

**LEGAL MEASURES FOR EFFICIENCY TO COUNTER INSIDER THREAT IN
AVIATION SECURITY IN NIGERIA**

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Abstract

The Nigerian Civil aviation industry faces significant security challenges, including the threats posed by insiders. These include airline employees, airport staff and contractors having authorized access to sensitive areas and system, making them potential security risk. In recent times, there are recorded instances of insider threat militating against efficient and virile aviation industry in Nigeria. One of the instances occurred in November 2022, where security screeners and immigration personnel at Murtala Mohammed International Airport Lagos were reported to have planted drugs in passengers' luggage to demand bribes. The same airport, has a high number of stowaway incidents, which aviation security experts attributed to frequent security breaches due to possible collaboration. The paper adopts a mixed method approach, combining surveys, interviews and case studies to gather data from aviation security experts, airline employees and airport staff. The paper examines the insider threat phenomenon in the Nigerian civil aviation industry and identifies key motivators for insider threats, which include financial gains, ideological extremism and revenge. It also highlights vulnerability in current security framework including inadequate background checks, non-implementation of strict access control and insufficient training. Consequently, the study recommends a multi-faced approach to mitigating insider threats, including conducting regular background checks, implementing strict access control, regular training and awareness programs, improved access control measures. The work specifically suggests the implementation of mitigation measures such as increased monitoring and proactive efforts on security awareness training to safeguard airport resources and the travelling public against acts of unlawful interference which will usher in a regime of responsive aviation governance for sustainable development in Nigeria.

Keywords: Insider threat, ideological extremism, aviation security, mitigation measures, stowaway incidents

INTRODUCTION

An airport is a complex entity with multiple occupants, a transient population and time-critical operations. Such an environment is vulnerable to a variety of different risks and threats.⁵⁸ Airports are critical infrastructures that handle large volumes of passengers and sensitive information daily. While security measures primarily focus on external threats, it is crucial for airports to recognize the potential risks posed by insider threats. In the Nigerian aviation industry insider threat poses a significant concern and it may manifest in form of malicious threat that comes from people within the aviation industry, such as employees, former employees, or contractors.

In the Nigerian aviation industry, there is a high risk of insider threats due to several labor infractions in the industry that may lead to security breaches. These individuals may use their access to compromise security intentionally or unintentionally⁵⁹ by illicit taking advantage of their positions to smuggle restricted items, substances, or people into secure areas, share sensitive data, including details by virtue of their privileged access or knowledge.⁶⁰ The situation is difficult to manage because of the inter-dependencies and web of information that moves around an airport, more importantly that the motives of such saboteur can be varied and ranges from gaining financial advantage through low-level or organized crime activities. Sometimes, it can be issue-driven, terrorism focused, or an individual may become an insider simply because he is disgruntled or unhappy with the way he has been treated by the industry. However, the motivation may also be due to a combination of the above factors.⁶¹ In recent time, there are recorded instances of insider threat militating against efficient and virile aviation industry. One of the instances occurred in November 2022, where security screeners and immigration personnel at Murtala Mohammed International Airport Lagos were reported to have planted drugs in passengers' luggage to demand bribes.⁶² The same airport, has a high number of stowaway incidents, which aviation security

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⁵⁸ David Bamaung, Security: The hidden 'insider' threat of the aviation sector, International Airport Review, <<https://www.internationalairportreview.com/article/73985/security-the-hidden-insider-threat-of-the-aviation-sector/>> accessed on 6 March, 2025.

⁵⁹ International Civil Aviation Organization, *Second African-Indian Ocean (AFI) Aviation Security and Facilitation Symposium*, 2017 <<https://www.icao.int>> accessed on 6 March, 2025.

