



WORKING PAPER

ASEVENTH WORLDWIDE AIR TRANSPORT CONFERENCE (ATCONF/7)

Montréal, HQ, 16 to 20 November 2026

- Agenda Item 2: Fostering aviation growth and air connectivity through investments in infrastructure, human capital and partnerships**
2.2: Investment for the development and modernization of civil aviation infrastructure

ADDRESSING SKILLS SHORTAGES AND RESILIENCE THROUGH AN INITIATIVE FRAMEWORK

(Presented by Ireland on behalf of the European Union, its Member States¹ and the other Member States of the European Civil Aviation Conference²)

EXECUTIVE SUMMARY

Over the past years, and particularly since the COVID-19 pandemic, civil aviation has been facing shortages of human resources, accompanied by a broader image crisis as people view it as a major contributor to environmental issues. This perception is shaping attitudes toward careers in aviation and influencing public trust. Although the drivers of this crisis are multifaceted, addressing it requires targeted and forward-looking investment strategies, that are capable of restoring confidence in aviation careers and of ensuring a prosperous and sustainable future for the sector. A possible path is through the implementation of an initiative framework, similar to the one being applied in Portugal.

Action: The conference is invited to:

- task the International Civil Aviation Organization (ICAO) to deliver the Next Generation of Aviation Professionals (NGAP) strategy, to tackle the issues of a shortage of qualified human resources for the civil aviation sector;
- ask ICAO to ensure the strategy includes a public platform, with information on all the initiatives already taking place in several Member States, which can inspire and incentivise others; and
- encourage Member States to establish incentive initiatives for attracting talent to the aviation sector.

<i>Strategic Goals:</i>	This working paper relates to Strategic Goal - <i>The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All.</i>
<i>Financial implications:</i>	The activities referred to in this paper will be undertaken with the resources available in the regular Programme Budget.
<i>References:</i>	N/A

¹ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Monaco, Montenegro, North Macedonia, Norway, Republic of Moldova, San Marino, Serbia, Switzerland, Türkiye, Ukraine and United Kingdom.

1. INTRODUCTION

1.1 Over the past years, and particularly since the COVID-19 pandemic, civil aviation has been facing a shortage of appropriately qualified human resources, as a result of a broader image crisis that affects not only young people, but also the general population. Aviation is perceived as a major contributor of CO₂ emissions and other environmental impacts, thereby intensifying concerns about the sector's sustainability. This perception is shaping attitudes toward careers in aviation and influencing overall trust, placing additional pressure on the industry to demonstrate credible and effective commitments to sustainability.

1.2 This erosion of attractiveness raises concerns regarding the sector's ability to ensure long-term resilience and competitiveness. Although the drivers of this crisis are multifaceted, targeted and forward-looking investment strategies, can restore confidence in aviation careers and contribute to a prosperous and sustainable future for the sector.

1.3 In this context, Portugal launched a national campaign 'As Tuas Asas começam aqui' or 'Your Wings start here', on 6 December 2024. This initiative currently brings together 44 partners, encompassing aviation sector organizations and companies, public and private entities, and educational institutions, with the objective of building awareness for aviation careers among young people, but also the general public, engaging academic institutions, the aviation industry and the educational system, as well as involving municipalities and social partners.

1.4 While the preliminary outcomes of this initiative demonstrate significant success at the national level, its impact could be exponentially amplified through cross-border scalability and the generation of positive network externalities.

1.5 Consequently, this working paper proposes to build on the Next Generation of Aviation Professionals (NGAP) programme of ICAO, a structured framework to foster, replicate, and support capacity-building initiatives across other Member States. This structured framework should be fuelled by a public platform with information on all the initiatives already taking place in several Member States, which can inspire and serve as an incentive for further action.

2. DISCUSSION

2.1 Civil aviation labour crisis

2.1.1 The structural disruption caused by the COVID-19 pandemic acted as a catalyst for an unprecedented labour crisis across the global civil aviation ecosystem. In the immediate aftermath of the crisis, the industry faced an acute shortage of qualified human resources, initially triggered by early retirements, pandemic-era layoffs, and a permanent migration of skilled personnel to other sectors that offer superior work-life flexibility and more attractive working conditions overall.

2.1.2 However, as the industry fully recovered its traffic volumes, it became evident that the recruitment bottleneck was not merely a temporary operational friction, but rather a systemic structural deficit rooted in a profound shift in public and generational values. Compounding these structural labour shifts is a severe reputational crisis regarding the industry's environmental footprint, particularly among certain Generation Z and Millennial demographics. Among these groups there is a perception of aviation as a disproportionate contributor to global CO₂ emissions and localised environmental degradation, which has fostered phenomena like "flight shame" (flygskam). This negative sentiment influences career choices, as modern job seekers increasingly prioritise corporate environmental responsibility and purpose-driven

employment, leading them to view traditional aviation professions, from flight crews to aerospace engineering, as incompatible with their sustainability values.

