SAFETY INFORMATION *17/2024*

18th December 2024

POST FLOOD RECOVERY AND SAFE UTILISATION OF AERODROME FACILITIES

1 Introduction

1.1 This Safety Information (SI) is aimed at raising awareness among the aerodrome operators, navigational aids (NAVAIDs) maintenance teams, flight inspection service providers and air navigation service providers (ANSPs) on the essential considerations and best practices to ensure operational readiness at aerodromes, reliability of its associated facilities, as well as compliance with safety standards during post-flood recovery efforts.

2 Background

2.1 Flooding at aerodromes presents substantial challenges to both aerodrome infrastructure and operations, impacting critical movement areas such as runways, taxiways, and aprons, as well as essential facilities like visual navigation aids and navigational aids (NAVAIDs). The recovery process requires a thorough assessment by the responsible parties and it is crucial to implement the appropriate corrective and preventive measures in order to minimise operational downtime and ensure compliance with the relevant regulations and standards.

3 Recommendations

3.1 Initial Assessment and Hazard Identification

Immediately evaluate the flood damage, including critical facilities such as visual aids for navigation (e.g., marking, lighting and markers), the physical condition of the movement areas and the electrical systems at the aerodrome. It is essential for the aerodrome operators to identify high-priority areas that require urgent attention and take necessary actions to restore and ensure safe aircraft operations effectively. This approach minimises operational disruptions and ensures compliance with relevant standards, thus maintaining the safety and reliability of airport infrastructure.

3.2 Facilities and Systems Recovery

a) Pavement

Inspects the movement area for any surface damage, including erosion, standing waters or cracks. Remove any sediment left behind by floodwaters to ensure the area is safe for aircraft operation.

b) Marking and markers

Verify that all markings and markers are clearly visible and intact. Repaint the markings as necessary to meet the stipulated standards and repair or replace any damaged markers to make them easily distinguishable for the pilot and other users.

c) Aeronautical Ground Light (AGL) and other lighting systems

Assess the operational status of the AGL and other lighting systems (e.g., apron floodlighting, security lighting, etc.) to ensure they are fully functional, provide sufficient visibility and have a stable power supply. Immediately address any deficiencies by repairing or replacing any damaged lights to maintain safe operations, especially during night time and periods of low visibility.

d) Sign

Ensure that all mandatory and information signs are intact and conspicuous, allowing pilots to easily identify and interpret the information necessary for safe aircraft operations. For illuminated signs, verify that the lighting is fully functional and provides optimal visibility, particularly during night operations or periods of low visibility. Prompt repairs or replacements should be carried out for any damaged or non-functional signs to maintain safety standards.

e) Navigational aids (NAVAIDs)

Inspect the antennas, shelters, cabling and foundations of NAVAIDs, such as Instrument Landing Systems (ILS) and the Doppler Very High Frequency Omni-Directional Radio Range (DVOR), for any visible damage or irregularities. Use industrial-grade tools and non-corrosive cleaning agents to thoroughly clean and decontaminate the equipment, ensuring no residue compromises performance. Conduct electrical testing to identify potential issues, such as short circuits or grounding faults, and address them promptly. Where required, recalibrate the equipment in accordance with the manufacturer's guidelines or International Civil Aviation Organization (ICAO) specifications, and realign antenna systems to guarantee optimal signal transmission, accuracy, and functionality. This ensures the reliability and safety of navigational aids during operations.

f) Power supply

Verify that the aerodrome's primary power supply is available and the secondary power supply is functional, including standby power units such as engine generators, for the safe functioning of air navigation facilities.

3.3 Wildlife and Foreign Object Debris (FOD) Management

Inspect the critical areas of the aerodrome for any foreign object debris (FOD), such as wildlife carcasses, food waste or other materials that may have been introduced by floodwaters. Assess whether the flooding has created new habitats that could attract wildlife and address these areas promptly to mitigate risks. Remove any wildlife hazards to prevent operational disruptions, ensuring compliance with wildlife management practices. Conduct a thorough FOD sweep across the aerodrome to eliminate debris such as branches, loose materials, or other hazards left by floodwaters. Safely and appropriately dispose of all collected debris to maintain a clean and secure operational environment.

3.4 Post-Flood Mitigation and Prevention

Incorporate flood prevention strategies into long-term infrastructure planning and aerodrome improvements to mitigate the effects of future flooding. Review and update emergency response plans, including evacuation and operational procedures, to reflect lessons learned from past flood events. These measures will strengthen the aerodrome's resilience to extreme weather events and minimise disruptions.

3.5 Health and Safety Considerations

During recovery operations, prioritise the health and safety of personnel by equipping them with appropriate personal protective equipment (PPE), such as safety boots, gloves, masks, and vests in order to reduce the risk of injury, exposure to hazardous materials, and waterborne diseases potentially present in floodwaters. Additionally, ensure that first-aid support and emergency medical services are readily available throughout the recovery process.

3.6 Post-recovery Monitoring

Following the completion of recovery efforts, establish a system for continuous monitoring of facilities to ensure they remain operational, safe and compliant with standards. Develop a schedule for routine inspections and maintenance to identify and address any issues that may have been overlooked or have developed post-recovery. This approach ensures long-term reliability and safety of the aerodrome infrastructure and systems.

4 Conclusion

4.1 Recovering aerodrome facilities after a flood requires a coordinated and comprehensive approach from all responsible parties. This process includes immediate damage assessment, systematic restoration of facilities and systems, and ongoing post-recovery monitoring to sustain operational safety and compliance. Adhering to these measures is essential to minimise operational disruptions and ensure the safe operation of aircraft during arrivals and departures at the aerodrome.

4.2 It is imperative that all stakeholders, including aerodrome operators, NAVAIDs maintenance teams, flight inspection service providers and ANSPs, uphold their responsibilities to ensure that all facilities are in serviceable condition and fully compliant with applicable regulations and standards. For specifications and requirements, the following references (but not limited to) may be consulted:

a) CAD 14 Vol I – Aerodrome Designs and Operations;

b) CAD 14 Vol II – Heliports;

c) ICAO Annex 10 – Aeronautical Telecommunications;

d) ICAO Doc 8071 – Manual on Testing of Radio Navigation Aids; and

e) Manufacturer Manuals.

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