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Contents

Aviation Security Training

Finding a sustainable approach

Contact

Introduction

In an era characterised by rapid technological developments and with increasingly diverse challenges, aviation training stands at the forefront of evolution. Geopolitical tensions, the enduring impact of the Covid-19 pandemic, and the relentless advancement of technology all contribute to a dynamic landscape where the need for comprehensive, innovative and consistently engaging training solutions is paramount.

Within this context, ensuring the competence, resilience, and motivation of frontline personnel tasked with security activities is of utmost importance. However, amidst the pursuit of training excellence, the role of aviation security instructors often remains underappreciated. Recognizing this trait, since 2005 Butterfly Training has spearheaded a digital approach aimed at enhancing training outcomes and efficiency.

This article embarks on an exploration of the

primary challenges faced by states, appropriate authorities, regulators, and entities in establishing robust aviation training frameworks. It also examines the innovative methodologies employed by the Regulators in evolving their training approach, offering insights into promising solutions for longstanding issues.

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The primary objective in establishing and maintaining a **certification system within aviation training** is to ensure its sustainability, efficiency, effectiveness, and transparency, ultimately leading to proportionate and enduring security outcomes. Any local authority must ensure the efficacy of the training system by promptly addressing emerging risks and fostering a regulated environment conducive to high-quality instruction. Moreover, efforts must be directed towards streamlining the certification process to optimise the utilisation of available resources.

It's imperative to recognize that **there isn't a one-size-fits-all approach to aviation training certification**. Rather, adherence to **key regulatory requirements is essential**, while the specifics of the certification process are influenced by factors such as the state's aviation footprint, security readiness, prevailing threat landscape, and risk tolerance. States must adopt certification methodologies that suit their unique circumstances and facilitate continuous enhancement.

According to ICAO Annex 17, certification entails a formal assessment and confirmation, conducted by or on behalf of the appropriate aviation security authority, verifying that an individual possesses the requisite competencies to execute assigned duties at an acceptable standard as defined by said authority. While international standards and regulations outline the competencies expected in aviation training, the determination of acceptable standards is delegated to individual authorities on a national level.

Reference:
ICAO Annex 17, Aviation Security, Safeguarding International Civil Aviation against Acts of Unlawful Interference, Twelfth Edition, July 2022.

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1.

Aviation Training Standards — Why does it matter?

Training is a cornerstone of the aviation security system, with instructors playing a pivotal role in shaping the **knowledge and skills of our workforce**. Whether in direct security roles or other functions within the aviation sector, new personnel must undergo rigorous, high-quality training to instil motivation and **develop essential competencies to raise awareness** of their role in keeping civil aviation secure. Additionally, recurrent training is essential to ensure ongoing proficiency through the revision of previous core competencies, training in new methodologies and covering any legislative changes, plus assessing any practical and on-the-job training skills.

Aviation instructors wield significant influence over the commitment and motivation of trainees, **making training a crucial element** of the staff journey and often serving as individuals' first interaction with the industry.

By instilling **good security behaviours** from the outset, instructors contribute to fostering a **positive security culture** that is fundamental to maintaining the safety and security of the public and the entire aviation community.

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2.

International Training Standards

The evolution of international aviation training standards can be traced back to **Amendment 12 of ICAO Annex 17 in 2011**, which was rooted in the ICAO Assembly resolution A36-20 of 2007. This amendment introduced Standard 3.1.7, mandating the development and implementation of training programs alongside an **instructor certification system**. This marked the inception of a global initiative urging states to establish their national certification systems. Subsequently, Amendment 18, introduced in July 2022, provided further advancements in this domain. Standard 3.4.1 within Amendment 18 takes a broader approach to staff training and qualification by necessitating the establishment and implementation of a national training policy.

Annex 17 of ICAO outlines the requirement for states to devise and execute a certification system ensuring instructors' qualification in relevant subject matter as per the National Civil Aviation Security Programme (NCASP). The **ICAO Security Manual** offers supplementary guidance on instructor competency, not only delineating components of certification but also emphasising the instructors' role in promoting a **security culture**.

Reference:
ICAO Annex 17, Safeguarding International Civil Aviation against Acts of Unlawful Interference, Ninth Edition, March 2011.

3.

Aviation Training Standards in the European Region

In the European Region, there are minimum requirements set forth for aviation training as outlined in EC 300/2008 and again in the detailed **implementing measures EU 2015/1998**. These standards encompass various aspects, including enhanced background checks, proficiency in instructional techniques, familiarity with the operational environment in relevant aviation security domains, and expertise in the security aspects to be taught. To ensure ongoing relevance, personnel involved in training must undergo **recertification every three to five years** (depending on the local legislation) and receive regular updates on developments within the relevant fields.

Additionally, these standards are mirrored in the European Civil Aviation Conference's (ECAC) Doc 30 **Part II Policy statement on civil aviation security**. While not legally binding in the same manner as EU regulations, this document serves to establish a mutually agreed-upon standard for the 44 ECAC member states, emphasising the importance of **maintaining high-quality training** practices across the region.

4.