2.1.3 Consequently, this erosion of career attractiveness directly threatens the long-term resilience, operational continuity, and global competitiveness of the aviation sector. The inability to attract top-tier technical and managerial talent creates severe vulnerabilities. Without a steady pipeline of highly skilled professionals, the industry risks localised operational disruptions, diminished safety margins, and a potential wage-inflation spiral that undermines the economic viability of all players in the sector.

2.1.4 For reference, in 2025, the International Air Transport Association (IATA) presented an estimate of talent needed in the sector by 2040, considering that traffic would double in the same period, as follows: 300,000 pilots, 416,000 aircraft maintenance technicians, 678,000 cabin crew and 71,000 air traffic controllers. These figures do not include the area that, according to Airports Council International (ACI), faces the most severe deficit of qualified human resources, which is ground-handling.

2.1.5 Ground handling is also a highly critical sector. Indeed, this segment is particularly vulnerable to pressures relating to skilled labour, including recruitment and retention difficulties. As airport operational continuity depends heavily on ground handling functions, persistent shortages may affect punctuality, service quality, security, safety and the ability of platforms to adapt to environmental transition requirements. Ground handling should therefore be explicitly included in initiatives aimed at strengthening skills, attractiveness and workforce resilience across the aviation sector.

2.2 An initiative framework as a possible solution

2.2.1 To mitigate this crisis and allow for the recruitment of these much needed resources, the aviation industry must implement targeted, forward-looking strategic investments in workforce development.

2.2.2 To systematically rebuild the aviation talent pipeline, outreach initiatives should move away from isolated, late-stage high school recruitment and adopt a lifelong, age-graded engagement strategy.

2.2.3 For early childhood and primary school students (ages 6–10), the strategy focuses on sparking raw curiosity and imagination. As students transition into lower secondary education (ages 11–14), the framework should shift toward demonstrating the real-world alternatives offered by the aviation sector. By the time students reach upper secondary school and higher education (ages 15+), outreach can be transformed into concrete career pathing.

2.2.4 The integration of some aviation-related content into national school curricula and educational materials could also be encouraged. Early exposure to aviation concepts and role models for girls and boys can help increase awareness of career opportunities and foster long-term interest in the sector for all school age groups. This can be developed through cooperation between civil aviation authorities, educational institutions and even ministries responsible for the education.

2.2.5 This continuous exposure should help ensure that aviation remains a familiar, aspirational, and viable career consideration throughout a student's entire developmental journey.

2.3 The Portuguese approach

2.3.1 Portugal launched a national campaign ‘*As Tuas Asas começam aqui*’ (*Your Wings start here*), on 6 December 2024, with the following objectives:

- to inspire young people to consider careers in aviation and aerospace by awakening their dreams of a future in the aviation sector;
- to raise awareness of training and education opportunities in the sector;
- to support inclusion, gender equality and access to technical and STEM education;
- to promote aviation as a sector of innovation, climate responsibility and societal value;
- to help build a more sustainable, competitive, inclusive, and accessible aviation sector;
- to enhance the sector’s image among younger generations; and
- to improve public knowledge and understanding of aviation.

2.3.2 The campaign is based on collaboration between civil aviation authorities, training institutions, airlines, airports, air navigation service providers, industry associations, non-governmental organizations (NGOs) and other relevant stakeholders, including the national educational systems, academia, research and development centres, municipal authorities and trade unions. Materials integrated into the initiative included ones from ICAO’s TRAINAIR PLUS Programme.

2.3.3 Since its launch, and particularly since January 2025, the campaign has produced a wide range of meaningful impacts, demonstrating its increasing reach, visibility and engagement across different audiences. Overall, the actions carried out during this period involved more than 10,000 students, reflecting the campaign’s strong educational outreach.

3. CONCLUSION

3.1 The global aviation sector faces significant recruitment and skills challenges resulting from multiple factors, including workforce developments, employment and working conditions, training and qualification constraints, and changing societal expectations, including perceptions regarding environmental sustainability.

3.2 ICAO should have a central role encouraging Member States to establish incentive frameworks, as the one Portugal is deploying for example, can help to build a lifelong talent pipeline, fostering a sustainable and attractive industry image.

3.3 Building on its NGAP programme, ICAO, should develop a structured framework of initiatives across other Member States, to foster synergies and positive externalities.

3.4 Furthermore, ICAO is uniquely positioned to build a public platform with information on all the initiatives already taking place in several Member States, which can inspire and incentivise others to build their own initiatives suited to their own national and regional needs.

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