Terminal Checklist 10/18

Answers on page 28

Refer to the 12-20 RNAV (RNP) Y Rwy 7R for KMKE/MKE (Milwaukee WI) when necessary to answer the following questions:

1. A letter of authorization (LOA) from the local FSDO is required for operators to conduct this approach.
a True **b** False

2. What items are required to fly the approach?
a GPS.
b TAWS.
c An autopilot or flight director.
d RF capability unless flying from BONOT.

3. Select all that apply. A minimum altitude of 2800 ft MSL applies from_____
a CEMAX to JANSI.
b HAXUT to IRONY.
c WIDOS to IRONY.
d BONOT to IRONY.
e IRONY to WALUM.

4. Select all that apply. Which is required when flying the intermediate segment from any IF?
a Radar.
b RF legs.
c RNP 0.50.
d A maximum speed of 210 kts.

5. Which apply when flying the approach from HONUR?
a Maximum airspeed: 210 KIAS at GAUSS.
b Maximum airspeed: 220 KIAS at HONUR.
c Mandatory altitude: 6000 ft MSL at SNAPS.
d Mandatory altitude: 7000 ft MSL at HONUR.

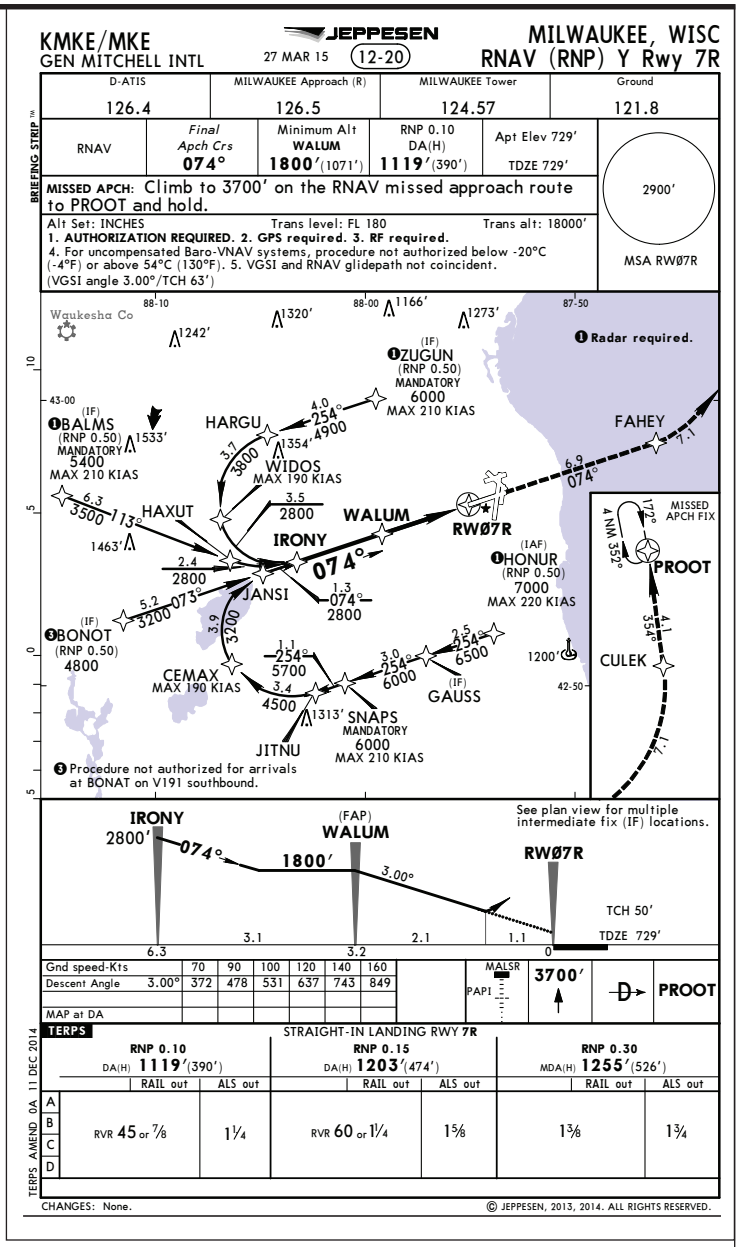
6. To fly from JITNU to CEMAX, the FMC, FD, and autopilot must be capable of commanding a bank angle up to 30º.
a True **b** False

7. When flying from HARGU to WIDOS in a category B aircraft, a maximum of 150 kts applies.
a True **b** False

8. Select all that apply. Which are true about the final approach glidepath?
a The VGSI is a PAPI on the left side of the runway.
b Both the RNAV glidepath and VGSI angle are 3.00°.
c At 120 knots, a descent rate of approximately 637 ft per minute will maintain the glidepath.
d The threshold crossing height when following the VGSI is 13 ft higher than that when following the RNAV glidepath.
e All of the above are true.