Sustainable and Proportionate Approach to Aviation Training

Establishing a sustainable and proportionate **approach to aviation training is crucial**, considering the resource-intensive and time-consuming nature of certification processes within states. It's essential to evaluate whether the certification system is equipped to handle growing demand and technological advancements. With civil aviation expanding and post-pandemic recovery driving accelerated human capital and training needs, there's a heightened demand for versatile and resilient instructors, particularly with the introduction of new screening technologies like computed tomography explosives detection systems (CT-EDS). Additionally, existing instructors must recertify within either three or five years in EU/ECAC Member States, potentially increasing the number of certification processes required.

It's imperative to assess the proportionality of the certification process, especially considering different approaches to instructor certification driven by varying levels of desired control. In states with lower security system maturity, highly controlled approaches are common but demand significant resources and lack

flexibility for the industry to adapt to dynamic environments. Balancing the need for quality assurance with industry autonomy through a **risk-based approach** can lead to a more efficient and proportionate process.

One commonly implemented certification method involves authorities observing training sessions delivered by candidate instructors, offering assurance of competency but requiring substantial resources and time, which may be more suitable for states with smaller aviation footprints. Another approach is for authorities to provide certification training and certify instructors once minimum requirements are met, but this also demands significant resources and may not be sustainable with increased demand. An outcome-focused approach, emphasising verification of technical competency while maintaining proportionality, proves more efficient, placing lower demands on authority resources and offering flexibility for industry adaptation. This approach aligns with the goal of ensuring high-quality aviation training while optimising resource utilisation.

5.

Cost Considerations in Aviation Training

The aviation training process inevitably carries financial implications, whether borne by the government, the authority, or the industry, depending on the national setup. However, implementing sustainable, proportionate, and **transparent training systems** can ultimately reduce overall costs.
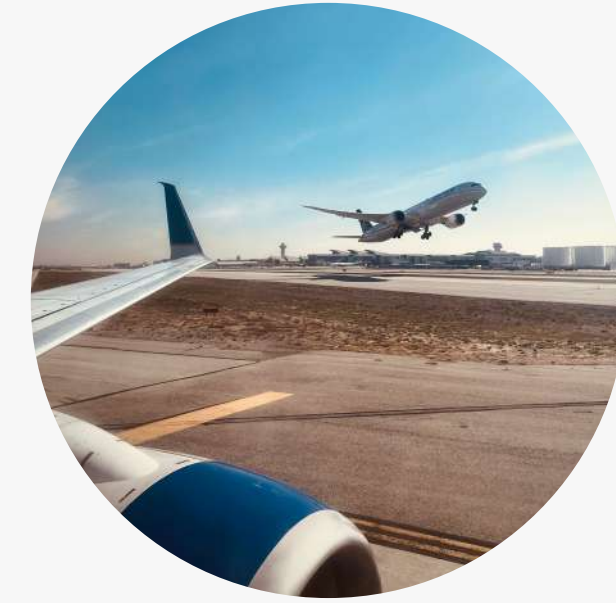
6.

Transparency in Training Processes

Is the training process transparent? **Do trainees understand what is expected of them?** A clear and transparent training process not only decreases overall costs but also facilitates sustainability and **risk mitigation**. When trainees have a clear understanding of expectations and processes, the need for additional clarification and engagement diminishes. Moreover, transparency reduces the likelihood of unsuccessful training attempts, which can otherwise increase workload burdens.

7.

Building Resilience

Anticipating change and **nurturing innovation** are essential for states to ensure the resilience of their aviation systems. **National regulatory frameworks** must remain adaptable to evolving threats. A rigid approach, which attempts to regulate every aspect, including those with minimal risk, may prove ineffective. By regulating only where necessary and adopting a **risk-based approach** to the dynamic environment, states can cultivate resilience within the system. Valuable lessons were gleaned from the Covid-19 pandemic, highlighting the necessity for the entire aviation community to swiftly adapt in order to facilitate recovery.

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8.

Promoting a Culture of Security

The notion of security culture was initially introduced by ICAO in the 8th Edition of the Doc 8973 Security Manual. The concept gained significant traction when ICAO designated 2021 as the Year of Security Culture, with the benefits of this initiative now beginning to materialise. **Amendment 18 to Annex 17** in 2022 introduces a new recommendation for states to actively promote, develop, and implement measures and mechanisms aimed at fostering a robust and effective security culture. This represents a crucial advancement, urging states to prioritise practical tools and actions to infuse security culture into the fabric of organisations and their personnel.