⁶⁰ Ibid

⁶¹ Ibid

⁶² THISDAYLIVE *Tackling Security Breaches, Insider Threats at Lagos Airport* <<https://www.thisdaylive.com>> accessed on March 10, 2025

experts attributed to frequent security breaches due to possible collaboration.⁶³ In order to mitigate incidences of insider threats, this work broadly aims at having a critical examination of the security breaches attributable to insider threats within the context of in the civil aviation industry, in Nigeria .This is done by embarking on dispassionate review of the myriads of security breaches caused by insider threats and the available legal and institutional machinery for curbing them in Nigeria. The paper specifically examines the nature of security breaches caused by insider threats, the impacts of the relevant authority at obviating or reducing insider threats to the barest minimum within the prism of the Nigerian civil aviation industry. The work suggests, among others, the implementation of mitigation measures such as increased monitoring and proactive efforts on security awareness training to safeguard airport resources and the travelling public against acts of unlawful interference which will usher in a regime of responsive aviation governance for sustainable development in Nigeria.

THE NATURE OF INSIDER THREATS IN AVIATION SECURITY

An insider in this context refers to one or more individuals with access or insider knowledge that allows them to exploit vulnerabilities of the transportation domain.⁶⁴ He has the wherewithal of exploiting or has the intention of manipulating his role or knowledge for unauthorized purposes. Such an insider may be full or part-time permanent employees, individuals on attachment or secondment, contractors, consultants, agency staff or temporary staff.⁶⁵ Essentially in an airport environment, an insider could be anyone who works at the airport, like baggage handlers, security personnel, or airline staff who has legitimate access to the organization's information or assets and exploits it for unauthorized purposes like intentional sabotage and theft, inadvertent negligence that compromises airport security, intentional damaging of assets or infrastructure, facilitation of unauthorized third-party access, unauthorized disclosure of data or information, financial corruption, smuggling drugs or other commodities to, or from a country through aircraft or cargo,

⁶³ Of Insider Threat and FAAN's Security Apparatus < <https://www.thisdaylive.com> >accessed on March 10, 2025

⁶⁴ United States Department of Homeland Security, *Transportation Security Administration, Insider Threat Awareness, International Civil Aviation Organization Global Aviation Security Symposium 2018*, 3 available at < <https://www.int> > accessed on April 17, 2025.

⁶⁵ International Air Transport Association, *Insider Threat Mitigation Guide*. available at <<https://www.cisa.gov>> accessed on April 17, 2025.

etc.⁶⁶ as well as disrupting flights, all of which may undermine the operational vision, mission and standard of the industry.⁶⁷

Insider threat may be classified into *malicious insider threat* and *Non-malicious insider threat*, while the former denotes illicit act by an insider done intentionally or willfully against an airport or an airline without any legal justification, the latter is borne out of inadvertence, carelessness or levity. The two are linearly related as they constitute common tools capable of causing harm to any segment of aviation industry.⁶⁸ Never the less, a further scholarly explanation on malicious insider threat is that the operation of an airport requires resources of thousands of employees, whereby some of them have access to sensitive security areas or work around and in the aircraft. Perpetrators of unlawful acts often look for the weakest link in the security chain of defence of which airport employees could be one, as they have detailed knowledge of the operational procedures and weakness of the system which could be easily exploited by any disgruntled elements to perpetrate the act of unlawful interference.⁶⁹ In consequence, all airport employees with access to sensitive security areas or knowledge about relevant security processes have to take reasonable care to eschew becoming an insider threat.

Different forms of malicious insider involvement are conceivable, an employee who is being goaded by somebody outside the airport system to disclose information that can jeopardize aviation safety is obviously being malicious. Also, an airport worker who accept bribes in order to pass a bag containing restricted items through security check with or without knowing that they are facilitating the placing of a bomb onboard the aircraft is being malicious. Therefore, typical activities of a malicious insider include spying, release of sensitive information, sabotage,

⁶⁶ Ibid

⁶⁷ David Bamaung, Security: *The hidden 'insider' threat of the aviation sector*, International Airport Review, <<https://www.internationalairportreview.com/article/73985/security-the-hidden-insider-threat-of-the-aviation-sector/>> accessed on March 6, 2025.

