



CAMEROON CIVIL AVIATION AUTHORITY – DIRECTION OF AVIATION SAFETY		
MANUAL	REF	DSA.AOC.MAN.002
PERFORMANCE BASED NAVIGATION OPERATIONAL APPROVAL HANBOOK	ED	01 DU 01/11/2014
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Chapter 9 RNP APCH

9.1 General

RNP APCH is the general ICAO designator for PBN approach procedures that are not Authorization Required operations.

As GNSS fulfils the basic requirement of RNP for on-board performance and monitoring, both RNAV (GNSS) and SBAS LPV procedures are types of RNP APCH operations.

RNP APCH procedures will be identified as:

- RNP APCH – LNAV
- RNP APCH – LNAV/VNAV (where a vertical guidance system is used)
- RNP APCH – LPV (Localiser Performance with Vertical Guidance)
- RNP APCH – LP (SBAS approach where vertical guidance is not available)

As the PBN Manual has yet to be amended to include navigation specification for LPV approaches this Chapter currently only deals with RNP APCH – LNAV procedures.

9.2 Characteristics

The main characteristics of RNP APCH LNAV operations are:

- IAL chart tiled RNAV (GNSS)
- Approach path constructed as series of straight segments
- Descent to an MDA which is published as an LNAV minima
- Can be flown using basic GNSS (TSOC129a) equipment or RNP 0.3 capable aircraft
- Obstacle clearance lateral tolerances not based on RNP value
- Vertical flight guidance (e.g. Baro-VNAV) may be added

9.3 Flight procedure design

Although RNAV (GNSS) approach procedures are designated in the PBN concept as RNP APCH – LNAV procedures there has been no change to the method of procedure design which is in accordance with PANS-OPS RNAV_(GNSS) design criteria.

Instrument approach charts continue to include RNAV_(GNSS) in the title, and descent is made to a minimum descent altitude which is shown as an LNAV minimum, or LNAV/VNAV where vertical guidance is available.





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RNAV (GNSS) procedure design criteria is not currently based on an RNP requirement but on the performance capability of a basic TSO C129a GPS receiver. However it is considered that an aircraft with RNP 0.3 capability has at least equivalent performance and a number of States have authorised RNAV (GNSS) operations based on RNP 0.3 capability.

The RNAV (GNSS) Approach plate shown in Fig 9.4 is an example of a an RNP APCH LNAV/VNAV procedure. Although there is no specific notation, this type of approach can be flown by aircraft equipped with either a stand-alone GNSS receiver or an FMS equipped aircraft with RNP 0.3 capability.

When flown as an LNAV operation, the altitude limitation at C02LS (660') applies, and descent is to an MDA of 580'. The missed approach point for this procedure is located at the runway threshold (RW 02L) and pilot action is required at this point to initiate flight plan sequencing for navigation past the MAPt for stand-alone GNSS receivers.

Note: In this example there is no missed approach turning or holding fix and a pilot-interpreted heading is flown, and therefore no track guidance is provided after the MAPt.

The 3° VPA and the on-slope altitude at C02LS in this case are advisory only (although recommended) and the flight crew responsibility is to ensure descent not lower than 660ft until passing C02LS.

If flown as an LNAV/VNAV approach, the fix and altitude limitation at C02LS is not relevant, and from the FAF at C02LF the approach is flown as a VNAV approach to the DA (530'). The MAPt in this case is not relevant



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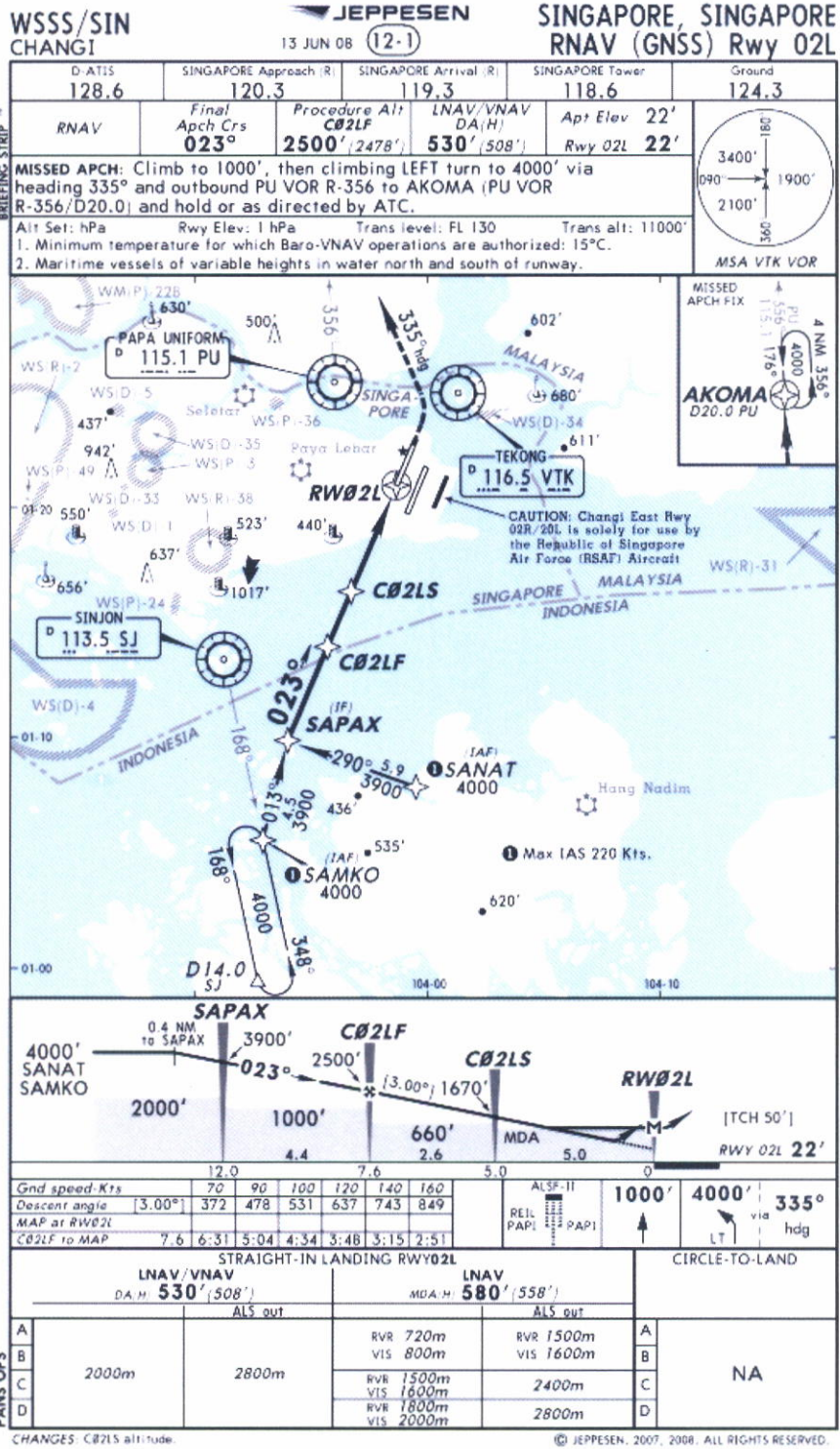


Figure 9.4 RNAV (GNSS) Approach Chart with LNAV and LNAV/VNAV Minima