The certification process presents an opportunity to comprehensively integrate **security culture** within the industry. By incorporating security culture into the theoretical knowledge component of the certification process, instructors will foster a proficient understanding of the concept. This will empower them to proactively promote core values and instil appropriate **security behaviours** right from the outset.
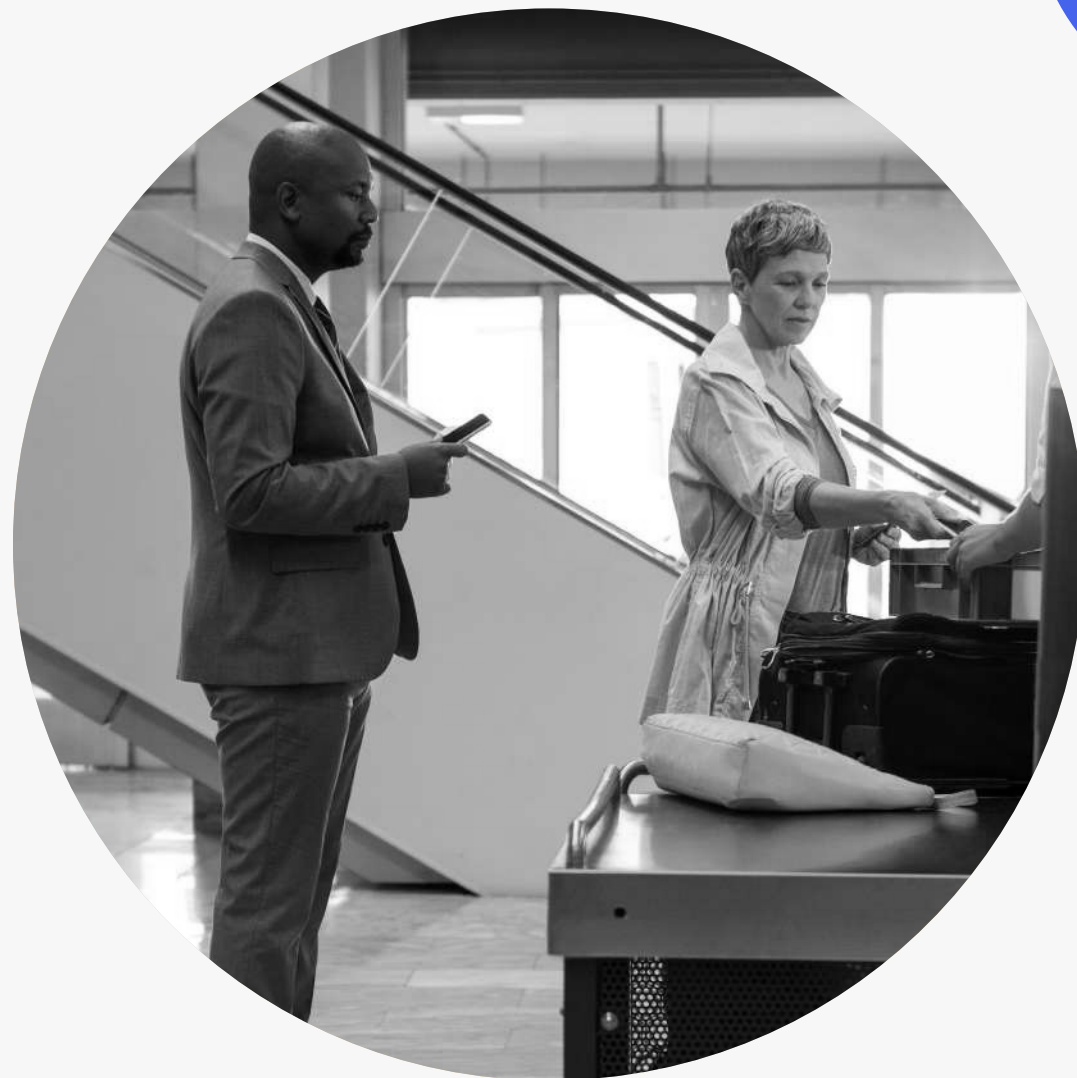
References:
ICAO Annex 17, Aviation Security, Safeguarding International Civil Aviation against Acts of Unlawful InterferenceTwelfth Edition, July 2022, para 3.4.7.

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9.

## Acknowledging Human Factors in Aviation Safety

The consideration of human factors in aviation safety is not a recent development. It traces back to the 1979 NASA research study of accidents, which examined how human capabilities and limitations impact performance. Initially focused on flight crew, this research was swiftly adapted for civil aviation and extended to cabin crew, forming the basis of Crew Resource Management (CRM) training. CRM training for aircrew is rigorously regulated, with significant hours dedicated to helping crew understand their limitations and their effects on performance. However, the **aviation security environment** has lagged behind in addressing human factors, despite security staff facing similar stress, fatigue, errors, and limitations in attention, perception, and information processing. Only recently has there been a concerted effort to increase understanding of **human factors for security** staff. The 41st ICAO Assembly served as a pivotal platform for discussing the importance of human factors, signalling a growing recognition of its significance within the aviation security domain.

Promoting awareness of human factors within the security environment marks an important stride forward, with instructors playing a pivotal role in this endeavour.

References:
NASA (1980), Resource Management on the Flight Deck, California at: https://ntrs.nasa.gov/api/citations/19800013796/ downloads/19800013796.pdf./
Kanki B.G., Anca J., Chidester T. R., (2019) Crew Resource Management,Third Edition, Elsevier.
ICAO Working Paper, HUMAN FACTORS IN THE AVIATION SECURITY DOMAIN, 41st Assembly Session, A41-WP\130.

