**AIRCRAFT OPERATIONS DIVISION**

**CAA OF LATVIA**

**PERFORMANCE BASED NAVIGATION CHECKLIST**

Name of Operator: Click here to enter text.

Aircraft manufacturer, model and series, and registration number: Click here to enter text.

Operator’s Statement of intent to use the following navigation specifications in operations:

RNP APCH (LNAV)

(LNAV/VNAV)

(LP)

(LPV)

RNAV 1

RNAV 2

RNP 1

RNP 2

OTHER: Click here to enter text.

Date when application received by LV CAA: Click here to enter text.

Date when operator intends to begin PBN operations: Click here to enter text.

Is the LV CAA notification date appropriate? Yes  No

Evaluation performed by Flight Operations Inspector and Airworthiness Inspector (name, title, date): Click here to enter text.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **AIR OPS & ICAO reference** (Doc 9613,  Volume II, Part C, Chapter 5 Sections A & B) | **Operator’s reference to controlled document and its chapter** | **Inspector’s comments & follow-up** *(accepted / not accepted / status & date)* |
| **1** | **Aircraft eligibility for PBN specification not requiring specific approval**  The performance of the aircraft is stated in manufacturer documentation. | 5.3.2.2  5.3.2.3.1  GM2 CAT.IDE.A.345  GM3 CAT.IDE.A.345  GM2 CAT.IDE.H.345  GM3 CAT.IDE.H.345  GM1 NCC.IDE.A.250  GM2 NCC.IDE.A.250  GM1 SPO.IDE.A.220  GM1 SPO.IDE.H.220  GM2 SPO.IDE.H.220 |  |  |
| **2** | **Training**  Flight crew qualification and proficiency constraints should be specified in the operations manual to ensure that the training programme for relevant personnel is consistent with the intended operation. | AMC1 CAT.OP.MPA.126  5.3.2.3.2  5.3.5 |  |  |
| **3** | **Operating policies and procedures**   * Extracts from the operations manual or other documentation * Operations manual and checklists | 5.3.2.3.3  AMC1 CAT.OP.MPA.126  AMC1 NCC.OP.116  AMC1 SPO.OP.116 |  |  |
| **4** | **Maintenance practices** | 5.3.2.3.5  5.3.6 (Section A)  5.3.6 (Section B) |  |  |
| **5** | **MEL update**  Any MEL revisions necessary to address provisions for PBN operations must be approved. | 5.3.2.3.4 |  |  |
| **6** | **Operating procedures** |  |  |  |
| **6.1** | **Pre-flight planning** |  |  |  |
|  | Flight preparation for PBN operations.   * The flight crew should ensure that RNAV 1, RNAV 2, RNP 1 RNP 2, and RNP APCH routes or procedures to be used for the intended flight, including for any alternate aerodromes, are selectable from the navigation database and are not prohibited by NOTAM. * The flight crew should take account of any NOTAMs or operator briefing material that could adversely affect the aircraft system operation along its flight plan including any alternate aerodromes. * For RNP 4 operations with only GNSS sensors, a fault detection and exclusion (FDE) check should be performed. | AMC1 CAT.OP.MPA.175  AMC3 NCC.OP.116  AMC1 SPO.GEN.107 |  |  |
|  | Verify that the aircraft and crew are approved for RNP APCH operations to LNAV, and/or LNAV/VNAV and/or LP and/or LPV minima. | 5.3.4  (LNAV/VNAV)  5.3.4.1  (LP and/or LPV) |  |  |
|  | Verify receiver autonomous integrity monitoring (RAIM) and/or space-based augmentation system (SBAS) availability. | 5.3.4.1.3  (Section A)  5.3.4.2  (Section A)  5.3.4.3  (Section B)  AMC1 CAT.OP.MPA.175 |  |  |
|  | Database suitability and currency   * The flight crew should check that any navigational database required for PBN operations includes the routes and procedures required for the flight. * The database validity (current AIRAC cycle) should be checked before the flight. * The flight crew should follow procedures established by the operator to ensure the accuracy of navigation data, including the suitability of navigation facilities used to define the routes and procedures for the flight. * Conditions on the use of expired database should be established. | 5.3.4.1.1  (Section A)  5.3.4.1.2 a)  (Section A)  5.3.4.2.1  (Section B)  5.3.4.2.2  (Section B)  AMC2 CAT.OP.MPA.126 (a)  AMC2 CAT.OP.MPA.175  AMC2 NCC.GEN.106  AMC2 SPO.GEN.107 |  |  |
