

**58th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

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AGENDA ITEM 3: AVIATION SAFETY

**SUSTAINABLE DEVELOPMENT OF AVIATION SECTOR WHILE
MAINTAINING SAFETY STANDARDS**

(Presented by Bangladesh)

SUMMARY

For sustainable aviation development, focusing on aerodrome and ground aids is necessary. Implementing efficient ground handling practices, optimizing runway and taxiway usage and adopting eco-friendly technologies for airport operations can reduce carbon emissions. Investing in modern infrastructure, enhancing passenger experience through streamlined services and ensuring proper waste management are also key for creating a more sustainable and resilient aviation sector.

In the context of Bangladesh, ensuring sustainable aerodrome safety and standards involves modernization of airport facilities, enhancement of staff training and promoting eco-friendly practices. Collaborating with international partners for knowledge sharing and adopting best practices specific to Bangladesh's aviation needs will contribute to a more sustainable aviation sector.

Ensuring safety oversight in Bangladesh's aviation sector is essential. This could involve rigorous regular safety audits and regulatory enforcement, updated training programs for aviation personnel and enhanced communication and coordination among industry stakeholders. Implementing internationally recognized safety standards and learning from best practices from other countries can contribute to a safer and more reliable aviation environment.

SUSTAINABLE DEVELOPMENT OF AVIATION SECTOR WHILE MAINTAINING SAFETY STANDARDS

1. INTRODUCTION

1.1 In recent years, sustainability has transitioned from a mere buzzword to an urgent necessity. Bangladesh's aviation industry, a dynamic contributor to the nation's growth, grapples with the dual demand for economic progress and environmental stewardship. The Imperative for Sustainability explores the environmental ramifications of aviation activities, emphasizing the urgency of harmonizing ecological considerations with industry advancements. It underscores the pivotal role of adopting sustainable practices in ensuring long-term viability.

1.2 Sustainable development of Bangladesh's aviation would involve a focus on eco-friendly practices, efficient operations and safety. This could include adopting fuel-efficient technologies, optimizing flight routes, implementing stricter maintenance routines, and promoting the use of renewable energy sources at airports. Collaborating with international aviation bodies and investing in employee training for safety and sustainability measures would also be challenging.

1.3 The aviation industry stands as a testament to human innovation, connecting nations and cultures while driving economic growth. As global air traffic continues to soar, it is imperative to address critical challenges that threaten its sustainability. One such challenge is the convergence of sustainable operations with uncompromised safety standards. This paper delves into the intricate interplay between safety and sustainability, particularly within the context of Bangladesh's aviation sector.

1.4 Undeniably, aviation's foundation rests on the bedrock of safety. The Paramountcy of Safety underscores the non-negotiable importance of maintaining impeccable safety standards amid efforts to usher in sustainability. It delves into the intricacies of aviation safety protocols, emphasizing their evolution over time and their continued significance in safeguarding lives, assets, and public trust. By scrutinizing historical incidents and current practices, this section underscores safety as the linchpin for any sustainable aviation revival.

1.5 The Scope and Structure of the Paper outlines and provides a preview of the subsequent sections, each meticulously curated to explore a facet of the symbiotic relationship between sustainability and safety in Bangladesh's aviation domain. From proposed strategies for mitigating wildlife hazards to the integration of cutting-edge technologies, this paper is poised to offer actionable insights for stakeholders to navigate the path towards a resilient and prosperous aviation sector. This paper, through its comprehensive exploration of the intricate intersections between sustainability and safety, endeavors to present a holistic roadmap for a sustainable development of Bangladesh's aviation industry.

2. DISCUSSION

2.1 The Bangladesh aviation system is rapidly changing in light of economic, social and technological developments. Bangladesh adopts a forward-looking approach to identify emerging aviation trends and associated hazards where possible and assess risks and implement effective mitigation strategies.