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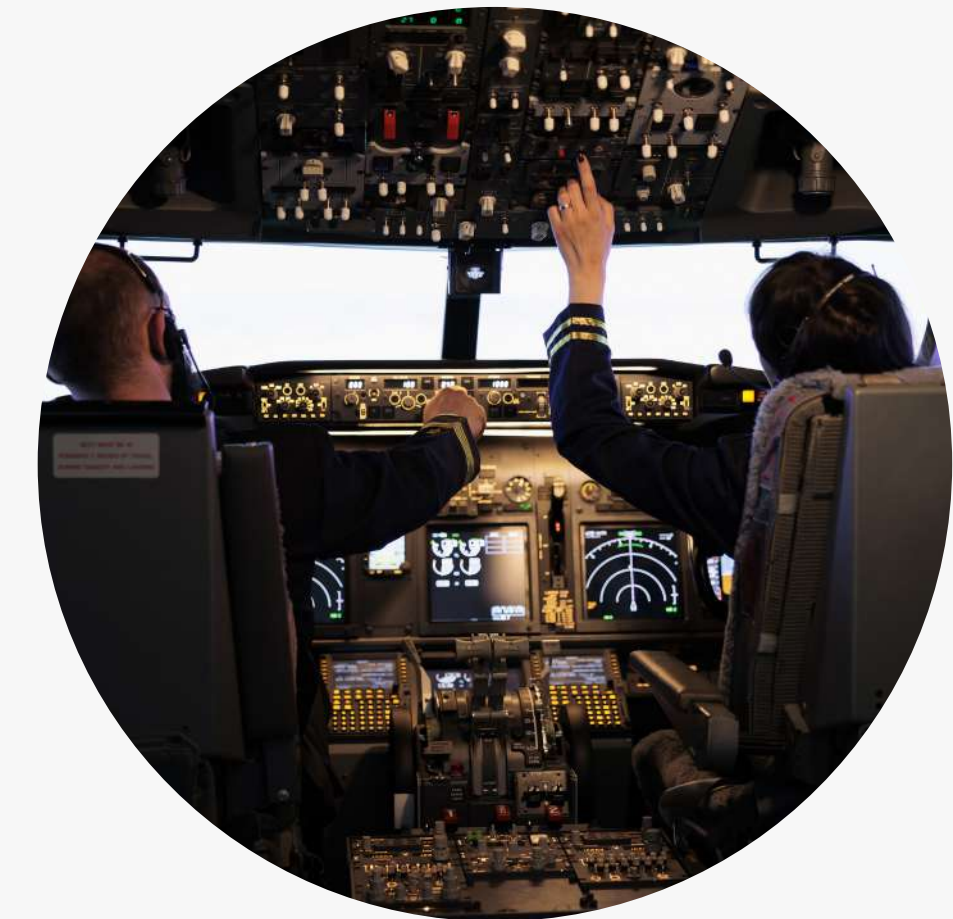
10.

Insider Threats

Two incidents, Dalloo Airlines Flight 159 and Metrojet Flight 9268, serve as stark examples of the consequences of internal threats. In the security realm, significant efforts are undertaken to mitigate the risk of insider threat, with preventing such activity ranking high on the security agenda. Group-level and **role-based risk assessments** constitute vital components of the organisation's framework for mitigating insider threats. Continuously enhancing instructors' knowledge and skills in addressing insider threats will serve as a significant countermeasure against evolving risks.

The certification process incorporates appropriate vetting of instructors to mitigate internal threats. Another crucial aspect is ensuring instructors possess sufficient competency not only to help staff recognize **insider activity** but also to identify **suspicious behaviour** among trainees. It is imperative to establish suitable reporting mechanisms in case any concerns arise during training sessions.

11.

Elevating
Training Standards

Butterfly Training pioneered a novel **digital approach** to aviation security training certification in 2005. Now, after extensive design, industry consultation, and user testing, our highly respected training materials and platform stand as a cornerstone of eLearning training delivery and our continued developmevnt is aimed at enhancing the professionalisation of training, with a specific focus on **modernising aviation security training**.

12.

Training skills

Authorities take different approaches worldwide to aviation security training skills. The local requirements are **set out on the NCASP of each country**. The Theoretical, Practical and on-the-job training will be detailed and each instructor will be required to cover the content listed for a certificate of completion to be issued.

All instructors are required to undertake rigorous training to be eligible for their role and be allowed to sit the instructor training and assessment. Instructors must undertake a national training qualification Level 3 Award in Education and Training or QQI Level 6 in Ireland. This suitably assures competency of training techniques.

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13.

Aviation Employees' Competency and Operational Experience

Operational experience and occupational competency are **fundamental pillars** in ensuring the effectiveness of security training within the aviation industry.

Employees tasked with security responsibilities must possess practical experience and a deep understanding of the operational environment. This includes familiarity with relevant procedures, protocols, and industry standards.

By incorporating **operational experience** into training programs, aviation organisations can enhance the quality and relevance of security training, equipping employees with the necessary **skills and knowledge** to effectively address security challenges.

Moreover, occupational competency ensures that employees understand the broader context of aviation security, enabling them to make informed decisions and respond effectively to evolving threats. Together, operational experience and occupational competency form the cornerstone of comprehensive security training programs, ultimately contributing to the s**afety and security** of the aviation sector.

