmark for theoretical knowledge assessment remains inconsistent.

Kazakhstan submits that, since we "share the same sky," it is essential to ensure that all personnel licensed under ICAO Annex 1 meet a uniform baseline standard of theoretical knowledge, regardless of their State of licensing. This would ensure equitable knowledge competency across all Contracting States. The establishment of secure, ICAO-curated global databases of standardized examination questions would enhance fairness, consistency, and reliability in personnel licensing systems all over the globe.

Action: The Assembly is invited to:

a) recognize the critical importance of globally harmonized theoretical knowledge standards for aviation personnel licensing;
b) endorse the development of ICAO-led common examination question databases for pilots, ATCOs, and AMEs ;
c) request the ICAO Council to initiate a feasibility study and establish a working group to evaluate the development and phased implementation of the proposed system;
d) encourage Member States and relevant stakeholders, including the International Federation of Air Line Pilots' Associations (IFALPA) and the International Federation of Air Traffic Controllers' Associations (IFATCA) , to actively participate in the development, review, and pilot testing of the databases; and
e) support the adoption of a global benchmark difficulty level for examination modules, while allowing States the flexibility to raise difficulty levels in accordance with ICAO-approved methodology.

Strategic Goals:	This working paper relates to *Every Flight is Safe and Secure.*
Financial implications:	The financial impacts will depend on approved decisions.
References:	Annex 1 — *Personnel Licensing*

1. INTRODUCTION

1.1 In today's globally integrated aviation system, pilots routinely operate across international borders, serving not only their own nations but passengers and airspace users worldwide. Air traffic controllers manage a diverse array of foreign aircraft and crews, often interacting with multilingual, multicultural, and multi-standard operators. Aircraft maintenance engineers (AMEs), while typically based in their home States, frequently service international aircraft and work within multinational maintenance organizations. Together, these professionals form a globally interdependent workforce, reinforcing the need for uniform licensing standards and harmonized knowledge assessment.

1.2 While ICAO provides robust Standards and Recommended Practices (SARPs) for personnel licensing under Annex 1 — *Personnel Licensing*, a notable gap persists in the consistent assessment of theoretical knowledge. ICAO has successfully standardized areas such as minimum age, medical fitness, and skill-based evaluations. However, theoretical knowledge examinations questions — a critical prerequisite to demonstrating competence needs a globally standardized benchmark.

1.3 This paper proposes the development of a globally harmonized Licensing Examination Question Database for Pilots, air traffic control officers (ATCOs), and AMEs, to align theoretical assessments and ensure that license holders across all States meet a uniform global knowledge baseline.

2. BACKGROUND AND CONTEXT

2.1 In the absence of a globally harmonized benchmark for knowledge test, States have developed independent question sets, which vary significantly in scope, complexity, and quality. This inconsistency creates challenges in evaluating and comparing the competence of personnel across jurisdictions.

2.2 The proposed initiative is a natural progression of ICAO's ongoing efforts under the Next Generation of Aviation Professionals (NGAP) initiative and the Global Aviation Safety Plan (GASP). By developing a global question bank for the knowledge test of the license holders of Pilots (CPL/ATPL), ATCOs, AME disciplines:

a) a standardized safe knowledge level can be assured across all ICAO Member States;

b) equity and transparency in assessments can be promoted;

c) international recognition of licenses can be enhanced;

d) global mobility of aviation professionals can be supported; and

e) State safety oversight mechanisms can be reinforced.

3. PROPOSED STRUCTURE

3.1 It is proposed that ICAO establish three distinct but interlinked standardized question databases covering:

a) pilots (CPL and ATPL theoretical knowledge);

b) air traffic controllers (in alignment with Annex 1 and the *Manual on the Approval of Training Organizations* (Doc 9841)); and

c) AMEs (aligned with Annex 1 and the *Training Manual* (Doc 7192)).

3.2 The databases should be modular, competency-based, and securely maintained under ICAO oversight. Question development would involve collaboration with Member States, the International Federation of Air Line Pilots' Associations (IFALPA), the International Federation of Air Traffic Controllers' Associations (IFATCA) and other relevant international stakeholders to ensure operational credibility and representativeness.

3.3 Each database should include:

a) validated multiple-choice questions mapped to ICAO-specified knowledge areas;

b) standardized difficulty levels and competency metrics; and

c) peer-reviewed procedures for continuous updating, quality assurance, and version control.

4. IMPLEMENTATION STRATEGY

4.1 ICAO may initiate a feasibility study covering all three personnel licensing disciplines — pilots, ATCOs and AMEs — to assess technical requirements, governance models, and data protection frameworks.

4.2 While the feasibility work will encompass all three domains, the initial pilot project may commence with the development and testing of the ATPL/CPL (pilot licensing) Question Bank, given the global operational demand and maturity of pilot training systems.

4.3 ICAO should also provide:

a) a secure digital platform to host the Question Bank, with controlled access granted to designated national officials (e.g., NCMC);

b) training and orientation for national licensing authorities and examination personnel;

c) integration and alignment with ICAO's Universal Safety Oversight Audit Programme (USOAP) framework;

4.4 In light of the strategic and technical complexity, Kazakhstan respectfully proposes that ICAO establish a dedicated Working Group to lead the study and guide development. This group should include experts from Member States, as well as international professional organizations such as IFALPA, IFATCA and other relevant stakeholders. Their collective insight will ensure that the system is globally representative, technically sound, and operationally relevant.

4.5 Furthermore, it is proposed that ICAO define and publish a global benchmark of examination difficulty levels for each licensing category. This would promote consistency and transparency across Member States. Recognizing national contexts, States should retain the right to increase examination difficulty beyond the global benchmark, following an ICAO-prescribed and standardized methodology. This approach ensures harmonization while preserving regulatory flexibility.

5. CONCLUSION

5.1 Harmonizing the theoretical knowledge evaluation of aviation personnel through ICAO-managed global databases is a timely and impactful initiative to strengthen international aviation safety.

5.2 By ensuring that all license holders meet common knowledge standards — just as they meet unified requirements for skills, age, and medical fitness — ICAO can support the emergence of a more interoperable, trusted, and safety-assured global aviation workforce.

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