⁶⁸ Melina Zeballos, Carla Sophie Fumagalli, Signe Maria Ghelfi, Adrian Schwaninger, *Why and how Unpredictability is Implemented in Aviation Security – A first Qualitative*, Science Direct Books and Journals study <<https://www.sciencedirect.com/science/article/pii/S2405844023010290#bib34>> accessed on March 6, 2025.

⁶⁹ International Civil Aviation Organization- *Second African-Indian Ocean(AFI) Aviation Security and Facilitation Symposium*, Gaborone , Botswana, 2017 <<https://www.icao.int>> accessed on March 11, 2025

corruption, impersonation, theft, running malicious software smuggling, espionage, bypassing security controls and terrorist attacks.⁷⁰

The non-malicious insider threat otherwise known as unintentional insider threat is not associated with any malicious intent associated but susceptible to causing harm or substantially increased the probability of future serious harm to the confidentiality, integrity, or availability of the airport or airline's information or security. Potential incidents may include accidental disclosures of sensitive information or data. For example, an aviation worker who posts about his or her job responsibilities and details on social media may not know that he or she is disclosing some vital information to some criminal minded people.⁷¹ Be that as it may, a person committing an act of non-malicious insider is not free from culpability.

LEGAL AND THEORETICAL FRAMEWORKS FOR INSIDER THREAT IN CIVIL AVIATION

Due to the high sensitivity of aviation security particularly the issue of insider threat and the peculiar characteristics of the techniques it uses, it should be ruled by legal instruments which shall provide a structured and coherent set of rules and regulations that govern it. The legal instrument will provide among others, clear definitions of what constitute an insider threat, as well as guidelines for identifying, reporting and responding to such threat. Insider threat is a global phenomenon that the International Civil Aviation Organization (ICAO) takes with utmost commitment. ICAO Annexes sets internal standards and recommended practices for civil aviation, covering various aspects from airworthiness to security and environmental protection.⁷² ICAO Annex 17 provides standards and recommended practices for aviation security, including measures to prevent insider threats. Besides ICAO Aviation Security Manual offers guidance on implementing effective aviation security measures, including those related to insider threats.⁷³

Domestically, Nigerian Civil Aviation Act, 2022 establishes the Nigerian Civil Aviation Authority (NCAA) and the Authority made Civil Aviation Security Regulations (NCAR), 2015. It focuses

⁷⁰ *ibid*

⁷¹ *ibid*

⁷² Annexes to the Convention to International Civil Aviation(ICAO) available at <<https://www.bazl.admin.ch> > accessed on March 12, 2025.

⁷³ ICAO Annexes and Doc Series available at <<https://skybrary.aero> > accessed on March 12, 2025.

on aviation security, addresses the insider threat by requiring background checks, security awareness training, and measures to prevent and mitigate risks from individuals with authorized access exploiting their knowledge and access for malicious purposes.⁷⁴

Insider threat is predicated on some theories which are necessary for understanding the motivations and behaviors of insiders who pose a threat.⁷⁵ The understanding informs strategies for prevention, detection, and response. It may also help in identifying risk factors as well as developing effective countermeasures.⁷⁶ One of the theories is criminology theory of routine activity which posits that crime occurs when three elements converge: a motivated offender, a suitable target, and the absence of a capable guardian.⁷⁷ It emphasizes that insiders are suitable targets that may exploit their authorized access to security areas in the aviation industry to commit crimes, such as sabotage or theft⁷⁸ if there is a lack of effective security measures, controls, or oversight that could prevent or detect the insider threat.

Besides, psychological theories of motivation and stress point to a potential soft spot that may engender insider threat. Insiders may be motivated by various factors, including financial gain, revenge or ideological extremism. In the perspective of Maslow, insiders may be motivated by a hierarchy of needs starting with basic needs and progressing to safety, social, esteem, and self-actualization needs.⁷⁹ Looking more inwardly, insiders may experience stress and pressure that can contribute to insider threat behavior.