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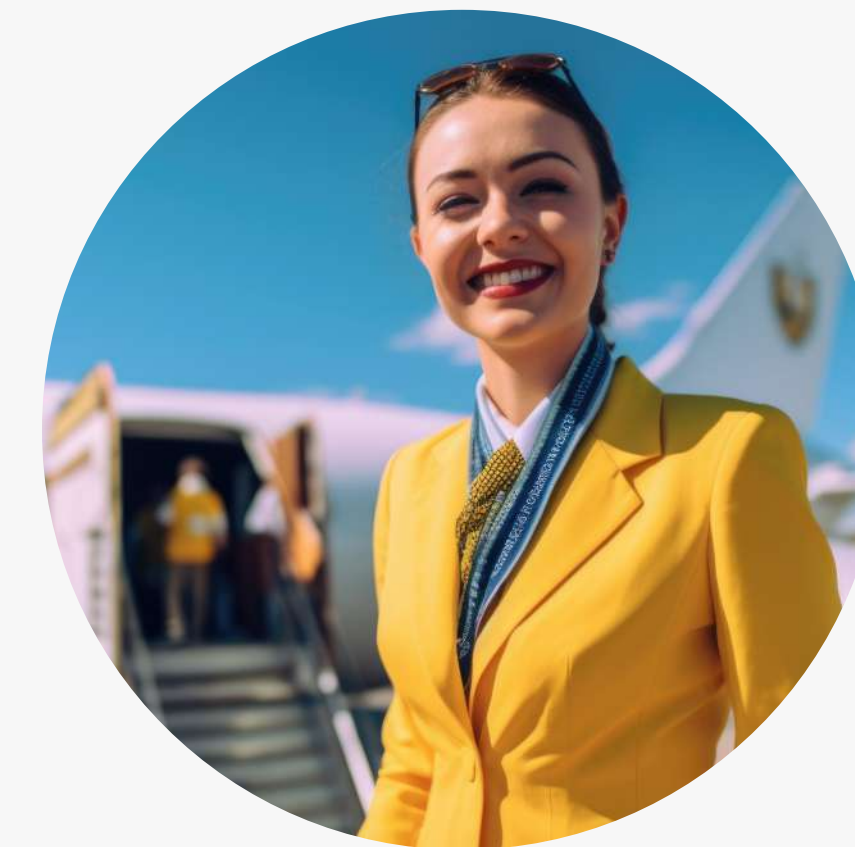
14.

Assessment
- 10 Good practices
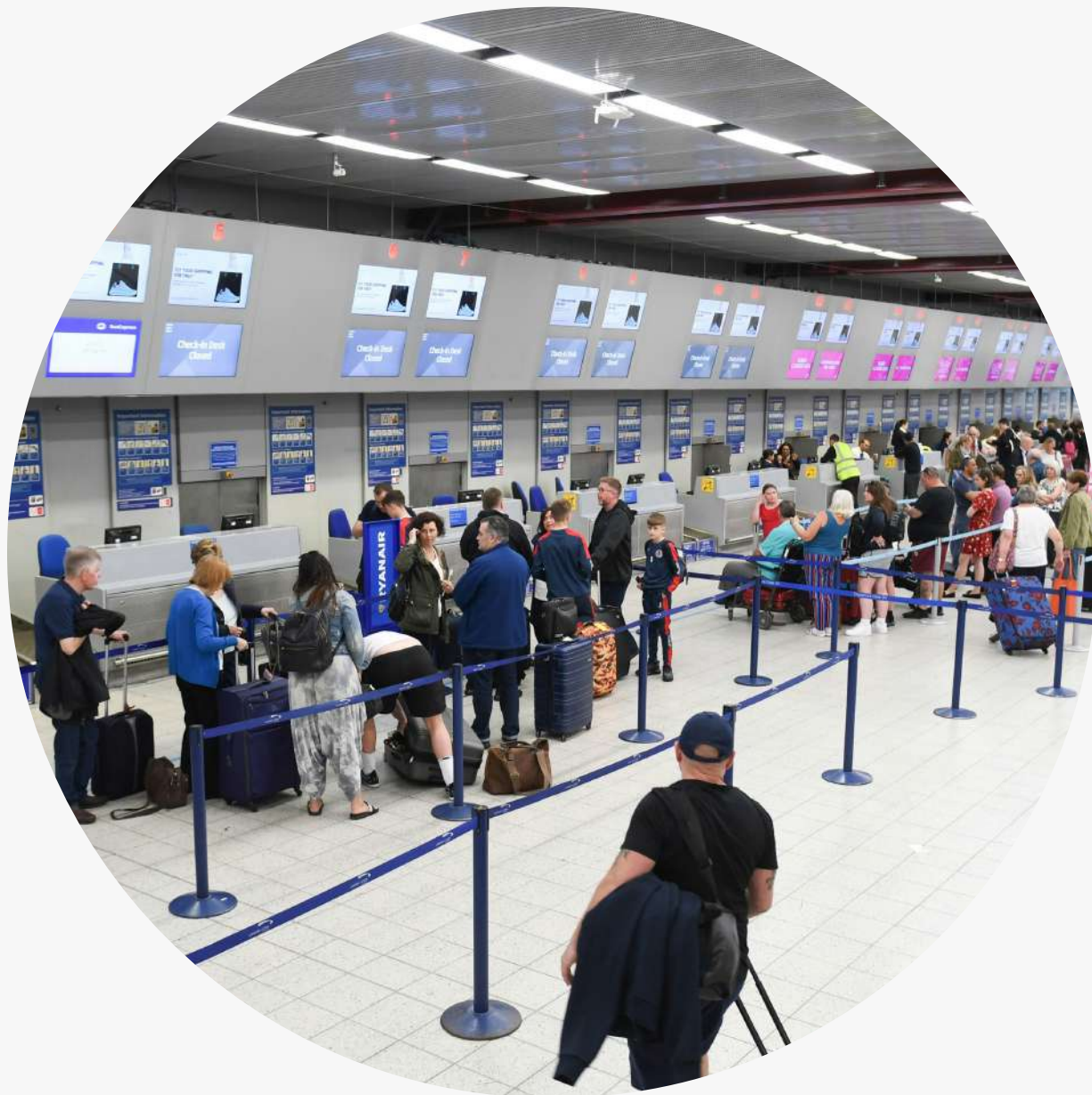
1. **Regular Evaluation:**
Implement a system of regular assessment to gauge aviation employees' proficiency and adherence to security protocols.

