MALDIVES CIVIL AVIATION AUTHORITY
Republic of Maldives

AIR SAFETY CIRCULAR

ASC OPS 1-5
Performance Based Navigation

Initial Issue, 01 September 2012

PBN 0.0 APPLICABILITY

This ASC addresses the requirements for Performance Based Navigation (PBN) referred to in MCAR OPS 1 Subpart D.

MCAR-OPS 1.243 states that, an operator shall ensure that an aeroplane operated in areas, or through portion of airspace, or on routes where navigation performance requirements have been specified, is certified according to these requirements, and, if required, that CAD has granted relevant operational approval.

PBN 1.0 DEFINITIONS

(a) **Performance-based navigation (PBN) -** Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace

(b) **Navigation specification -** A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace as described in the ICAO PBN Manual (DOC 9613)

(c) **Required navigation performance (RNP) specification -** A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP.

(d) **Area navigation (RNAV) specification -** A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV

PBN 1.1 PERFORMANCE BASED NAVIGATION

(a) No person may operate flights along ATS routes, on an instrument approach procedure, or in a designated airspace where a Navigation Specification has been prescribed unless:

(1) the person has received authorization from the Maldives Civil Aviation Authority.
(2) the aircraft is equipped with the navigation equipment to enable it to operate in accordance with the prescribed Navigation Specification; and
(3) the aircraft is equipped with navigation equipment that continuously provides information to the flight crew of adherence to or departure from track with respect to the required degree of accuracy at any point along that track.

(b) No person may operate an aircraft unless it has sufficient navigation equipment that will enable the aircraft to navigate in accordance with paragraph (a) above, such that in the event of the failure of any piece of navigation equipment at any stage of flight, the remaining equipment will enable the aircraft to continue to a destination or an alternate destination.

PBN 1.2 ELECTRONIC NAVIGATION DATA MANAGEMENT

No person shall employ electronic navigation data products that have been processed for application in the air and on the ground unless the CAA has approved:

(1) the operator's procedures for ensuring that the process applied and the products delivered have acceptable standards of integrity and that the products are compatible with the intended function of the equipment that will use them;
(2) the operator's programme for continual monitoring of both process and products; and
(3) the operator's procedures to ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.

PBN 1.3 INITIAL PBN OPERATIONS TRAINING

(a) No person may serve nor may any AOC holder use a person as a flight crew member or flight operations officer (if applicable) unless he or she has completed the appropriate initial PBN operations training curriculum approved by the CAA.

(b) The initial PBN training curriculum for each Navigation Specification shall ensure that each pilot and flight operations officer (if applicable) is qualified in the type of operation in which he or she serves and in any specialized or new equipment, procedures, and techniques, such as:
(1) knowledge of specialized navigation procedures;
(2) knowledge of specialized equipment;
(3) SIDs and STARs (if applicable);
(4) the ability of the airborne equipment to fly the designed flight path. This may involve pilot intervention where the equipment functionality is limited;
(5) management of changes (procedure, runway, track, etc.);
(6) turn management (turn indications, airspeed & bank angle, lack of guidance in turns);
(7) route modification (insertion/deletion of waypoints, direct to waypoint) and restrictions on route modification;
(8) intercepting route, radar vectors; and

(9) where GNSS is used, flight crews will be trained in GNSS principles.

(c) Each AOC holder shall require each pilot and flight operations officer (if applicable) to complete a demonstration of competence to a defined standard of knowledge and performance.

PBN 2.0 EFFECTIVITY

This circular comes into effect from 01 September 2012

For the Maldives Civil Aviation Authority
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