|  | Selection of alternate aerodromes with instrument approach procedures relying on GNSS. | AMC1 CAT.OP.MPA.182  GM1 CAT.OP.MPA.182  AMC1 NCC.OP.153  GM1 NCC.OP.153  AMC1 SPO.OP.152  GM1 SPO.OP.152 |  |  |
|  | The active flight plan, if applicable, should be checked by comparing the charts or other applicable documents with navigation equipment and displays.  Verify the FPL:  “R” and “B” (LPV only) should appear in field 10 and PBN/S1 or PBN/S2 (LNAV/VNAV only) in field 18. | AMC2 CAT.OP.MPA.126 (a)  5.3.4.1.1  (Section A)  5.3.4.2.1  (Section B) |  |  |
|  | * The flight crew should check that the navigation aids critical to the operation of the intended PBN procedure are available. * The flight crew should confirm the navigation aids that should be excluded from the operation, if any. * An arrival, approach or departure procedure should not be used if the validity of the procedure in the navigation database has expired. * The flight crew should verify that the navigation systems required for the intended operation are operational. | AMC2 CAT.OP.MPA.126 (a) |  |  |
| **6.2** | **Departure** |  |  |  |
|  | * The flight crew should check that the indicated aircraft position is consistent with the actual aircraft position at the start of the take-off roll (aeroplanes) or lift-off (helicopters). * Where GNSS is used, the signal should be acquired before the take-off roll (aeroplanes) or lift-off (helicopters) commences. * Unless automatic updating of the actual departure point is provided, the flight crew should ensure initialisation on the runway or FATO by means of a manual runway threshold or intersection update, as applicable. | AMC2 CAT.OP.MPA.126 (b)  AMC2 NCC.OP.116 |  |  |
| **6.3** | **Prior to commencing procedure (arrival and approach)** |  |  |  |
|  | Verify that the correct procedure is loaded. | 5.3.4.3.1  (Section A)  5.3.4.4.1  (Section B)  AMC2 CAT.OP.MPA.126 (c) |  |  |
|  | Cross-check the chart with the RNAV system display. | 5.3.4.3.2  (Section A)  5.3.4.4.1  (Section B) |  |  |
|  | Verify the GNSS sensor in use (only multi-sensor systems). | 5.3.4.3.3  (Section A)  AMC2 CAT.OP.MPA.126 (e) |  |  |
|  | * Input the barometric altimeter setting (only LNAV/VNAV requires barometric input). * Consideration of the effect of aerodrome temperature (temperature compensation). | 5.3.4.3.4  (Section A)  AMC2 CAT.OP.MPA.126 (d) |  |  |
|  | Perform a RAIM availability check if ETA is more than 15 minutes different from the FPL ETA (only for ABAS). | 5.3.4.3.5  (Section A) |  |  |
|  | Management of navigation database   * For RNAV 1, RNAV 2, RNP 1, RNP 2, and RNP APCH, the flight crew should neither insert nor modify waypoints by manual entry into a procedure (departure, arrival or approach) that has been retrieved from the database. * For RNP 4 operations, the flight crew should not modify waypoints that have been retrieved from the database. * Do not modify the flight plan in the RNAV system after ATC heading assignment until a clearance is received to re-join the route or a new clearance is confirmed. Manual entry of coordinates within the terminal area is not permitted. “Direct to” clearances accepted up to IF, provided that the resulting track change at the IF does not exceed 45 degrees. * The lateral and vertical definition of the flight path between the FAF and the missed approach point (MAPt) retrieved from the database should not be revised by the flight crew. | AMC3 CAT.OP.MPA.126  AMC4 NCC.OP.116  AMC3 SPO.OP.116  5.3.4.3.6  (Section A)  5.3.4.4.2  (Section B) |  |  |
|  | Do not modify the final approach segment. | 5.3.4.3.7  (Section A) |  |  |