2. **Task-Specific Assessments:**
Tailor assessments to the specific roles and responsibilities of each employee within the aviation sector.

3. **Scenario-Based Testing:**
Use scenario-based testing to simulate real-world security incidents and evaluate employees' ability to respond effectively.

4. **Continuous Training:**
Offer ongoing training opportunities to ensure employees remain up-to-date with evolving security threats and protocols.

5. **Feedback Mechanisms:**
Establish feedback mechanisms to provide employees with constructive feedback on their performance during assessments.

6. **Standardised Procedures:**
Maintain standardised assessment procedures to ensure consistency and fairness across all evaluations.

7. **Utilise Technology:**
Incorporate technology, such as simulations and interactive training modules, to enhance the assessment process.

8. **Peer Review:**
Implement peer review processes to allow employees to assess and learn from each other's performance.

9. **Compliance Checks:**
Conduct regular compliance checks to ensure employees are adhering to established security regulations and protocols.

10. **Continuous Improvement:**
Continuously review and refine assessment practices based on feedback and emerging best practices in aviation security.

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15.

What Aviation Employees are expected to know ?
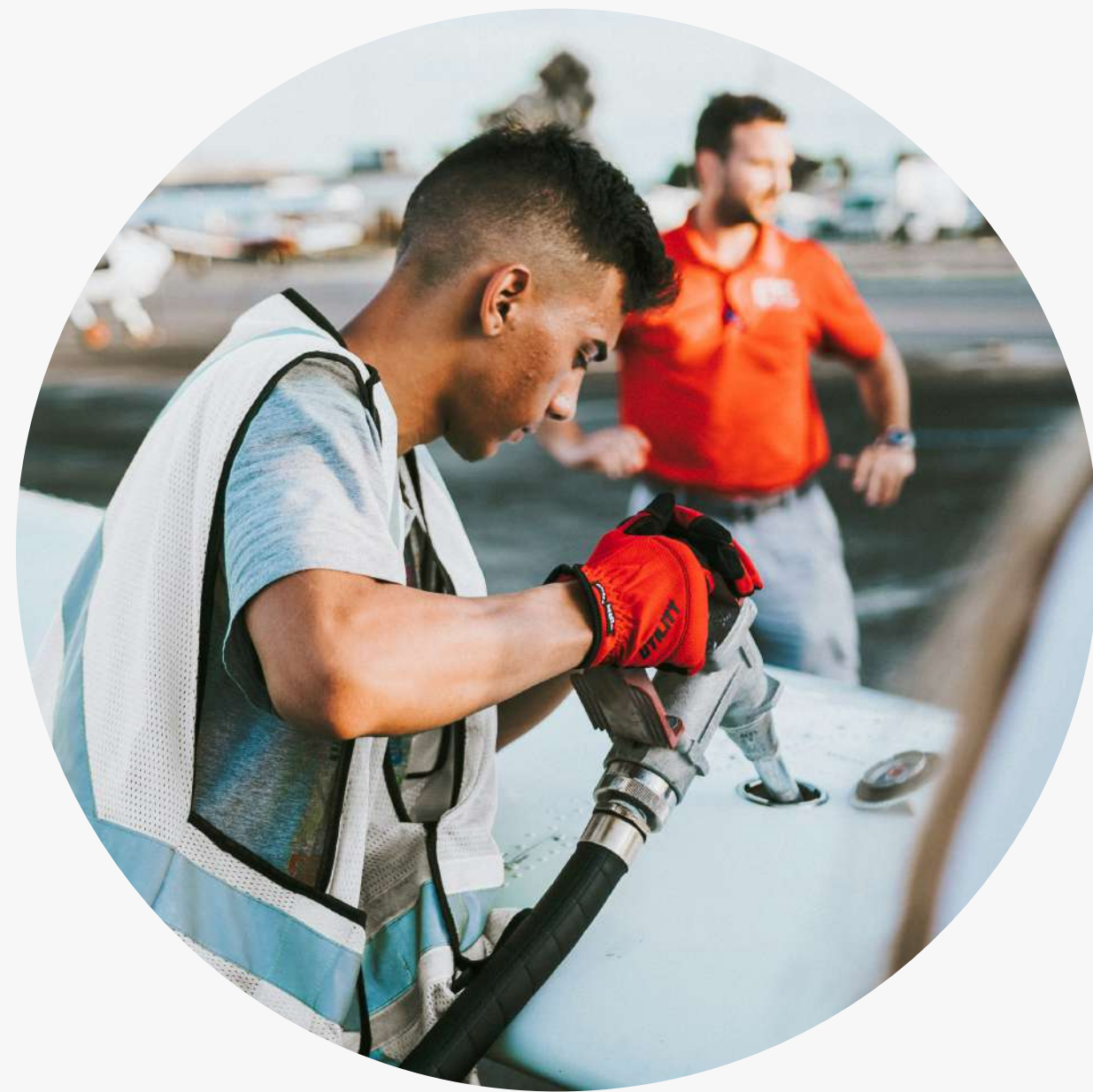
Establishing the knowledge threshold and learning outcomes for aviation employees presents a challenge. These employees wield significant influence within the industry and are expected to showcase not only technical proficiency but also a thorough understanding of ethical conduct, integrity, and exemplary role modelling. In addition to being well-versed in threat awareness, security protocols, and legal frameworks, employees are evaluated based on their comprehension of the critical role played by a **security-conscious culture**.

