

operational procedures (e.g., GPS inoperative, use of flight director vice autopilot).

2. Curved path procedures. Some RNP approaches have a curved path, also called a radius-to-a-fix (RF) leg. Since not all aircraft have the capability to fly these arcs, pilots are responsible for knowing if they can conduct an RNP approach with an arc or not. Aircraft speeds, winds and bank angles have been taken into consideration in the development of the procedures.

3. RNP required for extraction or not. Where required, the missed approach procedure may use RNP values less than RNP-1. The reliability of the navigation system has to be very high in order to conduct these approaches. Operation on these procedures generally requires redundant equipment, as no single point of failure can cause loss of both approach and missed approach navigation.

4. Non-standard speeds or climb gradients. RNP AR approaches are developed based on standard approach speeds and a 200 ft/NM climb gradient in the missed approach. Any exceptions to these standards will be indicated on the approach procedure, and the operator should ensure they can comply with any published restrictions before conducting the operation.

5. Temperature Limits. For aircraft using barometric vertical navigation (without temperature compensation) to conduct the approach, low and high-temperature limits are identified on the procedure. Cold temperatures reduce the glidepath angle while high temperatures increase the glidepath angle. Aircraft using baro VNAV with temperature compensation or aircraft using an alternate means for vertical guidance (e.g., SBAS) may disregard the temperature restrictions. The charted temperature limits are evaluated for the final approach segment only. Regardless of charted temperature limits or temperature compensation by the FMS, the pilot may need to manually compensate for cold temperature on minimum altitudes and the decision altitude.

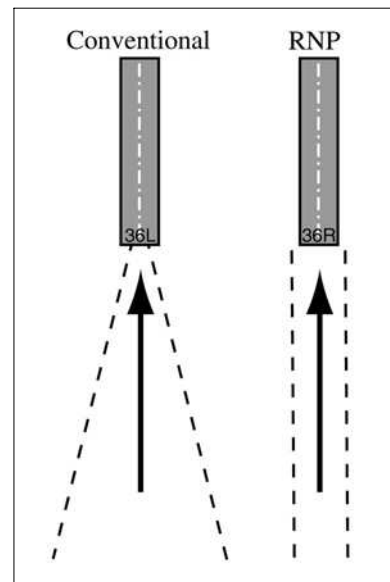
6. Aircraft size. The achieved minimums may be dependent on aircraft size. Large aircraft may require higher minimums due to gear height and/or wingspan. Approach procedure charts will be annotated with applicable aircraft size restrictions.

b. Types of RNP AR Approach Operations

1. RNP Stand-alone Approach Operations. RNP AR procedures can provide access to runways regardless of the ground-based NAVAID infrastructure, and can be designed to avoid obstacles, terrain, airspace, or resolve environmental constraints.

2. RNP Parallel Approach (RPA) Operations. RNP AR procedures can be used for parallel approaches where the runway separation is adequate (See FIG 5-4-26). Parallel approach procedures can be used either simultaneously or as stand-alone operations. They may be part of either independent or dependent operations depending on the ATC ability to provide radar monitoring.

FIG 5-4-26



3. RNP Parallel Approach Runway Transitions (RPAT) Operations. RPAT approaches begin as a parallel IFR approach operation using simultaneous independent or dependent procedures. (See FIG 5-4-27). Visual separation standards are used in the final segment of the approach after the final approach fix, to permit the RPAT aircraft to transition in visual conditions along a predefined lateral and vertical path to align with the runway centerline.