INSIDER AND CAUSES OF THREAT IN THE NIGERIAN CIVIL AVIATION

Historically, civil aviation has been in the focus of terrorism for more than 50 years.⁸⁰ In response to terrorist attacks, aviation security measures have been continuously refined and improved.⁸¹

⁷⁴ Part 17 of Nigerian Civil Aviation Security Regulations (NCAR)

⁷⁵ JRC Nurse- Understanding Insider Threat: *A Framework for Characterizing Attacks* <<https://citeseerx.ist.psu.edu>> accessed on March 12, 2025.

⁷⁶ I.J. Martinez-Moyano - *A Behavioral Theory of Insider Threat Risks: A System Dynamics Approach* available at <<https://www.dl.acm.org>> accessed on March 12, 2025.

⁷⁷ Routine Activity Theory-An Overview available at <<https://www.sciencedirect.com>> accessed on March 21, 2025.

⁷⁸ Routine Activities Theory: Definitions & Examples <<https://simplepsychology.org>> accessed on March 12, 2025

⁷⁹ Theories of Motivation: *A comprehensive analysis of human behavior drivers* <<https://www.sciencedirect.com>> accessed on March 12, 2025.

⁸⁰ Randell D Law, *Terrorism: A History, RD Law - 3rd Edition - Polity* available at <<https://www.politybooks.com>> accessed on April 17, 2025.

⁸¹ Derrick Tin, Attila J Hertelendy, Alexander Hart, Gregory R Ciottone. *50 Years of Mass-Fatality Terrorist Attacks: A Retrospective Study of Demographics, Modalities, and Injury Patterns to Better Inform Future Counter-Terrorism Medicine*. Pre-hospital and Disaster Medicine 36 (5),531-535, 2021 Cambridge University Press.

This was mainly based on minimizing the risk of known threats.⁸² Whenever a security-related incident occurred, weaknesses of the security system were identified, resulting in the adaptation of existing measures or the addition of new ones to improve aviation security, in fact, most national and international standards and regulations have been reactive responses to past incidents.⁸³

One of the challenges bedeviling aviation security in the Nigeria aviation sector is insider threat. Insider Threat may take different form which include theft, sharing of sensitive procedures, attacks on information systems, smuggling goods or people into security restricted areas. The players in the Nigerian aviation industry have raised the alarm of insider threat as the sector unravels the disappearance of the airfield lightnings of Runway and many other things at the Nigerian Airport.⁸⁴

Nigeria Civil Aviation Authority (NCAA) is the sole civil aviation regulatory body in Nigeria⁸⁵ and its mission is to provide aviation safety and economic regulatory services in the most efficient, most effective, and quality technologically- driven manner to the satisfaction and benefit of all stakeholders, consistent with highest international standards and sustainable development of the industry and national economy.⁸⁶ However, recent occurrences points to the fact that the NCAA has not been discharging its duty as expected to justify living up to its mission. It was reported and the outcome of the personal interview conducted at Murtala Mohammed International Airport (MMIA), Lagos confirmed that in January 2020, a 25-year-old man was caught at the runway of the airport attempting to hide in aircraft wheel-well of Air Peace flight.⁸⁷ Similarly, sometimes in May, 2023, a deceased stowaway was discovered in the wheel-well of a KLM Royal Dutch Airlines

⁸² Ruwantissa I.R Abeyrante. Terror in the Skies: ‘Approaches to controlling Unlawful Interference with Civil Aviation.’ International Journal of Politics, Culture and Society; (1997) (11) 245 - 282. available at > accessed on April 17, 2025.

⁸³ Melina Zeballos, Carla Sophie Fumagalli, Signe Maria Ghelfi, Adrian Schwaninger, *Why and How Unpredictability is Implemented in Aviation Security* – A first Qualitative, Science Direct Books and Journals study available at < <https://www.sciencedirect.com/science/article/pii/S2405844023010290#bib34> > accessed on March 7, 2025.

⁸⁴ THISDAYLIVE. *Tackling Security Breaches, Insider Threats at Lagos Airport* <<https://www.thisdaylive.com>> accessed on March 10, 2025.

