



INTERNATIONAL CIVIL AVIATION ORGANIZATION

REGIONAL SEMINAR ON WATER AERODROMES

Yogyakarta, Indonesia, 2 June 2014

**REGULATORY REQUIREMENTS FOR WATER AERODROME OPERATIONS
IN THE MALDIVES**

(Presented by Maldives)

SUMMARY

This paper presents an overview on the regulatory requirements to be fulfilled by Water Aerodrome operators. It mainly focuses on the standards for water aerodromes, emergency response planning and administrative procedures for water aerodrome operation.

1. INTRODUCTION

The Republic of the Maldives is a chain of around 1200 islands stretching 750km across the Indian Ocean with the northernmost island at 7° 06" N and the southernmost island just crossing the Equator at 0° 42" S.

Of the 1200 islands only 200 are inhabited by local Maldivian people, nearly 100 islands have been developed as tourist resorts and the remaining islands are uninhabited.

Mode of transportation has been private Dhonis and speedboats (boats specially designed in the Maldives) which travel from densely populated islands to Male (capital of Maldives). Residents of islands use this facility to travel from their islands.

With expansion of tourism, the need for more efficient and quicker mode of transportation system was needed.

Float Plane operation was introduced in 1993 with only two aircraft. The fleet has increased to 44 now, operating approximately 300 movements daily carrying more than 800000 passengers annually.

The major seaplane base is situated in Male' International Airport, adjacent to the main runway consisting of four water runways in main international airport (shown in Figure 1). Other landing sites are available in remote locations spread across the country all of which are also licensed and regulated by MCAA.

INIA (Ibrahim Nasir International Airport) handles an average of 300 floatplane movements daily.

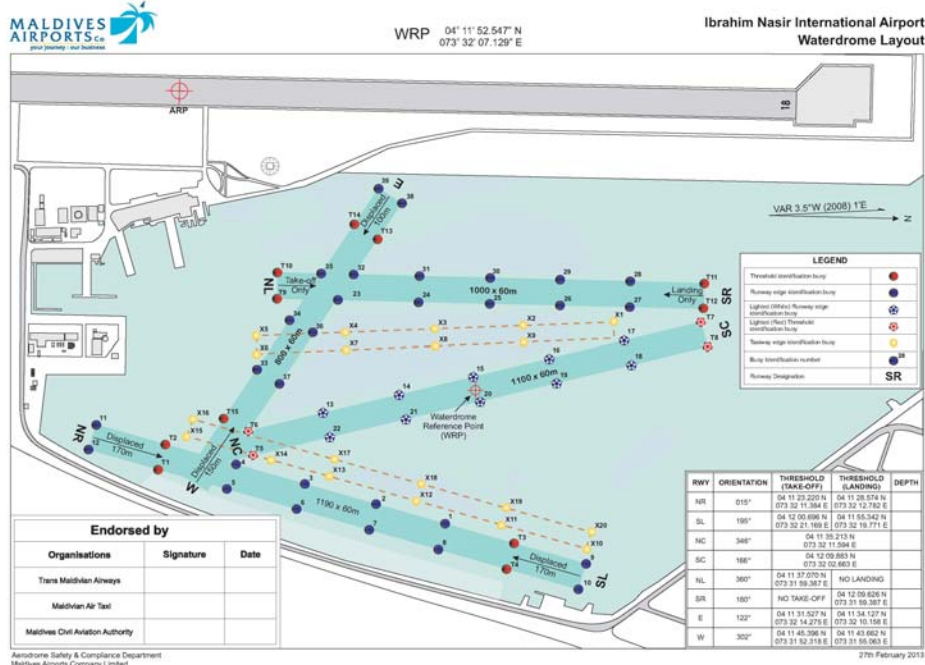


Figure 1 – INIA Water Aerodrome Chart

2. DISCUSSION

2.1 All water aerodromes are licensed by MCAA as per Air Safety Circular 14-2. There are more than 60 landing sites licensed by MCAA.

2.2 Regulatory requirements

2.2.1 (i) Site Survey

Upon receiving an application for a water aerodrome license, MCAA conducts survey for the proposed location with the relevant government bodies to check the suitability of a water based aerodrome at selected location.

The following factors are considered.

- If the location of the proposed water aerodrome is inside protected waters.
- Depth of sea bed on the proposed water runway and the size of aircraft intended for operation.
- Distance of water aerodrome from the servicing resorts and islands.
- Maritime movements in the location.
- Navigable airspace.
- Effect on the surrounding community.
- Available length of clear and safe water runway strip with respect to the size and type of aircraft intended for use.

2.2.1 (ii) Dimensions of landing area, floating platform and safety equipments

(a) Manoeuvring Area

A manoeuvring area shall have a minimum width, at any point, equal to or greater than, as shown in Table A

- 100 m (30 + 40 + 30) where the manoeuvring area code is W1; and
- 120 m (30 + 60 + 30) where the manoeuvring area code is W2 or W3.

