

GPS and RNAV Flight Planning

As New Zealand's airspace evolves to accommodate more efficient PBN procedures, accurate flight planning data is becoming ever more important.

Anomalies in flight plans can heap unnecessary work on already-busy air traffic controllers. Such errors are likely to complicate matters for ATC, as Performance Based Navigation (PBN) ushers in a new era of air traffic management.

"Globally, air navigation system providers are looking to automation and real time information-sharing as ways of reducing the chance of human error, and in the pursuit of greater efficiency," says John Wilson, former Airways specialist.

But to harness that potential, Airways needs to have confidence that the flight planning data it is receiving is accurate.

To 'G' or not to 'G'

"The data that we have seen strongly suggests that a number of pilots have been listing GPS in their IFR flight plans without the required approval," says Steve Kelly, CAA Navigation Systems and Project Specialist.

"Filing 'G' in item 10 of the flight plan information isn't just a simple statement of 'Yes, I've got GPS on board the aircraft.' Item 10 is a declaration of your approved navigational capabilities and that information allows air traffic control

Flight plan for a Beechcraft Duchess equipped with GPS approved for IFR enroute and terminal operations, with approved pilots and an RNP 1 approval.

to coordinate their air traffic management picture," says Steve.

Note 1 in AIP New Zealand ENR 1.10 – 10 states, "Inclusion of the letter G indicates that an aircraft meets the conditions and requirements for the use of GNSS (GPS) equipment".

"Before you can specify GPS in the flight plan" continues Steve, "you need to have a GPS that's serviceable, approved for use in an IFR environment, and your licence must have a GPS endorsement."

RNAV Specification

To correctly indicate PBN capability in a flight plan, you need to supply two 'field' elements:

- » Field 10(a) *Equipment and Capabilities* requires the entry of 'R' denoting PBN capability; **and**
- » Field 18 *Other information* requires the entry of a PBN data set. This is the field identifier PBN, immediately followed by a sequence of applicable PBN capability descriptors.

"If only one of these field elements is present in a flight plan," explains John Wilson, "SkyLine (the air traffic computer system) will process the flight as though it has no PBN capability."

The consequence if the plan does not contain both elements will be that ATC will issue only conventional clearances for instrument flight plans (IFPs). If the pilot in command then queries the clearance and requests a PBN IFP, there may be a delay before a new clearance can be issued.

"Air traffic control is not required to police a flight's compliance with PBN specifications," continues John.

"On the flip side, if a flight plan indicates a PBN capability which the flight does not actually have (or have approval for), ATC will issue a clearance for a procedure, the requirements of which cannot be complied with. It's the pilots' responsibility to ensure that the applicable requirements are met, both in terms of flight planning and acceptance of ATC clearances," says John. ■

Part 19 Subpart D – IFR Operations: GNSS

Following feedback on a discussion document published in February 2016, a proposed update to the rules relating to GNSS IFR will be published soon as an NPRM. To receive an email when this is published, subscribe to our notification service, www.caa.govt.nz/subscribe.