⁸⁵ See Section 8 (3) of Civil Aviation Act 2022.

⁸⁶ Nigeria Civil Aviation Authority, Who We Are, <https://ncaa.gov.ng/about/#:~:text=To%20provide%20aviation%20safety%20and%20economic%20regulation%20in%20the%20most,the%20industry%20and%20national%20economy> accessed on 7 March, 2025.

⁸⁷ Chinedu Eze, Nigeria: Experts Warn Against Frequent Security Breaches At Airports, THIS DAY, <https://allafrica.com/stories/202001030008.html> accessed on March 7, 2025.

Boeing 777. The aircraft originated from Lagos, Nigeria and it was unknown how and when the man was able to climb into the aircraft.⁸⁸ This could not have been possible without the involvement of an insider as there are many security checks required before a person can board the Aircraft. The implication of this is that, if the stowaway had another intention to either harm the passengers or aircraft, he could have been successful.

Also, in 2022, it was reported that an Arik Air aircraft parked at the ramp of the domestic terminal of Lagos airport was accessed and critical equipment removed. It was a leased aircraft, Boeing 737-700 parked at the ramp of the Murtala Mohammed Domestic Airport (MMA2) and tampered with while critical equipment removed by persons initially suspected to have breached security and accessed the air-side of the airport. The Flight Management System (FMS), Pilot Static Cover, and other sensitive aircraft parts were all removed from the aircraft.⁸⁹ More pathetic was the incidence of a Nigerian lady named Zainab Aliyu who was arrested after a banned drug, tramadol, was found in her bag on arrival in Saudi Arabia. However, she insisted it was planted in her luggage by unknown persons. She travelled from Mallam Aminu Kano International Airport, Kano and was accused of entering Saudi Arabia with an illegal dosage of Tramadol. It was discovered she was a victim of a cartel at the airport in Kano that specializes in keeping hard drugs in travelers' bags. Zainab was subsequently released by the Saudi Arabian anti-drug trafficking agency after four months in detention.⁹⁰ The Cartels could not have had access to her luggage without the help of an employee/staff who work at the airport. What is usually obtainable is passengers submitting their luggage for security screening, however, Zainab trust was breached by the employees of the Airport and she was caught by the unfortunate event.

⁸⁸ Addressing Insecurity at Nigerian Airports, THIS DAY, <https://www.thisdaylive.com/index.php/2023/04/21/addressing-insecurity-at-nigerian-airports> accessed on August 23, 2023.

⁸⁹ THISDAYLIVE *Tackling Security Breaches, Insider Threats at Lagos Airport*. Available at <<https://www.thisdaylive.com>> accessed on April 17, 2025.

⁹⁰ Sahara Reporters, Nigerian Woman, Zainab Jailed In Saudi Arabia Over Drugs Joins Nigeria's Enforcement Agency, NDLEA, <https://saharareporters.com/2021/11/20/nigerian-woman-zainab-jailed-saudi-arabia-over-drugs-joins-nigeria%E2%80%99s-enforcement-agency#:~:text=Zainab%2C%20then%20a%20student%20of,her%20luggage%20by%20unknown%20persons> accessed on accessed on 8 March, 2025.

The question that comes to mind is if the security measures were adequate, how did these people have access to security and sensitive areas within the airport? The unanimous answer from the people interviewed is that they were caused by insider threats from the airport staff due to:

- a) Lack of thorough background checks on the staff before employment,
- b) Improper disengagement of old staff who are still in possession of their ID cards through which they gain access to the security controlled areas,
- c) Collusion with terrorists to carry out maximum damage at airport facilities
- d) Porous access into the security controlled-areas,
- e) Lack of protection of the airports with modern security systems
- f) Lack of proficient technologies to detect all levels of threat from drugs and concealed explosives.⁹¹

Comparatively, there are many instances of insider threats in developed countries making the act not peculiar to Nigeria only. In 2014, an airport employee was arrested and charged with trafficking firearms and entering secure areas of a United States airport in violation of security requirements. The complaint alleges that the employee repeatedly evaded airport security with bags of firearms, some of which were loaded. The employee then passed the guns off to an accomplice who transported them as carry-on luggage to New York, where they were illegally sold.⁹² However, there are many avoidable instances of insider threats in Nigeria, which could have been avoided by putting certain measures in place to mitigate the act in the Nigeria Civil Aviation Sector.