Manoeuvring Area Code		W1	W2	W3
Seaplane maximum take-off mass		Less than 2730 kg	2730 kg to 5700 kg	5701 kg or more and seaplanes of performance groups A and B
Manoeuvring Area Width	Water Runway Width	40 m	60 m	60 m
	Strip Width (including RWY)	100 m	120 m	120 m

(b) Taxiways

Recommendation - Taxiways should be provided where required, to permit safe and expeditious surface movement of aircraft.

Recommendation - Where taxiways are provided, the width of taxiways should be not less than 45 m.

Recommendation - The depth of taxiways should be not less than 1.2 m (4 ft).

(c) Emplaning and Deplaning of Passengers, Baggage and Cargo.

Facilities to emplane and deplane passengers, Baggage and Cargo shall be provided in the form of a dock, floating platform, wharf, ramp or beach and shall be based on the requirements of the seaplanes using the water aerodrome.

Where a dock is provided, it shall;

- (a) be designed in such a manner as to provide a safe clearance between an aircraft wing and any object the dock could come in contact with;
- (b) be in a condition that permits constant use without injury to persons or damage to aircraft;
- (c) where applicable, be attached or anchored in a manner that prevents it from shifting position or becoming detached;
- (d) have access from the shore that provides for the safe movement of persons using the facility;
- (e) have sufficient tie down points at each aircraft parking position to secure aircraft; and
- (f) when an aircraft is normally secured in a position where any aircraft propeller overhangs the dock and constitutes a hazard to the movement of persons using the facilities, the hazard shall be clearly indicated.

(d) Safety Equipments:

The following safety equipment shall be provided on floating platforms, dock, ramps and wharfs:

- (i) 30 m life line ropes – adequate to cater for the number of seaplane docking positions;
- (ii) Life Rings - adequate to cater for the number of seaplane docking positions;
- (iii) Fire extinguishers – for each seaplane docking position one extinguisher;
- (iv) 01 flashing yellow light/beacon (only for floating platforms located outside the house reef and in open water).

The flashing yellow light/beacon shall be installed on the floating platforms on the outer reef and its height shall not be one (1) meter from the level of the platform. The beacon and its fixing strut shall be made out of frangible material. The beacon shall be ON from dusk to dawn.

2.2.1 (iii) Emergency response plan

Each licenced water aerodrome operator shall develop an emergency response plan.

The plan should include a response time of 3 minutes if the landing area and the platform is located within the house reef.

Were the platform is located outside the house reef or away in a lagoon the License holder shall determine a reasonable response time and establish this response time in the emergency Response Plan for that location.

2.2.1 (iv) Visual Aids

The edges of each manoeuvring area shall be easily identifiable by pilots departing from, or arriving at, the water aerodrome.

Floating visual aids shall be conspicuous and shall be visible to seaplanes manoeuvring on the surface and up to at least 300 m above the water.

The threshold / displaced threshold, manoeuvring area / water runway edge and taxiway edge shall be marked with contrasting bright colours.

Recommendation - At water aerodromes where Special VFR operations are allowed, at least one water runway's edge markers and threshold markers should be lighted for the benefit of pilots. In addition, this will enhance safety during dusk and dawn operations.

Where shoals or other hazards could endanger seaplanes, marker buoys shall be installed to clearly indicate the hazard.

Recommendation - All water aerodromes should be equipped with at least one wind direction indicator. A Wind Direction Indicator is recommended to be fixed on land at a point that is in the nearest vicinity to the water runway and floating platform to enable the pilot to find the wind direction and have an indication of wind velocity. For this purpose a Wind Sock of sufficient size shall be installed to be visible from an aeroplane flying at a height of 200 meters. For details of the size of the Indicator refer to ASC 139-5, Chapter 5.

2.2.1 (v) Rescue and Firefighting Services:-

Where the Daily Average movements are under 100

Procedures for the enhancement of passenger and crew post-accident survival should be developed, and facilities in terms of staff and equipment, appropriate to the type of seaplane operations anticipated at the water aerodrome, should be provided.

Resort Agents shall be employed and trained for firefighting, water rescue operations and various emergency scenarios and shall be familiar with the seaplane operations.

All vessels shall be at least 200 m away from the floating platform and the manoeuvring area when the seaplane is on final for landing or ready for take-off.

Where the Daily Average Movements are above 100.

At water aerodromes where the average daily movements exceed 100, rescue and firefighting vessel(s) shall be provided appropriate to the level of protection required.

The license holder is responsible for providing RFFs and Safety equipment as appropriate to the type of aircraft and operation.

All personnel involved in rescue and firefighting duties must receive appropriate regular training in the use of equipment provided. This should include an operational exercise at least once per quarter and records of such training shall be made available for MCAA inspectors.

Response Time

For water aerodromes or floating platforms within the house reef, the operational objective of the RFFS shall be to achieve a response time not exceeding three (03) minutes to any point of each operational water runway, in optimum visibility and surface conditions.

Where water aerodromes or floating platforms are located outside the house reef of an island and where access is not easy to the floating platform, the response time shall be as agreed by MCAA and the operator and as such, this time shall be recorded and reflected in the Airport Emergency Plan (AEP) for that locale.

Surveillance

MCAA conduct inspections for each licensed water aerodrome annually.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the information contained in this paper.
- b) Invite ICAO to establish standards and recommended practices for seaplane bases.

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