To ensure assessments remain relevant and forward-looking, additional learning outcomes include proficiency in **Security Management Systems (SeMS)** and familiarity with the Quality Assurance Framework. Following the successful completion of the core module, employees undergo specialised training modules tailored to their specific roles and responsibilities. These categories span various areas, such as Basic **Security Awareness Training (BSAT) - GSAT in the UK**, Ground Security, Aircrew, Aviation Security Manager, Cargo and Mail, In-Flight

Supplies (IFS), Airport Supplies, Airport Security, Hold Baggage Reconciliation, and Aircraft Security. Learning outcomes are aligned with the requirements outlined in the National Civil Aviation Security Programme (NCASP).

To maintain currency, employees are required to undergo a recertification process every three or five years, which includes submitting their **Continuous Professional Development (CPD)** log as an additional element.

16.

Continuous Professional Development (CPD)

Continuous Professional Development (CPD) is a vital component of maintaining and enhancing the skills and knowledge of aviation employees. It involves ongoing learning and training activities designed to keep employees abreast of industry advancements, **regulatory changes**, and **best practices**. CPD ensures that aviation professionals remain competent and proficient in their roles, enabling them to adapt to evolving technologies, security threats, and operational requirements. Through CPD initiatives, employees have the opportunity to further develop their expertise, broaden their understanding of relevant topics, and stay current with industry trends. Regular participation in CPD activities not only fosters individual growth but also contributes to the overall effectiveness and **safety of the aviation sector**.

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17.

Quality Assurance Framework (QAF)

The primary aim of a Quality Assurance Framework is to ensure the quality of training, with compliance oversight conducted by the AVSEC compliance team (12). It's crucial to recognize the distinction between achieving compliance and ensuring quality assurance. The implementation of the QAF, coupled with the transition to an **outcome-based certification process**, has facilitated a more targeted and enduring approach to certification attainment without sacrificing training quality.

Reference:
CAA CAP 2204 Understanding the CAA Quality Assurance Framework.

18.
Conclusion

Since the inception of the aviation security instructor certification requirement, Authorities have encountered various challenges. Establishing a sustainable, efficient, and transparent approach requires ongoing effort and adaptation. Continuous evaluation and a willingness to embrace change are essential to enhance the process for both Authorities and the industry.

Considerable attention must be paid not only to the procedural aspects but also to the knowledge component of certification. While adherence to the NCASP requirements is paramount, factors such as integrity, adherence to a code of conduct, the ability to foster a security-conscious culture, and understanding of human factors and insider threats in training contexts are equally important.

The evolved aviation security instructor training process by Butterfly Training UK adopts an outcome-focused approach. This enables greater efficiency, effectiveness, and transparency while allowing for a flexible response to varying levels of complexity within the industry. Transparency is ensured through the publication of the

syllabus, while quality is maintained through the implementation of the Quality Assurance Framework and Performance-Based Oversight, which enable the judicious allocation of resources.

For further information on how Butterfly Training UK can assist in developing and implementing a proportionate and sustainable instructor certification process, including the utilisation of the web-based electronic exam system, please visit : https://www.butterfly-training.co.uk/find-our-contact-details-here/ or email **contact@butterfly-training.co.uk**

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19.
Dive deeper
- Open questions

✈ Has your State developed and implemented a national training policy in alignment with Amendment 18?

✈ Have you established and implemented a recertification process for aviation employees?

✈ Have you ensured aviation employees engage in continuous development activities relevant to their fields?

✈ Is the certification system proportionate to the identified risks within the aviation sector?

✈ Do aviation employees possess a comprehensive understanding of security culture, its components, and strategies for enhancement?

✈ Are aviation employees adequately trained to effectively promote security culture?

✈ Would aviation security personnel benefit from a deeper understanding of human factors?

✈ Have you considered promoting the integration of Human Factors principles in aviation security training?

✈ Are aviation employees sufficiently equipped to recognize and report potential insider activity?

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20.