2.2 Although Bangladesh has experienced a very low rate of Global Aviation Safety Plan (GASP) High-Risk Categories (HRC) occurrences over the past decade, has an excellent high-capacity regular public transport safety record and an advanced regulatory system, all GASP HRCs remain relevant to Bangladesh aviation. In this context, Bangladesh will actively manage these HRCs by implementing strategies to seek to further reduce the rate of incidents and accidents. The main operational risk areas addressed in NASP of Bangladesh include:

- Runway Safety (RI/RE),

- Ground Operations (GCOL/RAMP),
- Bird/Wildlife Strikes,
- Regulatory Changes,
- Drone,
- Laser Attacks, and
- Cyber Security.

2.3 It is important that Bangladesh remained vigilant on emerging issues to identify potential operational safety risks, collect relevant data and proactively develop mitigations to address them. Civil Aviation Authority of Bangladesh addressed the following emerging issues, which were identified by based on analyses from mandatory and voluntary reporting systems, Air Safety Reports (ASRs) and safety oversight activities or Safety Risk Assessment/Aeronautical Study conducted by service providers/operators for further analysis. The emerging issues are:

- Small drones operating in the vicinity of aerodromes;
- Laser attacks; and
- Exposure to Cyber-Security events.

2.4 Advances in aircraft technology have contributed to making commercial aviation the safest mode of transport. Emerging technology and the integration of existing technologies into aircraft will play a vital role in meeting Bangladesh's future aviation safety, efficiency and long-term capacity requirements. Increased uptake of new aircraft, RPAS, satellite-based navigation systems and other new technology requires properly skilled, qualified and experienced personnel to safely and effectively operate these systems and equipment.

2.5 Safety is always the primary consideration of Bangladesh Government aviation agencies to ensure continued confidence in our aviation industry. Bangladesh has enthusiastically agreed with the commitment to the implementation of activities for the improvement of safety and presents the national strategy and roadmap of actions for enhancing aviation safety by establishing the first edition of the National Aviation Safety Plan (NASP) for the period 2021 to 2023. It identifies initiatives that are being undertaken to reduce the risks associated with aviation operations in Bangladesh and details the strategic direction for the management of aviation safety in the short, medium and long term. The National Aviation Safety Plan (NASP) is one of the components of the Civil Aviation Master Planning document containing the strategic direction of a State for the management of aviation safety for a set time period. This plan lists national safety issues, sets national aviation safety goals and targets and presents a series of safety enhancement initiatives (SEIs) to address identified safety deficiencies and achieve the national safety goals and targets.

Runway incursion and excursion

2.6 The paper addresses the crucial issue of runway incursion and excursion prevention within the context of Bangladesh's aviation industry restart. It emphasizes the necessity of implementing effective strategies and measures to reduce the risk of these incidents, which can compromise safety and disrupt operations. By examining root causes, technological solutions, pilot training enhancements, and procedural improvements, the paper underscores the importance of a multi-faceted approach in safeguarding against runway incursions and excursions. Through a coordinated effort involving regulatory bodies, aviation authorities, airports, and airlines, Bangladesh can create a safer operational environment that supports the sustainable development of its aviation sector. Within

the framework of preventing runway incursions and excursions, the roles and responsibilities of Aerodrome and Ground Aids personnel are pivotal. These individuals play a critical role in ensuring safety of aircraft operations on the movement area. Their duties encompass regular inspections of runways, taxiways, and aprons to identify potential hazards or foreign object debris. By adhering to strict protocols, providing clear and concise communication to pilots through ATC, and promptly addressing any discrepancies, Aerodrome and Ground Aid personnel contribute to minimizing the risks associated with runway incidents. Collaborative training, real-time information sharing, and adherence to standardized procedures are key factors that empower these professionals to fulfill their duty in ensuring the safety of aircraft operations and passengers.

