



# Australian Government

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## Civil Aviation Safety Authority

Instrument number CASA 444/11

I, JOHN FRANCIS McCORMICK, Director of Aviation Safety, on behalf of CASA, make this instrument under:

- (a) subregulation 179A (1) of the *Civil Aviation Regulations 1988 (CAR 1988)*; and
- (b) regulation 11.160 of the *Civil Aviation Safety Regulations 1998 (CASR 1998)*; and
- (c) paragraph 3.1, subparagraph 12.1.1 (b) and paragraph 12A.5 of Civil Aviation Order 20.7.1B (*CAO 20.7.1B*).

**[Signed John F. McCormick]**

John F. McCormick  
Director of Aviation Safety

27 October 2011

### Instructions — RNAV (RNP-AR) approaches and departures

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#### **1 Duration**

This instrument:

- (a) commences on 31 October 2011; and
- (b) stops having effect at the end of September 2014.

#### **2 Dictionary**

A dictionary for this instrument is in Schedule 4.

#### **3 Application**

The instructions in Schedule 1 apply to an RNAV (RNP-AR) approach or departure in I.M.C. under the I.F.R.

#### **4 Instructions**

The instructions in Schedule 1 are issued.

#### **5 Exemption**

- (1) This exemption applies for the trial mentioned in Schedule 2.
- (2) Air New Zealand is exempt from compliance with subparagraph (a) (ii) of the definitions of *authorised instrument approach procedure* and *authorised instrument departure procedure* in subregulation 178 (7) of CAR 1988.

## **6 Application — approval and specification**

Section 7 applies to the conduct of the trial mentioned in Schedule 2.

## **7 Approval and specification for CAO 20.7.1B**

- (1) For the definition of *RNP-capable aeroplane* in paragraph 3.1 of CAO 20.7.1B, Airbus A320-232 aeroplanes operated by Air New Zealand on RNAV (RNP-AR) IAP and IDP are approved for area navigation (RNAV).
- (2) For subparagraph 12.1.1 (b) and paragraph 12A.5 of CAO 20.7.1B:
  - (a) the trial mentioned in Schedule 2 is an approved RNP operation; and
  - (b) the appropriate RNP containment is at least 2 times the RNP type specified in an approved aircraft's AFM for the procedure.

## **9 Conditions**

The Air New Zealand trial must be conducted in accordance with the conditions in Schedule 3.

### **Schedule 1 Instructions**

- 1 For an RNAV (RNP-AR) approach or departure, the pilot in command of the aircraft must use the authorised RNAV (RNP-AR) IAP or IDP.
- 2 The pilot in command may use an authorised RNAV (RNP-AR) IAP or IDP only when conducting an RNAV (RNP-AR) approach or departure for, and in accordance with, the Air New Zealand trial.

### **Schedule 2 Air New Zealand trial**

The Air New Zealand trial is the trial of authorised RNAV (RNP-AR) IAP and IDP that:

- (a) is described in the Air New Zealand proposal *OPS 15/56* dated 25 November 2008 and 30 January 2009 and accepted by CASA; and
- (b) complies with the conditions mentioned in Schedule 3.

### **Schedule 3 Conditions**

- 1 An RNAV (RNP-AR) approach or departure may only be conducted:
  - (a) by an approved pilot flying in a manner consistent with his or her level of training for the approach or departure being undertaken; and
  - (b) in an Air New Zealand Airbus A320-232 aircraft that is an RNP-AR-capable aeroplane for that approach or departure as identified in the AFM.
- 2 Subject to clause 3, an operation involving an RNAV (RNP-AR) approach or departure must be in accordance with the Air New Zealand proposal and this instrument.
- 3 The Air New Zealand proposal, and operations in accordance with it, may be amended only with the approval of CASA.

- 4 Subject to clause 5, an RNAV (RNP-AR) approach must be conducted at no lower than the RNAV (RNP-AR) decision altitude identified on the authorised RNAV (RNP-AR) IAP for the approach, currently RNP 0.10.
- 5 An RNAV (RNP-AR) approach must be conducted at no lower than the RNP limitation identified in the approved aircraft's AFM for the approach being undertaken.