In the civil aviation sector, insider comprises of airport support staff, airport management and administration staff, contract security staff, airport vendors, flight crews, airline ticketing agents, aircraft mechanics, baggage handlers, contract aircraft custodial crews, catering staff, law enforcement, customs agents, security screening personnel, air traffic controllers, fixed base operators and former employees.⁹³ Insider threats can arise from various sources within the airport

⁹¹ THISDAYLIVE. *Experts warn against frequent security breaches at Airports available at* <<https://www.thisdaylive.com> > accessed on March 11, 2025.

⁹² National Insider Threat special interest Group NITSIG: *What We Know, Our Findings, and What We Recommend 2017 available at* <<https://www.nationalinsiderthreatsig.org>> accessed on 17 April 2025.

⁹³ United States Department of Homeland Security, TRANSPORTATION SECURITY ADMINISTRATION, *Insider Threat Awareness, International Civil Aviation Organization ICAO Global Aviation Security Symposium 2018 available at* <<https://www.icao.int>> accessed 17 April 2025.

ecosystem, including employees, contractors, vendors and trusted partners. These individuals possess a level of access and familiarity with airport systems, making it easier for them to exploit vulnerabilities or bypass security measures due to malicious intent, negligence or carelessness, social engineering, complacency

MITIGATING INSIDER THREATS

Insider threat cannot be completely obviated but there are proactive measures which can be put in place to mitigate it to the barest minimum. Some of the measures are:

- 1) **Pre - Employment Vetting-** A comprehensive background check of all personnel selected for hiring should be carried out by the relevant state security agencies based on risk assessment. The policy should focus on preventing the recruitment of a person who is not able to provide a background check which is compliant with the operator's requirements. Criminal records, detailed review of employment history, travel history, correct identification etc. can provide a reasonable picture of a potential employee. Operators should have a process to ensure that all new entrant staff complete the requirements of the vetting process prior to employment. These measures may be varied depending on the level of risk that posed by the person's role, the access to the operator's sensitive areas and activities, and the national regulations in place for background checks and vetting.⁹⁴ A comprehensive screening before employment process is essential for mitigating insider threats. This should include thorough background checks, reference verification and vetting potential employees, contractors and vendors. By scrutinizing applicants' backgrounds and conducting appropriate screenings, airports can identify any red flags, criminal histories, or potential indicators of risky behavior. The following are the ways to mitigate insider threat in Nigeria.⁹⁵

⁹⁴ Hiba Boukredine, 'Efforts of the International Air Transport Association in Addressing Cyber Threats' Journal of Law and Sustainable Development 13 (3):e04347 2025 available at <<https://www.researchgate.net>> accessed on 17 April 17, 2025.

⁹⁵ Joe Petrie, *Aviation Security*, 'How to minimize Airport Insider Threat'. available at <<https://www.aviationpros.com/aviation-security/article/53061660/how-to-mitigate-airport-insider-threats>> accessed on 8 March, 2025.