Laser attacks on aircraft

2.7 Preventing laser attacks on aircraft is of utmost importance for aviation safety. Pilots, aviation authorities, and the public share responsibilities in mitigating this hazard. Pilots can adhere to cockpit procedures, such as maintaining a sterile cockpit during critical phases of flight. They should promptly report any laser incidents to air traffic control and provide details for appropriate action. Aviation authorities can enforce regulations against laser pointing near airports and educate the public about the serious consequences of such actions. Public awareness campaigns can deter potential offenders and emphasize the severe risks posed by laser attacks. By fostering a culture of responsibility and awareness, combined with regulatory measures, we can collectively reduce the occurrence of laser attacks and enhance aviation safety.

Ground operation accidents

2.8 Preventing ground operation accidents in aviation requires a comprehensive approach involving rigorous training, effective communication, and standardized procedures. Ground crew personnel must undergo thorough training to ensure they are familiar with safety protocols, equipment operation, and emergency procedures. Effective communication between ground personnel, pilots, and air traffic control is crucial to coordinate movements and actions on the tarmac. Implementing clearly defined procedures, such as using marshalling signals, adhering to specific taxi routes, and conducting thorough checks before pushback or towing, helps minimize the risk of accidents. Regular safety drills and ongoing training can keep ground crew members well-prepared for unexpected situations. Additionally, technological solutions such as ground radar systems and improved lighting can enhance situational awareness and provide real-time information to ground crews and pilots. By fostering a safety culture, prioritizing training, and leveraging technology, the aviation industry can significantly reduce the occurrence of ground operation accidents.

Wildlife hazards

2.9 Mitigating wildlife hazards in aviation involves a combination of proactive measures and rapid responses. Airport authorities can implement habitat management programs that discourage wildlife from nesting or foraging on or in the vicinity of aerodrome. Employing trained wildlife control personnel to monitor and respond to potential hazards can help prevent bird strikes and other incidents. Using technology like radar systems, acoustic deterrents, and visual repellents can help detect and deter wildlife from entering airport spaces. Establishing wildlife reporting systems and protocols enables timely communication between pilots, air traffic control, and wildlife control teams. Pilot awareness and education are crucial as well. Pilots should be trained to identify wildlife hazards and take mitigation measures in this regard during takeoff and landing. Training may be incorporated regarding wildlife hazard awareness into pilot training programs. Moreover, a comprehensive approach involving habitat management, technology, communication and education is essential to effectively avoid wildlife hazards and improve aviation safety performance in the vicinity of aerodromes.

2.10 After pandemic Bangladesh maintained potential growth in aviation sector with our continued safety oversight capabilities. As outlined in NASP, six aviation safety goals of Bangladesh are:

- a. Achieve a continuous reduction of operational safety risks;

- b. Strengthen the Bangladesh's safety oversight capabilities;
- c. Implement an effective State Safety Programme (SSP);
- d. Increase collaboration at regional level;
- e. Expand the use of industry safety programmes by service providers; and
- f. Ensure Bangladesh has the appropriate aviation infrastructure to support safe operations.

2.11 To achieve these goals, Bangladesh has developed operational and organizational roadmaps and action plans comprising a range of defined safety enhancement initiatives and actions. Safety performance is measured to achieve Acceptable Level of Safety Performance (ALOSP).

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) Discuss and note the information contained in this paper.
- b) Encourage States and International Organizations, Industries and Partners to share their best practices among them in order to enhance safety Standards ultimately to prevent incidents and accidents.
- c) Urge ICAO to provide more assistance to the States in the form of Guidance Material, arranging seminar, workshops, training on the- Runway safety and Wildlife Hazard Management.
- d) Share their best practices on ground operation management among member States for ensuring efficient and safe operations on the ground safety promotion.
- e) Aviation Experts and stakeholders can share best practices, technologies, and procedures related to aircraft handling, apron management, and ground support equipment, which could contribute to smoother and safer ground operations within the aviation sector in this region.

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