|  | Use VTF to respect ATC clearances when appropriate | 5.3.4.4.3  (Section B) |  |  |
| **6.4** | **During procedure** |  |  |  |
|  | Establish the aircraft on the final approach course before starting descent. | 5.3.4.4.1  (Section A)  5.3.4.5.4  (Section B) |  |  |
|  | Verify that the approach mode is activated 2 NM prior to FAF/FAP. | 5.3.4.4.2  (Section A)  5.3.4.5.3  (Section B) |  |  |
|  | Use an appropriate display. | 5.3.4.4.3  (Section A)  5.3.4.5.5  (Section B) |  |  |
|  | Alerting and abort  Discontinue the approach if:   * the navigation display is flagged invalid; * loss of integrity alert; * loss of integrity alerting function prior to the FAF; * Flight technical error (FTE) is excessive. | AMC6 CAT.OP.MPA.126  AMC6 NCC.OP.116  AMC6 SPO.OP.116  5.3.4.4.5  (Section A) |  |  |
|  | Displays and automation   * Follow the route centre line within 0.5/0.15/0.5 NM. * For RNAV 1, RNP 1, and RNP APCH operations, the flight crew should use a lateral deviation indicator, and where available, flight director and/or autopilot in lateral navigation mode. * Selection of displays. | 5.3.4.4.6  (Section A)  AMC4 CAT.OP.MPA.126  AMC4 NCC.OP.116  AMC4 SPO.OP.116 |  |  |
|  | If baro-VNAV is used, follow vertical path ±22 m (±75 ft). | 5.3.4.4.7  (Section A) |  |  |
|  | Execute a missed approach if the lateral or vertical deviations exceed the limits above (LNAV and LNAV/VNAV) or if excessive deviations are encountered and cannot be corrected in time (LP and LPV). | 5.3.4.4.8  (Section A)  5.3.4.5.9  (Section B) |  |  |
|  | Vectoring and positioning   * ‘Direct to’ clearances may be accepted to the IF provided that it is clear to the flight crew that the aircraft will be established on the final approach track at least 2 NM before the FAF. * ‘Direct to’ clearance to the FAF should not be acceptable. * ‘Direct to’ clearances to a fix that immediately precede an RF leg should not be permitted. * For parallel offset operations en route in RNP 4 and A-RNP, transitions to and from the offset track should maintain an intercept angle of no more than 45° unless specified otherwise by ATC. | AMC5 CAT.OP.MPA.126  AMC5 NCC.OP.116  AMC5 SPO.OP.116 |  |  |
| **6.5** | **General operating procedures** |  |  |  |
|  | Advise ATC if unable to meet the requirements for an RNP APCH | 5.3.4.5.1  (Section A)  5.3.4.6.1  (Section B) |  |  |
|  | Comply with the manufacturer’s instructions/procedures. | 5.3.4.5.2  (Section A)  5.3.4.6.2  (Section B) |  |  |
|  | If the missed approach is based on conventional means, appropriate navigation equipment must be installed and serviceable. | 5.3.4.5.3  (Section A)  5.3.4.6.3  (Section B) |  |  |
|  | Use FD or AP if available. | 5.3.4.5.4  (Section A)  5.3.4.6.4  (Section B) |  |  |
| **7** | **Contingency procedures** |  |  |  |
|  | * The flight crew should make the necessary preparation to revert to a conventional arrival procedure where appropriate. * In the event of loss of PBN capability, the flight crew should invoke contingency procedures and navigate using an alternative means of navigation. | AMC7 CAT.OP.MPA.126 |  |  |
|  |  |  |  |  |
|  | Notify ATC if unable to comply with the requirements for an RNP APCH (any problem with PBN capability). | 5.3.4.6.1  (Section A)  5.3.4.7.2  (Section B)  AMC7 CAT.OP.MPA.126 |  |  |
|  | Air-ground communications failure. | 5.3.4.6.2  (Section A)  5.3.4.7.3  (Section B)  (Doc 4444  Chapter 15,  15.3) |  |  |
|  |  | AMC7 CAT.OP.MPA.126 |  |  |
| \*All references are to the PBN manual (Doc 9613), Volume II, Part C, Chapter 5, unless otherwise indicated. | | | | |

**FOI REPORT**

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FOI NAME/SIGNATURE/DATE

**POI COMMENTS**

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POI NAME/SIGNATURE/DATE

**INFORMATION TO THE OPERATOR**

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POI NAME/SIGNATURE/DATE