- 2) **Employee Education and Awareness-** Implementing a robust training program focused on insider threat awareness and prevention is vital. Employees should be educated on the types of insider threats, the warning signs and the potential consequences. Regular training sessions can help foster a security-conscious culture, encouraging employees to report suspicious activities and emphasize the importance of following security protocols.⁹⁶
- 3) **Access Control and Privilege Management;** Strategic access control measures are crucial in limiting unauthorized access and reducing the potential for insider threats. Implementing the principle of least privilege ensures that employees and contractors only have access to the resources necessary for their specific roles. Regular audits of access privileges, strong authentication methods and strict password policies should be enforced to maintain a robust access control framework.⁹⁷
- 4) **Monitoring and Detection Systems;** Deploying advanced monitoring and detection systems can aid in identifying anomalous behaviors or potential insider threats. Security systems should include intrusion detection systems (IDS), security information and event management (SIEM) solutions, and video surveillance systems. These technologies can help detect unusual activities, unauthorized access attempts, or policy violations, triggering alerts for immediate investigation and response.
- 5) **Incident Response and Reporting Mechanisms;** Establishing an incident response plan specific to insider threats is essential to mitigate potential damage. The plan should outline the steps to be taken in the event of an incident, including reporting procedures, evidence collection and containment measures. Employees should be encouraged to report any suspicious activity or concerns through confidential reporting channels to ensure timely intervention and investigation.
- 6) **Regular Audits and Compliance;** Conducting regular security audits and compliance assessments helps identify any weaknesses or vulnerabilities in existing systems and processes. Independent assessments by third-party security professionals can provide unbiased evaluations of an airport's security posture, highlighting potential areas of improvement and ensuring compliance with industry standards and regulations.

⁹⁶ Ibid

⁹⁷ Ibid

- 7) **Insider Threat Monitoring Programs;** Implementing insider threat monitoring programs can assist in identifying and mitigating potential risks. These programs involve continuous monitoring of employee behavior, network activity.
- 8) **Cultural Shift and Reporting Channels;** Fostering a culture of trust and openness is crucial to encourage employees to report any suspicious activities or concerns without fear of reprisal. Establishing confidential reporting channels, such as hot-lines or anonymous reporting mechanisms, empowers employees to share information about potential insider threats while protecting their identities. Clear policies should be in place to address and protect whistle-blowers and system access. Monitoring tools can flag any unusual patterns or behaviors that may indicate insider threats, allowing for prompt investigation and appropriate actions to be taken.⁹⁸
- 9) Creating an environment where the pursuit of improvement is normal and natural, enhancing resilience and capacity to deal with every kind of insider threat.⁹⁹
- 10) Identifying key infrastructure and assessing potential vulnerabilities which could be exploited by an insider.¹⁰⁰
- 11) Creating an effective organizational security culture to mitigate the opportunities for insider attack, always fostered from the top (of the organization) to all levels, with a permanent support structure and engagement by senior management.¹⁰¹

AVIATION CYBER SECURITY AND INSIDER THREAT IN NIGERIA

Aviation cyber security can be defined as the prevention of and reaction to deliberate malicious acts undertaken through cyber means to either compromise an aircraft's systems or any air transport system directly or indirectly where those systems play a key role in the wider aviation

⁹⁸ Joe Petrie, *Aviation Security, How to minimize Airport Insider Threat*. Available at <<https://www.aviationpros.com/aviation-security/article/53061660/how-to-mitigate-airport-insider-threats> > accessed on 8 March 2025.

⁹⁹ David Bamaung, *Security: The Hidden 'Insider' Threat of the Aviation Sector*, International Airport Review. Available at <<https://www.internationalairportreview.com/article/73985/security-the-hidden-insider-threat-of-the-aviation-sector/> > accessed on 9 March, 2025.

¹⁰⁰ Ibid

¹⁰¹ Ibid

system. While Aviation Cyber Jacking is hacking into an airplane computer system or taking control of an aircraft or an air transport system or infrastructure without authorization.¹⁰²

According to former International Air Transport Association (IATA) Director General Tony Tyler at an event in 2014, Aviation relies on computer systems extensively in ground and flight operations and air traffic management. It is therefore necessary for the Aviation industry globally and in Nigeria to put in place a cyber defence mechanism that will protect aviation infrastructure and people. The significant role the aviation industry plays in both the global and national economies cannot be underestimated, hence, the need to pay serious attention to cyber security threats.¹⁰³

