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A 005. INTRODUCTION OF PERFORMANCE BASED NAVIGATION (PBN) INSTRUMENT FLIGHT PROCEDURES IN RIGA TMA

1. Introduction

This circular provides advance notification concerning the introduction of Performance Based Navigation (PBN) procedures in Riga TMA that will come into effect on 12 AUG 2021, at 0000 UTC. Information about PBN Instrument Flight Procedures will be published in AIP Latvia WEF 12 AUG 2021. These procedures are a comprehensive change to the structure of air traffic routes and procedures for operations within the Riga TMA. Existing conventional ground-based Standard Arrival Route (STAR) and Standard Instrument Departure (SID) procedures will be revoked coincidental with the introduction of the new procedures.

The revised structure is a result of more than five years of consultation, airspace modelling and aircraft performance validation with a broad range of airspace users. The airspace evolution to a PBN structure will improve the safety and efficiency of operations, while addressing environmental noise and greenhouse gas emission concerns.

2. Operational Impact of Performance-based Navigation (PBN) procedures

Within the Riga TMA, to the maximum extent possible, instrument flight rules (IFR) air traffic will be managed through the use of air traffic control clearances using assignments to PBN procedures. Flight crew should expect to operate on published PBN procedures within the Riga TMA.

3. Standard Arrival Route (STAR) Operations

Arriving aircraft to RIGA AD (EVRA) will be advised as to the active runway in use and the anticipated approach by ATC before entering Riga TMA. STARs have been developed originating at the following eleven (11) TMA entry waypoints:

1. AMOLI
2. ASKOR
3. BARVA
4. ERIVA
5. GUNTA
6. LAPSA
7. LUTAL
8. ORVIX
9. TENSI
10. TUSAS
11. VANAG

STAR routings have been developed in order to facilitate a safe and efficient flow of arrival and departure traffic interaction, while addressing environmental considerations of noise and greenhouse gas emissions. Continuous descent operations are supported to the extent possible.

Entering the Riga TMA via one of the above listed waypoints, aircraft can expect to receive a clearance to descend via the STAR. Altitude and speed restrictions on the STAR shall be adhered to unless the clearance explicitly alters the published restrictions.

Flight crew should be familiar with the structure of the STARs and the ATC phraseology associated with their use. Phraseology examples can be found in Standardised European Rules of the Air (SERA) Section 14 Voice communication procedures, Appendix I.

4. Connecting STARs to Instrument Approaches

The termination waypoint of the STARs facilitates either a direct connection to the Required Navigation Performance Authorization Required Approach (RNP AR APCH) procedures (see paragraph 7 below) or via a vector to final or other ATC clearance to conversion to a conventional instrument approach.

5. Standard Instrument Departure (SID) Operations

Aircraft departing EVRA will be advised of their expected SID prior to departure. SIDs have been developed terminating at the following eleven (11) TMA exit waypoints:

1. AMOLI
2. ASKOR
3. BERIL
4. ERIVA
5. LAPSA
6. SAKTA
7. SOKVA
8. TENSI
9. TUSAS
10. VALED
11. VANAG

SID routings have been developed in order to facilitate a safe and efficient flow of departure and arrival traffic interaction, while addressing environmental considerations of noise and greenhouse gas emissions. Continuous climb operations are supported to the extent possible.

When departing EVRA, aircraft can expect to receive a clearance to climb via the SID. Altitude, climb gradient, and speed restrictions on the SID shall be adhered to unless the clearance explicitly alters the published restrictions.

Flight crew should be familiar with the structure of the SIDs and the ATC phraseology associated with their use. Phraseology examples can be found in Standardised European Rules of the Air (SERA) Section 14 Voice communication procedures, Appendix I.

Owing to traffic management requirements, aircraft can expect to receive progressive flight level clearances while departing on SIDs.

6. STAR and SID Navigation Specifications

The STAR and SID procedures are designated as "RNAV 1". RNAV 1 operations are based on the use of the same aircraft receivers as those required for RNAV 5. Additional aircraft functionality and navigation aid infrastructure requirements are needed to meet the more demanding performance of RNAV 1. These procedures are compatible for all aircraft certified for RNAV 1 operations using GNSS, DME/DME and/or DME/DME/IRU (*Inertial reference unit*).

Owing to the designation of "RNAV 1", Field 10 of filed ICAO flight plans shall indicate "D1", "D2", "D3", or "D4" to designate an aircraft and air crews' certification to use these procedures. For "D1" and "D2" designations the use of GNSS supporting elements are limited to GPS L1.

7. Required Navigation Performance Authorization Required Approach (RNP AR APCH)

RNP AR APCH procedures are available for landing at EVRA on both runway 18 and runway 36. The RNP AR APCH procedures are titled as "RNP Z RWY 18" and "RNP Z RWY 36".

An initial approach fix (IAF) is located on the east and west side of the final approach segment for each runway end. The placement of the IAF is coincidental with the termination waypoint of the STARs for which the arrival direction is appropriate.

The most demanding RNP value used throughout the approach construction is RNP 0.3. Radius-to-fix (RF) path terminators have been used in the design. Therefore, the minimum ICAO flight plan Field 10 designation to be filed to indicate the ability to use these procedures is "T1". Use of GNSS supporting elements are limited to GPS L1.

8. International Civil Aviation Organization (ICAO) Flight Plan Completion

IFR aircraft operations into and out of the Riga TMA shall be accompanied by a filed comprehensive ICAO flight plan indicating all applicable PBN designations in Field 10 and Field 18 in order to be eligible to operate on the published PBN procedures. Failure to properly indicate the aircraft equipment capability in Field 10 and additional PBN capabilities in Field 18 of the flight plan may result in aircraft sequencing delays or less than optimal available trajectories.