Useful resources
Aviation Security Training Courses
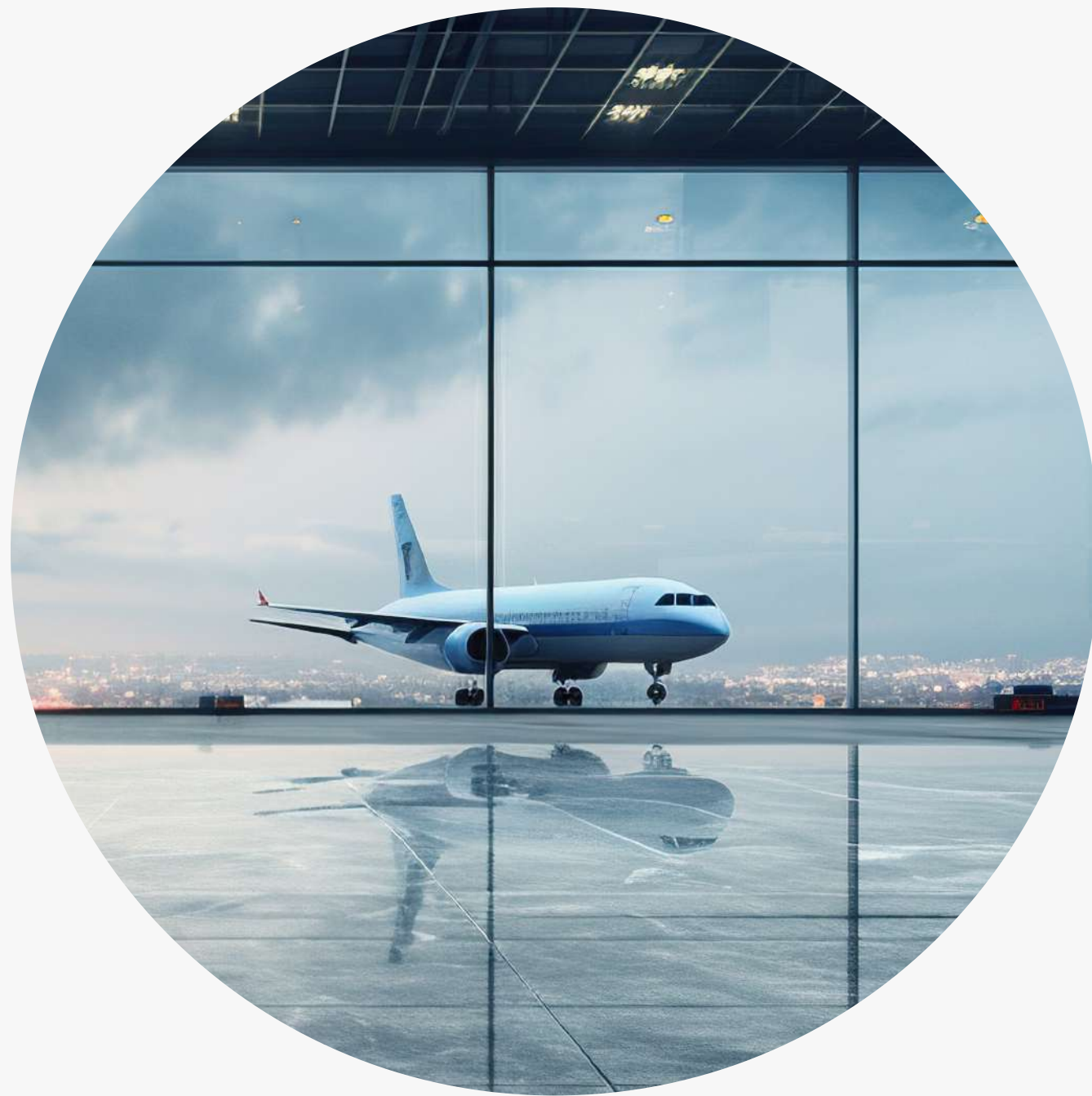
We have developed a range of aviation security training courses, based on the key competencies in the ICAO, ECAC, EU and local NCASP. Our courses go beyond compliance to develop mature, high-performing individuals. Our course catalogue include:

- [Basic Security Awareness (11.2.6.2)](#)
- [Aviation Cybersecurity (11.2.8)](#)
- [General Security Awareness Training (11.2.7)](#)
- [Hold Baggage Reconciliation (11.2.3.8)](#)
- [Aircraft Search (11.2.3.6)](#)
- [Aircraft Protection (11.2.3.7)](#)
- [Inflight Security (11.2.3.11)](#)

Advisory Services
Our team of instructors are well placed to advise across the entire spectrum of aviation security regulation. Our advice can cover:

- **Security Programme Assistance**
- **Regulatory Compliance**
- **Regulation Guidance and Best Practice**

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21.
About Butterfly Training UK

Butterfly Training UK is a leading independent provider of technical cooperation and training services in the aviation industry. Working closely with aviation regulators, governments, and industry organisations globally, we offer tailored support and guidance aligned with international and European standards.

Our mission is to assist Regulated Entities and other contracting organisations in not only achieving compliance with international aviation security standards but also in developing robust, risk-based frameworks that are both sustainable and proportionate. Drawing on the expertise of our team, which includes seasoned professionals from the aviation security sector, we provide comprehensive support to our fellow customers in all facets of aviation security regulation and oversight.

Learn more on **www.butterfly-training.co.uk**

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