International Civil Aviation Organization

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Agenda Item 4: Provision of AOP in the Asia/Pacific Region

– Certification and Operations of Aerodromes

SEAPLANE OPERATIONS IN THE MALDIVES

(Presented by Maldives)

SUMMARY

This paper presents an overview of the seaplane operation, and certification / licensing of water aerodromes and landing sites in the Maldives. A geographically dispersed archipelago heavily reliant on tourism. Seaplanes serve as vital transportation links between Velana International Airport and remote resort islands, overcoming the challenges posed by adverse weather particularly during westerly monsoon season, easing the travel between the islands. The paper discusses the historical evolution of seaplane operations, regulatory framework, air traffic control strategies opted, site selection criteria etc. . Key considerations such as safety measures, environmental impact mitigation, and infrastructure costs are also addressed. Velana International Airport being the central hub, the challenges including high demand, airspace management, and economic considerations are analyzed, with a focus on the ongoing efforts to ensure safe, sustainable, and accessible transportation across the Maldives.

1. INTRODUCTION

1.1 The Maldives, an archipelago located in the Indian Ocean southwest of India, consists of 26 atolls comprising over 1,100 coral islands. This unique geographic formation poses challenges for inter-island connectivity, primarily relying on seaplane operations due to limited transport infrastructure. Seaplanes are crucial for connecting Velana International Airport with remote resort islands, particularly during the westerly monsoon season when adverse weather conditions can make travel difficult by sea.

1.2 The historical development of seaplane operations, regulatory frameworks, air traffic control strategies, and site selection criteria are critical areas of focus. Additionally, factors such as safety measures, environmental impact mitigation, and infrastructure costs play significant roles in the operation and management of seaplane services. With pristine beaches and a thriving tourism industry, seaplane operations have become integral to the Maldivian economy, providing efficient and scenic transportation for visitors.

1.3 Velana International Airport serves as the central hub for these operations, facing challenges such as high demand, airspace management, and economic considerations. Ongoing efforts are focused on ensuring safe, sustainable, and accessible transportation throughout the Maldives, addressing the diverse and intricate requirements of this distinctive island nation.

2. DISCUSSION

2.1 Geographical Imperatives and Enhancing the Tourism Experience

2.1.1 Many of these islands in Maldives are remote and only accessible by seaplane or boat. Seaplanes provide a fast and efficient way to connect these islands, making it feasible for tourists to visit multiple resorts during their stay.

2.1.2 Seaplanes offer a unique and scenic mode of transport, flying low over the turquoise waters and providing breathtaking views of the atolls and islands. This enhances the overall travel experience for tourists, who often seek adventure and picturesque journeys.

2.1.3 Many luxury resorts in the Maldives are located on small, private islands, Seaplanes can land directly on the water next to these resorts, providing direct access without the need for lengthy boat transfers.

2.1.4 The presence of seaplane services enhances the attractiveness of the Maldives as a premium tourist destination. It offers a distinctive travel experience that sets the destination apart from others, appealing to travelers seeking exclusivity and adventure.

2.2 History – Early Development

2.2.1 Maldivian Air Taxi (DHC-6 Twin Otter) in 1993 began its operation with only two aircraft, the company grew rapidly over the years where over 500,000 passengers were transferred per year. Hummingbird Island Helicopters, later renamed as Trans Maldivian Airways (TMA) also began seaplane operation in the Maldives in 1997, adding competition to the market.

2.2.2 Over the decades, driven by the boom in Maldivian tourism, both TMA and Maldivian Air Taxi (MAT) expanded their fleets rapidly, later merging the two companies in 2013 and started Sea-plane operation has expanded over the decades and there are three operators now, TMA, Maldivian and Manta Air, adding up the fleet to 93 aircraft, making it the world's largest seaplane fleet.

2.2.3 Statistical analysis indicates that an average of more than 500 movements originate daily from Velana International Airport, which averages an annual movement of over 150,000 movements.

2.3. Government Support and Collaboration

2.3.1 The Maldivian government has actively supported the development of seaplane operations through policy initiatives and infrastructure investments. Collaborating closely with private sector stakeholders and international partners, the government has implemented regulations to ensure safety, environmental sustainability, and operational efficiency. This collaborative approach has fostered a robust seaplane industry that contributes significantly to the country's tourism-driven economy.