The driving force for the aviation industry embracing automation, digital and satellite technologies is the massive efficiencies, effectiveness and scalability benefits it presents. In this new era these Aviation Technology Drivers include: Smart systems, Fueling Systems, Security surveillance and Screening Systems, Weather Observation Systems, Flight History Servers, Fleet and Route Planning Systems, Passenger Reservation Systems, Frequent Flyer or Loyalty Programs , Ticket Booking Portals, Cargo Handling and Shipping, Access, Departures and Passport Control Systems and Cabin Crew devices among others.¹⁰⁴ There has been several aviation cyber attacks across the world – airlines, airports, air traffic management systems, etc, for example, an attack on the internet in 2006 that forced the United States Federal Aviation Administration to shut down some of its air traffic control systems in Alaska.¹⁰⁵

As the global Aviation Community continue their efforts towards cyber security it is important that the Nigeria Civil Aviation sector employs trusted cyber security personnel to curb and prevent any form of attack on customer data and ensure smooth operation of the civil aviation industry.

¹⁰² Cyber Security in the Nigerian Aviation Industry: ‘*Challenges, Risks and Mitigation Strategies*, Aviation and Allied Business Journal’. available at <<https://aviationbusinessjournal.aero/magazine/cybersecurity-in-the-nigerian-aviation-industry-challenges-risks-and-mitigation-strategies/>> accessed on 9 March, 2025.

¹⁰³ Ibid

¹⁰⁴ Ibid

¹⁰⁵ Ibid

The high risk of insider threats challenge due to the several labor infractions in the civil aviation industry in Nigeria may lead to employees or other trusted individuals with access to critical systems inadvertently or maliciously jeopardizing the smooth running of the cyber space.

Partners, vendors, and contractors who have access to aviation systems can become an entry point for cyber attackers due to lack of appropriate background checks. This means there needs to be proper awareness and cyber security training among aviation staffs to avoid security breaches.¹⁰⁶

IMPLICATION OF INSIDER THREAT

Insider threat is dangerous and the danger presented by an aviation insider is that they already understand the external security of airports and aviation assets and will be able to exploit their knowledge of these security measures. Many aviation insiders potentially also have access to the most critical and sensitive parts of an airport. They are already in a position of trust and might hold an access badge to an airport's air-side, for example. Given this enhanced level of access, they are more likely to be able to identify vulnerabilities and target the weakest areas within their airport.

Nigeria is one of the members of International Civil Aviation Organization (ICAO) and periodically ICAO audits the aviation safety and aviation security oversight capacities of its 193 Member States.¹⁰⁷ In the Safety domain these are carried out under our Universal Safety Oversight Audit Programme (USOAP), although the audits do not cover airlines, airports or other industry operators. Rather they are restricted to only the legislation, resources and other capacities which State governments establish in order to effectively implement International Civil Aviation Organization (ICAO)'s Standards and Recommended Practices (SARPs) in each area. The incidences of Insider threats especially the avoidable ones that could have been curbed could put Nigeria in a bad light globally and affect the reputation of the Country. Insider threat can cause security threat, breach of trust, economic loss, loss of life and properties. In the Cyber security

¹⁰⁶ Cyber security in the Nigerian Aviation Industry: *Challenges, Risks and Mitigation Strategies*, Aviation and Allied Business Journal, available at <<https://aviationbusinessjournal.aero/magazine/cybersecurity-in-the-nigerian-aviation-industry-challenges-risks-and-mitigation-strategies/>> accessed on 9 March, 2025.

¹⁰⁷ ICAO Uniting Aviation, ICAO Audit, available at <[https://www.icao.int/about-icao/FAQ/Pages/icao-frequently-asked-questions-faq-5.aspx#:~:text=ICAO%20audits%20the%20aviation%20safety,Security%20Audit%20Programme%20\(USAP\)](https://www.icao.int/about-icao/FAQ/Pages/icao-frequently-asked-questions-faq-5.aspx#:~:text=ICAO%20audits%20the%20aviation%20safety,Security%20Audit%20Programme%20(USAP)>)> accessed on 9 March, 2025.