Instrument number CASA 165/14

I, GERARD JOHN CAMPBELL, Executive Manager, Operations Division, a delegate of CASA, make this instrument under regulation 179A of the *Civil Aviation Regulations 1988*.

**[Signed G.J. Campbell]**

Gerard J. Campbell
Executive Manager
Operations Division

28 July 2014

Instructions — GNSS primary means navigation (A320/A321 and A330 Jetstar aircraft)

1 Duration

 This instrument:

(a) commences on the day after registration; and

(b) expires at the end of June 2017, as if it had been repealed by another instrument.

2 Definitions

 In this instrument:

***ADIRU*** means air data inertial reference unit.

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

***approved navigation database*** means a navigation database on a medium approved by the manufacturer of the aircraft as suitable for use with the aircraft.

***CDU*** means control display unit.

***FMC*** means flight management computer.

***FMS*** means flight management system.

***FMS guided NPA***,commonly referred to as an ***overlay approach***,means any NPA that:

1. can be derived from the approved FMS navigation database; and
2. can be flown using GNSS as the primary means of navigation.

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

***GNSS primary means of navigation*** means use of the aircraft’s GNSS equipment as the only navigation equipment required to satisfy the necessary level of accuracy, integrity, continuity and availability for the intended operation.

***GPS*** means theUnited States Government satellite navigation system known as the Global Positioning System.

***IAP*** means instrument approach procedure.

***method of control*** means autopilot or flight director.

***non-precision approach*** or ***NPA*** means an approach conducted using 1 of the following:

1. RNAV (GNSS);
2. NDB;
3. VOR;
4. DGA.

***RNP*** means the required navigation performance for the commencement and continuation of an approach as displayed to the flight crew by the FMS.

***RNP-capable RNAV system*** means an area navigation system fitted to an aircraft for which the AFM for the aircraft states that it is capable of meeting RNP 0.3 (or lower, if required) requirements.

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

3 Application

 This instrument applies to the conduct of NPA procedures (excluding LLZ approaches) by Jetstar Airways Pty Ltd, Aviation Reference Number 510654 (***Jetstar Airways***), in A320/A321 and A330 aircraft.

4 Instructions

 I issue the instructions in Schedule 1.

Schedule 1 Instructions

1 GNSS primary means of navigation

 (1) In GNSS primary means of navigation*,* A320/A321 and A330 aircraft, operated by Jetstar Airways under I.F.R. may use an RNP-capable RNAV system in accordance with these instructions to conduct an FMS guided NPA using a published NPA procedure, including a related missed approach procedure.

 (2) The FMC may be used as a substitute means of navigation instead of a navigation aid where the approach is in the approved navigation database,

 including where:

(a) a NOTAM states that the underlying navigation aid is out-of-service; or

(b) the onboard navigation aid is not serviceable or not installed.

 (3) The NPA must not be flown if:

(a) the underlying navigation aid has been decommissioned; or

(b) the IAP for the navigation aid has been withdrawn.

2 Requirements

 (1) The AFM must contain a statement that the aircraft is capable of meeting the requirements for RNP 0.3 or lower, if required.

 (2) The aircraft must be operated in accordance with the manufacturer’s instructions.

 (3) The RNP-capable RNAV system must not be used as a navigation reference for flight below the lowest safe altitude/minimum sector altitude except in accordance with a published NPA procedure.

 (4) The procedure to be flown by the flight crew must be extracted from an approved navigation database.

 (5) Jetstar Airways must inform CASA if any condition, operational bulletin, airworthiness directive or AFM amendment change or affect this instrument.

3 Procedures

 (1) Jetstar Airways must ensure that flight crew are appropriately trained in the minimum equipment required for dispatch, commencement of the approach, the approach procedures and reasons to discontinue the approach.

 (2) The training syllabus for training of flight crew must be included in the Jetstar Airways approved training and checking manual.

 (3) Jetstar Airways’ policy, procedures and limitations on the use of GNSS as the primary means of navigation must be included in the Jetstar Airways’ operations manual.

 (4) For planning destination alternate minima, Jetstar Airways may base the calculation upon the second lowest of the published NPA landing minima (RNP‑AR, if authorised, not being less than RNP 0.3), plus the weather forecast tolerance.

 (5) Before dispatch, the pilot in command must ensure that if GNSS is to be used as the primary means of navigation:

(a) at least 2 FMCs, 2 multifunction CDUs, 2 GNSS receivers and 2 ADIRUs in NAV mode are operational; and

(b) a prediction of the RNP-GNSS based approach availability is obtained for RNP 0.3 operations, unless:

 (i) at least 24 satellites are in operation and available within the GPS constellation ; and

 (ii) the AFM, or documentation approved by FAA or EASA, states that ground-based predictions are unnecessary.

 (6) Where a prediction under paragraph (5) (b) indicates that the RNP may not be available:

(a) sufficient holding fuel must be carried for the duration of the period for which RNP 0.3 (or lower if required) is not available; or

(b) the flight must be planned using conventional ground-based radio-navigation aids for which the aircraft is equipped; or

(c) an alternate aerodrome must be planned for which the requirements of paragraph (a) or (b) are met.

 (7) Before commencing an FMS guided NPA, the flight crew must ensure that:

(a) at least 1 FMS, 1 multifunction CDU, 2 GPS receivers and 2 ADIRUs in NAV mode are operational and GPS Primary is displayed; and

(b) the IAP is selected by name from a current approved navigation database; and

(c) the procedure conforms to the charted procedure; and

(d) RNP 0.3 (or lower, if required) is displayed or selected in the FMS; and

(e) no modification of approach or missed approach waypoints is made except as required to modify speeds or apply cold weather corrections as applicable.

 (8) At all times during an FMS-guided NPA, the pilot in command must ensure that:

(a) the approach is flown using a method of control that, in accordance with the AFM, permits RNP 0.3 capability (or lower, if required) operations to be conducted; and

(b) the approach is flown in accordance with the current approved charted approach procedure; and

(c) an approved method is used to monitor XTK error; and

(d) at least 1 pilot monitors the XTK error; and

(e) procedure centrelines as depicted by the onboard equipment instrument displays are maintained; and

(f) for normal operations, XTK error is limited to the lesser of:

 (i) 1 times the RNP to a maximum of 0.3 nm; or

 (ii) the navigation performance scale limits.

 (9) The pilot in command must ensure that the FMS guided NPA is discontinued if:

(a) the navigation of the aircraft exceeds the manufacturer’s stated limits for the RNP 0.3 capability (or lower, if required); or

(b) an alert is displayed indicating that the navigation system cannot meet the manufacturer’s stated limits for the RNP 0.3 capability (or lower, if required); or

(c) an XTK error alert is annunciated; or

(d) if the manufacturer does not provide a means of XTK error alerting — the XTK error is greater than 1 times the RNP to a maximum of 0.3 nm.