*Note* Although the authorised RNAV (RNP-AR) IAP for the approach may permit a lower decision altitude as described in clause 4, the actual altitude must not be lower than the RNP capability of the aircraft at the time of the operation, taking into account unserviceabilities etc.
- 6 An RNAV (RNP-AR) departure must be conducted using an RNP type not less than the RNP limitation identified in the approved aircraft's AFM for the departure being undertaken.
- 7 Air New Zealand must allow CASA, on request, to attend:
  - (a) any simulator training undertaken for RNAV (RNP-AR) approaches and departures; and
  - (b) any line flight that includes an RNAV (RNP-AR) approach or departure.
- 8 Air New Zealand must ensure that all RNAV (RNP-AR) approaches and departures are monitored by its Flight Operations Quality Assurance program, which must record at least the following events:
  - (a) NAV accuracy downgrade;
  - (b) XTK error appropriate to the RNP value of the approach or departure;
  - (c) vertical deviation exceeding 75 ft below the VDEV path;
  - (d) EGPWS or TAWS warning;
  - (e) Auto Pilot disconnect;
  - (f) navigation data error that results in the flight operating outside any horizontal or vertical limits.
- 9 Air New Zealand must ensure that:
  - (a) crew utilise its Operational Occurrence Reporting system to report any concerns of issues while operating RNAV (RNP-AR) procedures; and
  - (b) it immediately tells CASA of any such reports relating to RNAV (RNP-AR) operations at an Australian airport.
- 10 Air New Zealand must immediately tell CASA of any matter concerning an authorised RNAV (RNP-AR) IAP or IDP that relates to the safety of such approaches or departures.
- 11 Before commencing an authorised RNAV (RNP-AR) IAP or IDP, the pilot in command must ensure that:
  - (a) both of the approved aircraft's GNSS receivers are operational; and
  - (b) updating of the FMS by VOR/DME is inhibited; and
  - (c) the RNP type for the approach or departure is loaded from the current approved navigation database and selected by the flight crew.

- 12 At all times during an authorised RNAV (RNP-AR) IAP or IDP, the pilot in command must ensure that:
  - (a) the approach or departure is flown by autopilot in final approach or NAV mode; and
  - (b) the approach or departure is flown in accordance with the current approved navigation database setting out that approach; and
  - (c) navigation performance scales showing the LDEV and VDEV are displayed to both pilots.
- 13 Before the trial begins for an aerodrome, Air New Zealand must give CASA a study, acceptable to CASA, of:
  - (a) the likely environmental effects of the conduct of the trial at the aerodrome; and
  - (b) the measures that would be taken by Air New Zealand to mitigate those effects.
- 14 It is a condition of the trial that each of the measures mentioned in paragraph 13 (b), that is acceptable to CASA, is complied with.

#### **Schedule 4 Dictionary**

In this instrument:

***AFM*** means aircraft flight manual.

***Air New Zealand*** means Air New Zealand Ltd of Auckland, New Zealand, Aviation Reference Number 500040.

***Air New Zealand proposal*** means the Australian Airports RNP-AR RNAV implementation proposal to CASA contained in the document titled *Air New Zealand Airbus 320-232 Implementation Australian Airports*, as amended from time to time with the approval of CASA.

***Air New Zealand trial*** means the trial mentioned in Schedule 2.

***approved aircraft*** means an RNP-capable Airbus A320-232 aeroplane operated by Air New Zealand for the purposes of the trial mentioned in Schedule 2.

***approved navigation database*** means a navigation database:

- (a) on a medium approved by the manufacturer of an approved aircraft as suitable for use with the aircraft; and
- (b) incapable of modification by the operator or flight crew of the approved aircraft in which it is installed.

***approved pilot*** means a pilot, employed by Air New Zealand, who has been trained by the approved Air New Zealand CAR 217 training and checking organisation to conduct RNAV (RNP-AR) approaches and departures in accordance with the Air New Zealand Operations Manual.

***authorised RNAV (RNP-AR) IAP*** means an RNAV (RNP-AR) instrument approach procedure designed by a certified designer under Part 173 of the *Civil Aviation Safety Regulations 1998 (CASR 1998)*, with charts clearly marked “FOR CASA APPROVED OPERATORS ONLY”.

**authorised RNAV (RNP-AR) IDP** means an RNAV (RNP-AR) instrument departure procedure designed by a certified designer under Part 173 of CASR 1998, with charts clearly marked “FOR CASA APPROVED OPERATORS ONLY”.

**DME** means distance measuring equipment.

**EPE** means the estimated navigational performance of the aircraft as displayed to the flight crew by the FMS.

**FMS** means the flight management system (of an aeroplane).

**GNSS** means the Global Navigation Satellite System, a satellite system used by the pilot on board an aircraft to determine position from satellite data.

**LDEV** means lateral deviation.

**RNAV** means an area navigation system.

**RNAV (RNP-AR) approach** means an RNAV (RNP-AR) instrument approach in I.M.C. under the I.F.R. for which authorisation is required in Australia.

**RNAV (RNP-AR) departure** means an RNAV (RNP-AR) instrument departure in I.M.C. under the I.F.R. for which authorisation is required in Australia.

**RNP** means the required navigation performance as displayed to the flight crew by the FMS.

**RNP-capable aeroplane** means an aeroplane:

- (a) that is approved for area navigation (RNAV); and
- (b) that meets the RNP capability necessary for an approved RNP operation in accordance with the aeroplane’s flight manual; and
- (c) whose FMS permits the RNP type to be selected and displayed to the flight crew.

**RNP type** means a level of navigation performance capability expressed in nautical miles and specified in the approved aircraft’s AFM to indicate the minimum navigation system requirements needed to operate in an area, on a route or in a procedure.

*Example* RNP 0.3.

**VDEV** means vertical deviation.

**XTK error** means the cross-track difference between the indicated position of the approved aircraft and the planned position as displayed to the flight crew by the FMS.