



WELLINGTON NEW ZEALAND

PURSUANT to Section 28 of the Civil Aviation Act 1990

I, HARRY JAMES DUYNHOVEN, Associate Minister of Transport,

HEREBY MAKE the following ordinary rules.

SIGNED AT Wellington

This *4th* day of *November* 2003

by HARRY JAMES DUYNHOVEN

Associate Minister of Transport

Civil Aviation Rules
Part 19, Amendment 5
Transition Rules
Docket 2/CAR/9

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Amendment objective

The objective of Amendment 5 to Rule Part 19 is to prescribe conditions for the use of Global Positioning System (GPS) derived distance information during a precision instrument approach.

Extent of consultation

A petition for rulemaking was received from a New Zealand based importer of aircraft on 5 February 2002.

The Civil Aviation Authority in consultation with the Civil Aviation Industry Rules Advisory Group (CIRAG) elected not to form a Technical Study Group. Notification and request for comments to the petition to amend the rules was published in the April 2002 edition of the Civil Aviation Rules Register Information Leaflet.

One comment was received in response to the CARRIL notice. The comment related to training issues outside the objective of this amendment.

As there are no issues in this rule proposal that relate to the transportation of hazardous substances as defined in section 2 of the Hazardous Substances and New Organisms Act 1996, the Environmental Risk Management Authority was not consulted.

A Notice of Proposed Rulemaking, NPRM 03-01, containing the proposed rule amendment was issued for public consultation under Docket 2/CAR/9 on 5 December 2002.

The publication of this NPRM was notified in the Gazette on 5 December 2002 and advertised in the daily newspapers in the five main provincial centres on 7 December 2002. The NPRM was published on the CAA web site and mailed to eight identified stakeholders including representative organisations who were considered likely to have an interest in the proposal.

A typographical omission in the NPRM notification that was published in the five daily newspapers on 7 December 2002 required the NPRM to be re-notified in a special CARRIL publication on 16 December 2002, and in the five daily newspapers on 21 December 2002, as well as the Gazette on 18 December 2002. This together with the onset of the

Christmas holiday period gave reason to extend the consultation period by eighteen days, closing on 31 January 2003.

In total a period of 57 days was allowed for comment on the proposed rule.

The consultation period was further extended to 28 February 2003 following a request for an extension from an industry participant.

Summary of comments

Three written submissions were received on the NPRM. One from an aviation consultant, one from an industry association and one from a Part 121 operator.

After consideration of the submissions, changes were made to the proposed rule amendments to —

- clarify the meaning of the term GPS database; and
- clarify the rule provision to allow navigation systems (including multi-sensing systems) to be operated in conjunction with GPS equipment when using GPS derived distance information; and
- clarify the need for receiver autonomous integrity monitoring (RAIM) within the preceding 10 minutes of using GPS derived distance information.

The rule as amended was then referred to Parliament's Regulations Review Committee before being signed by the Associate Minister of Transport.

Examination of comments

Comments may be examined by application to the Docket Clerk at the Civil Aviation Authority between 8:30 am and 4:30 pm on weekdays, except statutory holidays.

Insertion of Amendments

The amendments to the rules in this Part are reflected by the revocation of the existing rule and the insertion of the amended rule.

Effective date of rule

Amendment 5 to Part 19 comes into force on Friday 12 December 2003.

Availability of rules

Civil Aviation Rules are available from–

CAA web site: <http://www.caa.govt.nz/>

Freephone: 0800 GET RULES (0800 438 785)

Part 19 Amendments

Subpart D — IFR Operations: GNSS

Rule 19.213 is revoked and the following new rule is inserted:

19.213 GPS derived distance information

(a) A pilot-in-command of an aircraft operating under IFR using GPS equipment must not use GPS derived distance information if RAIM is unavailable and has been unavailable for the preceding 10 minutes.

(b) The pilot-in-command must, when using GPS derived distance information in a position report, state the distance as a *GPS distance* relative to a specified reference point that is contained in the GPS database.

(c) The pilot-in-command must, when using GPS derived distance information on an ILS/DME or LLZ/DME instrument approach procedure, ensure —

- (1) that the GPS distance information is based on the co-ordinates of the DME that is associated with the current published instrument approach procedure; and
- (2) that current data for the DME co-ordinates is permanently stored in the GPS database.

Consultation details

(This statement does not form part of the rules contained in Part 19. It provides detail of the consultation undertaken in making the rules).

Notice of Proposed Rulemaking

To provide public notice of the intention to make a rule and the opportunity for comment on the proposed new rules for GPS derived distance information, a Notice of Proposed Rulemaking NPRM 03-01 was issued under docket number 2/CAR/9 on 5 December 2002.

Summary of comments on Docket Number 2/CAR/9, NPRM 03-01

There were three respondents to the publication of NPRM 03-01:

Aviation Advisers made the following comments:

The GPS derived distance information remain valid for 10 minutes after the last RAIM warning. After this time the distance information degrades to a value that may take the aircraft beyond airspace design limitations. This is currently reflected in all NZCAA issued GPS Flight Manual supplements. The rationale for the 10 minute limitation is contained in a risk analysis model developed by Queensland University.

It is difficult to substantiate and unreasonable to require “an up-to-date” database to be used when all that is needed is current data.

CAA response: It is agreed that GPS derived distance information remains accurate for up to 10 minutes after a RAIM warning occurs. The amended wording of 19.213(a) contained in the NPRM has been removed and wording similar to the existing wording reinstated to reflect this.

An “up-to-date” database contains the latest amended data for all facilities, including those not used by the operator. The cost of such an updating service may be significant without any gain in useful information required by the operator. This is different to “current data” where data that is stored in the GPS database for a facility is consistent with the information published in the latest aeronautical charts yet no amendments have been made to the GPS database for some time. The wording contained in the current proposal for 19.213(c)(2) has been

retained, and reference made to “up-to-date database” in 19.213(b) has been removed.

Aviation Industry Association advised that after consulting with their Air Transport and Flight Training Divisions, they did not have any problems with the proposal.

CAA comment: The CAA notes the general support for this rule proposal from the AIA.

Air New Zealand Ltd made a substantial submission covering the following points —

(a) Assurance was needed that the term “GPS database” would not, at some later point in time, be interpreted to mean the database must be resident in the GPS equipment. The implications of this occurring would in their view restrict aircraft employing multi-sensing navigational systems, such as Flight Management Systems (FMS), from using GPS derived distance information.

(b) Did the proposed rule prohibit multi-sensing navigational systems from being used in conjunction with GPS derived distance information, while a stand-alone GPS providing GPS derived distance information may be used in conjunction with other primary or sole means navigation systems?

CAA response:

(a) The term “GPS database” means an electronic memory as contained in the Glossary of 19.203. No reference is made in the definition as to where the database must be located. This database is not required to be resident in the GPS equipment, but may be a database shared by other navigational systems and resident in another location such as a FMS. The essential requirement is that the database contains current data for the co-ordinates of the DME that is associated with the precision approach.

(b) The rule proposal made reference to GPS equipment that was being used for primary means or sole means navigational purposes when deriving GPS distance. The wording of this rule has been amended to remove reference to GPS equipment being used for primary or sole

means navigation, and thereby making the requirement that whenever GPS is being used to derive distance information, the RAIM requirements apply.