

AIC
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*Introduction of Precision RNAV (P-RNAV) in the Belgian Terminal Airspace
of the Brussels FIR*

1. PURPOSE

- 1.1 The purpose of this Circular is to provide information concerning the introduction of Precision RNAV (P-RNAV) operations in the Belgian Terminal Airspace of the Brussels FIR.

2. BACKGROUND TO RNAV OPERATIONS IN TERMINAL AIRSPACE

- 2.1. The requirement to provide operational benefits in the terminal area consistent with those that were realised in the en-route environment through the implementation of Basic RNAV (B-RNAV), led to the adoption of the P-RNAV concept.
- 2.2. Supporting material and guidelines have been developed over the last few years and P-RNAV operations have already been introduced in some States. Additionally, a rapidly growing proportion of the ECAC aircraft fleet has the necessary airworthiness certification and has attained formal P-RNAV operational approval.
- 2.3. The use of P-RNAV in the terminal airspace of the Member States of ECAC will enable States to design RNAV terminal area procedures in a manner which provides benefits, i.e.: fuel savings achieved by optimum flight profiles, improved route alignment for the users and noise mitigation.
- 2.4. In addition, ECAC States represented at the Eurocontrol Airspace and Navigation Team confirmed that, by the end of 2006, the terminal area procedures in their respective airspaces would be compliant with the provisions of the flight-safety driven RNAV Integrated Initiative.

- 2.5 Specifically, the allowable terminal area procedures are as follows:
- Conventionally designed and designated procedures
 - Precision RNAV
 - A limited application of Basic RNAV for non-complex procedures, designed to en-route principles and above MSA/RVA

In addition, to new non-compliant RNAV procedures are to be implemented.

3. TERMINAL AREA NAVIGATION APPLICATION PLANNING IN THE BELGIAN PART OF THE BRUSSELS FIR

A phased introduction of P-RNAV procedures is planned in the Belgian part of the Brussels FIR, initially comprising:

Brussels Airport (EBBR):

- Selected STAR and instrument approach procedures for RWY 25L (main runway for arrivals)
- Selected SID for RWY 25R (main runway for departures)

Liège Airport (EBLG):

- Selected STAR and instrument approach procedures for RWY 23L (main runway for arrivals)
- Selected SID for RWY 23L (main runway for departures)

These procedures will be submitted by Belgocontrol for approval by the BCAA before end 2007, with a planned publication date mid 2008.

Based on customer demand, experience and benefits obtained from this initial implementation, further introduction of P-RNAV procedures in the terminal airspace of Antwerpen (EBAW), Brussels (EBBR), Charleroi (EBCI), Liège (EBLG) and Oostende (EBOS) will be considered.

More detailed information will be published in AIC in due time.

4. P-RNAV APPROVAL REQUIREMENTS

- 4.1. Aircraft operation on such P-RNAV terminal area procedures shall be approved in accordance with the relevant JAA Temporary Guidance Leaflet No. 10 (TGL-10): "*Airworthiness and Operational Approval for Precision RNAV Operations in Designated European Airspace*", or equivalent.
- 4.2. Belgian operators shall consult the national circular CIRC/AIRSPACE-03 dated 09/03 to get some more detailed P-RNAV information.

5. FLIGHT PLANNING AND ATC PROCEDURES

- 5.1. In addition to existing flight planning requirements, operators of aircraft approved for P-RNAV operations, shall, in addition to the designator "R", also insert the designator "P" in item 10 of the flight plan.

- 5.2. Where a failure or degradation results in the aircraft being unable to meet the P-RNAV functionality and accuracy requirements before departure, the operator of the aircraft shall not insert the designator "P" in item 10 of the flight plan. Subsequently, for a flight for which a flight plan has been submitted, an appropriate new flight plan shall be submitted and the old flight plan cancelled. For a flight operating based on a repetitive flight plan (RPL), the RPL shall be cancelled, and an appropriate new flight plan shall be submitted.
- 5.3 Pilots are required to inform ATC if they cannot accept a P-RNAV procedure for which they have been cleared.
- 5.4 Further information on associated ATC procedures, such as R/T phraseology, will be provided through amendments to the national AIP.

6. ACCOMODATION OF NON P-RNAV APPROVED AIRCRAFT

For aircraft that are not approved for P-RNAV operations, conventional procedures will continue to be available.

7. ADDITIONAL INFORMATION

- 7.1. Further information on policy, planning and implementation issues for RNAV can be obtained from:

Belgocontrol
Tervuursesteenweg 303
B-1820 Steenokkerzeel
Tel: ++32 (0) 2 206 22 31
Fax: ++32 (0) 2 206 22 21
E-mail: scs@belgocontrol.be

- 7.2. Further information in respect to the certification and operational approval for RNAV operations should be addressed to:

Civil Aviation Authority
CCN - 2th floor
Rue du Progrès / Vooruitgangstraat 80 Box 5
B-1030 Brussels (Belgium)
Tel: ++32 (0) 2 277 43 53
Fax: ++32 (0) 2 277 42 57
E-mail: civilair@mobiliteit.fgov.be

- 7.3 Additional information on P-RNAV implementation will be made available through the Eurocontrol AFN User Support Cell:

Tel: ++32 (0) 2 729 46 33
E-mail: afn.user.support@eurocontrol.int

8. FUTURE DEVELOPMENTS

- 8.1 Increasing dependence upon RNAV operations is expected in the coming ten years. To enable RNAV to become the only means of navigation and to support the longer term transition to a GNSS environment, it is essential that RNAV systems offer the same level of integrity and continuity of service as offered by existing navigation equipment (e.g. VOR). It is also essential that consistent functional performance can be obtained. To this end RNAV equipment industry standards have been published by EUROCAE and RTCA (EUROCAE ED 75/RTCA Do 236 refers) and equipment meeting these standards is designated by industry as RNP-RNAV. Such equipment is capable of meeting the requirements of JAA TGL 10.
- 8.2 Subject to an appropriate business case being developed, it is anticipated that a decision for an RNP mandate will be made by ECAC Member States by 2008. Implementation is not foreseen before 2015.
- 8.3 Operators equipped with RNAV Systems not capable of being certified to JAA TGL 10, and wishing to re-equip to enable operation on RNAV terminal area procedures, are recommended to take due account of the expected RNP requirements.

9. DOCUMENT CONTROL

- 9.1 This AIC complements AIC 13/1997 on B-RNAV.
- 9.2 This AIC replaces AIC 04/2004.