I, BRUCE ROBERT GEMMELL, Deputy Chief Executive and Chief Operating Officer, a delegate of CASA, make this instrument under regulation 179A of the Civil Aviation Regulations 1988 (CAR 1988).

[Signed B. Gemmell]

Bruce Gemmell
Deputy Chief Executive and
Chief Operating Officer

12 April 2005

Instructions — Trial use of RNAV (GNSS) by Virgin Blue Airlines

1 Duration
This instrument:
(a) commences on the day after it is registered on the Federal Register of Legislative Instruments; and
(b) ceases to have effect at the end of September 2005.

2 Revocation
CASA 88/05 is revoked.

3 Application
This instrument applies to the conduct, on a trial basis, of RNAV (GNSS) approaches by Virgin Blue Airlines Pty Ltd (Aviation Reference Number 567591) using:
(a) the aircraft mentioned in Schedule 1; and
(b) Dual Smiths Industries 4MCU Flight Management Computer Systems (P/N 171497-05-01) with software version 10.5 or a later version approved in writing for use in the trial by the Head of OFCLS.

4 Instructions
I issue the instructions in Schedule 2.

5 Definitions
In this instrument:

ANP means the actual navigation performance of the aircraft as displayed to the flight crew by the aircraft’s flight management system.
approved navigation data base means a navigation data base:

(a) published by a person approved for the purposes of paragraph 233 (1) (h) of CAR 1988; and

(b) on a medium approved by the manufacturer of the aircraft as suitable for use with the aircraft; and

(c) incapable of modification by the operator or flight crew of an aircraft in which it is installed.

FMS means the aircraft’s flight management system.

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.

ground based navigation aid means:

(a) non-directional beacon (NDB); or

(b) VHF omni-directional radio range (VOR); or

(c) distance measuring equipment (DME).

Head of OFCLS means the person holding, or for the time being occupying and performing the duties of, the position in CASA currently described as Head of Operational and Flight Crew Licensing Standards.

operator means Virgin Blue Airlines Pty Ltd.

RNAV (GNSS) means an instrument approach using only lateral navigation information from the GNSS.

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

trial aircraft means an aircraft mentioned in Schedule 2 and using the equipment mentioned in that Schedule.

XTK means the cross-track error as displayed to the flight crew by the FMS.

Schedule 1  List of aircraft and equipment

Boeing 737-700 and 737-800 Aeroplanes

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Schedule 2 Instructions for Virgin Blue Airlines Trial

1 **Trial use of GNSS for RNAV (GNSS) approaches**

1 Instead of complying with the instructions set out in instrument CASA 112/03 and published in AIP GEN 1.5, paragraph 8.5.4, the flight crew of a trial aircraft operating under the I.F.R. may use GNSS in accordance with these instructions as a supplemental navigation system for a published RNAV (GNSS) approach, including a related missed approach procedure.

2 During the period of the trial, the operator must, at intervals not exceeding 3 months, report to CASA:
   (a) the number of RNAV (GNSS) approaches conducted by trial aircraft; and
   (b) all occurrences of UNABLE REQ NAV PERF — RNP messages during RNAV (GNSS) approaches conducted by those aircraft; and
   (c) any other anomalies related to the conduct of RNAV (GNSS) approaches by those aircraft.

3 The trial reporting requirements do not affect any other obligation to report incidents or accidents that occur during the RNAV (GNSS) approach.
4 The operator must provide a copy of this instrument to each member of the flight crew before he or she participates in the trial.

2 Procedures for conducting RNAV (GNSS) approaches

1 Before departure, the pilot in command of a trial aircraft must plan for an instrument approach at the destination or alternate aerodrome, using a ground based navigation aid. RNAV (GNSS) approach must not be used to satisfy any planning requirements for alternate aerodromes.

2 Before commencing a RNAV (GNSS) approach in accordance with these instructions, the pilot in command must ensure that:
   (a) at least 1 of the aircraft’s GPS receivers is operational; and
   (b) updating of the FMS by VOR and DME is inhibited; and
   (c) the RNAV (GNSS) approach is loaded from the current approved navigation data base; and
   (d) a RNP value of 0.15 (the RNP tolerance) is entered into the FMS.

3 The pilot in command must not carry out a RNAV (GNSS) approach in controlled airspace unless he or she has obtained an air traffic control clearance to do so.

3 Specific procedures for RNAV (GNSS) approach with Navigation Performance Scales

1 At all times during a RNAV (GNSS) approach commenced in accordance with these instructions, the pilot in command must ensure, if the FMS includes navigation performance scales, that:
   (a) the approach is flown by autopilot in LNAV mode; and
   (b) the approach is flown in accordance with the current approved navigation data base setting out that approach; and
   (c) navigation performance scales showing the ANP are displayed to both pilots.

2 The pilot in command must ensure that the RNAV (GNSS) approach is discontinued, if:
   (a) the displayed ANP value exceeds 0.15; or
   (b) the message UNABLE REQ NAV PERF — RNP is displayed; or
   (c) the navigation performance scales indicate that the aircraft is outside the RNP tolerance.

4 Specific procedures for RNAV (GNSS) approach without Navigation Performance Scales

1 At all times during a RNAV (GNSS) approach commenced in accordance with these instructions, if the FMS does not include navigation performance scales the pilot in command must ensure that:
   (a) the approach is flown by autopilot in LNAV mode; and
   (b) the approach is flown in accordance with the current approved navigation data base setting out that approach; and
(c) at least 1 pilot has a navigation display set to a 10 mile map scale; and
(d) ANP and XTK are displayed to the pilot not flying the aircraft.

2 The pilot in command must ensure that the RNAV (GNSS) approach is discontinued, if:

(a) the displayed ANP value exceeds 0.15; or
(b) the message UNABLE REQ NAV PERF — RNP is displayed; or
(c) the displayed XTK value exceeds 0.1; or
(d) magenta trackline has deviated to the left or right tip of the aircraft symbol on the navigation display set to a 10 mile map scale.