2.4 Regulatory Framework

2.4.1 Regulating water aerodromes and the seaplane operations in the Maldives is overseen by the Maldives Civil Aviation Authority, ensuring adherence to the safety standards, operational guidelines and best practices. Regulatory framework consists of MCAR 138-A Water Aerodrome Rules, MCAR 138-B Water Aerodromes Standards, MCAR 138-C Procedures and Requirements for Floating Platform License.

2.4.2 Regulations for Water Aerodromes and Seaplane landing sites:-

- MCAR 138-A Water Aerodromes Rules - Prescribes the requirements to the operators for developing, operation, and maintenance of water aerodromes.
- MCAR 138-B Water Aerodromes Standards - Prescribes the standards for physical characteristics, obstacles limitation surface (OLS), visual aids, and operating procedures at certified water aerodromes.
- MCAR 138-C Procedures and Requirements for Floating Platform License

2.4.3 Flight operations requirements - MCAR OPS

MCAR OPS lays down detailed rules for air operations with aeroplanes, helicopters, balloons and sailplanes, including ramp inspections of aircraft of operators under the safety oversight of CAA when landed at aerodromes located in the Maldives

2.4.4 Maintenance and continuing Airworthiness Requirements

MCAR–145 - Approved Maintenance Organization, and MCAR -M Continuing Airworthiness, stipulates requirements for the maintenance of aircraft used for Commercial Air Transport (CAT) are specified in MCAR-145.

2.4.5 Aerodrome and landing sites

There are 2 different types of landing sites in the Maldives. Landing sites co-located with land aerodromes and landing sites located in the lagoon.

2.4.6 As per MCAR 138-A, seaplane landing areas are required to be certified when:

a) The water aerodrome is co-located with a land aerodrome with an established Control Zone;

b) The water aerodrome exceeds 100,000 movements annually; and

c) The CAA finds it necessary to certify the water aerodrome.

2.4.7 All other remote landing sites in the lagoon served by floating platforms are required to be licensed. Procedures and Requirements for Floating Platform Licenses are specified in MCAR – 138 –C.

2.4.8 Each licensed water aerodrome operator is required to have an emergency response plan. All personnel involved in rescue and firefighting duties must receive appropriate regular training in the use of equipment provided. The medical equipment commensurate with the category of aircraft in operation must always be readily available.

2.5 MCAA's Oversight requirement

2.5.1 All certified landing sites are required to be inspected/audited as per the MCAR138-A Water Aerodrome rules.

2.5.2 As of now, there are a total of 3 landing sites that fall into the category of water aerodromes. And over 100 landing sites are licensed as per the CAA requirements.

2.5.3 Audits and inspections are conducted by MCAA Inspectors annually.

2.5.4 Remote landing sites are required to be inspected by the operator under their Safety Management system and inspection/audit reports should be submitted to CAA.

2.6 Velana International Airport –Seaplane Terminal and Facilities

2.6.1 Velana International Airport being the main hub of the seaplane operations, terminal facilities are provided to handle more than 1 million passengers annually. Seaplane docking system has over 100 docks with fueling and servicing arrangements to cater for the total seaplane fleet.

2.6.2 Each operator has exclusive maintenance facilities for line maintenance and heavy maintenance. Training facilities are also provided for recurrency and continuous training. Terminal facilities feature passenger lounges, security enhanced boarding gates.

2.7 Safety Considerations

2.7.1 Safety in seaplane operations is paramount, requiring stringent protocols and high maintenance practices. Seaplane operators prioritize pilot training programs and ongoing education to ensure competency in navigating diverse weather conditions and operational challenges. Regular maintenance checks and adherence to safety regulations minimize risks associated with landing in adverse weather conditions and ensure passenger safety throughout the journey.

2.8 Challenges and Considerations

2.8.1 Despite its benefits, seaplane operations in the Maldives face challenges such as high demand during peak tourist seasons, confined airspace, and traffic congestion within the control zone and near popular resort destinations. Coordination with land-based operations and effective airspace management are essential to mitigate these challenges and ensure efficient service delivery.

2.8.2 The establishment and maintenance of water aerodromes require significant investment in infrastructure development, including terminal facilities, maintenance hangars, and navigation systems. While initial costs can be substantial, economic benefits derived from enhanced tourism accessibility and operational efficiency justify these investments over the long term. Strategic planning and public-private partnerships facilitate sustainable financing models that support ongoing infrastructure upgrades and expansion.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper and discuss any relevant matters as appropriate.

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