9. Select the true statement(s) regarding the landing minimums.
a The lateral TSE must be within ±0.10 nm for at least 99% of the time to descend to a DA of 1119 ft MSL.
b The lateral TSE must be within ±0.15 nm for at least 95% of the time to descend to a DA of 1203 ft MSL.
c To descend to a DA of 1119 ft MSL, the GPS equipment must change to an RNP value of 0.10 prior to reaching WALUM.
d The minimum visibility for an approach with RNP 0.10 with the ALS out is that same as that with RNP 0.15 with the RAIL out.

10. Select the true statement(s) regarding the missed approach procedure.
a An RF leg is required.
b 4 nm legs in the hold are specified.
c An RNP capability of 0.50 is required.
d A course of 074° should be flown to CULEK.
e The aircraft must reach 3700 ft prior to proceeding direct to PROOT.



Not to be used for navigational purposes

Answers to TC 10/18 questions

1. b Operators may receive approval to conduct RNP AR approaches according to the guidelines in AC 90-101A, *Approval Guidance for RNP Procedures with AR*, through operations specifications (OpSpecs), management specifications (MSpecs), or letters of authorization (LOA) issued by the local flight standards district office (FSDO) or the certificate-holding district office (CHDO).

2. a, b, c Procedural notes 2, and 3 in the Briefing Strip indicate equipment requirements for the approach. According to AC 90-101A, a class A terrain and warning system (TAWS) is required for all RNP AR procedures. The TAWS should use altitude that is compensated for local pressure and temperature effects and include significant terrain and obstacle data." RNP AR procedures with RNP values less than 0.3, or with radius to fix (RF) legs, require the use of autopilot or FD driven by the RNAV system in all cases. Although, RF is not required when flying the intermediate or final approach segments from BONOT, an RF leg is required to fly the missed approach procedure.

3. b, c According to the plan and profile views, the flight leg immediately preceding IRONY from WIDOS, HAXUT, or JANSI specifies a minimum altitude of 2800 ft MSL. At IRONY, a descent to 1800 ft MSL should be initiated.

4. c According to ballflag 1 on the plan view, radar is required from ZUGUN and BALMS IFs and from HONUR IAF, but not from BONOT IF. RF legs are not required from BONOT. A maximum speed of 210 knots is specified for all IFs except BONOT or GAUSS. Plan view notes indicate that RNP 0.50 is required to fly the procedure from all IFs and from HONUR IAF.

5. b, c According to the plan view, a minimum altitude of 7000 ft MSL and a maximum airspeed of 220 KIAS apply to HONUR. A mandatory altitude of 6000 ft MSL and a maximum airspeed of 210 KIAS apply to SNAPS.

6. b AC 90-101A states that for flying RF legs, "the flight management computer (FMC), the flight director (FD) system and autopilot must be capable of commanding a bank angle up to 25° above 400 ft AGL and up to 8° below 400 ft AGL."

7. a A table in AC 90-101A provides maximum airspeeds throughout RF legs. For initial and intermediate segments, a maximum airspeed of 150 knots is required for Category A and B aircraft and 250 knots for Category C, D, and E aircraft.

8. e According to FAA Order 8260.19E, VGSI and IAP glidepath angles/vertical descent angles should be coincidental (angles within 0.2 degrees and threshold crossing height (TCH) values within 3 ft). A procedural note is used whenever a published glidepath/descent angle or TCH is not coincident with the VGSI angle for a runway. In this case, the notes in the Briefing Strip indicate that the VGSI (a PAPI on the left side of the runway as shown in the lighting box) and the RNAV glidepath are not coincidental. The VGSI angle is 3.00° and the descent angle of the glidepath is also 3.00° as shown on the descent/timing conversion table and on the profile view. However, the TCH of the VGSI is 63 ft, while the TCH for the glidepath is 50 ft as shown on the profile view. The descent/timing conversion table also indicates a 637 ft/min descent rate at 120 knots to follow the 3.00° descent angle.

9. b, c, d The landing minimums section indicates a requirement of RNP 0.15 for a DA of 1203 ft MSL. According to AC 20-138D, Airworthiness Approval of Positioning and Navigation Systems, the navigation system lateral total system error (TSE) must be within the RNP value requirements (in this case ±0.15 nm) for at least 95% of the total flight time. According to AC 90-101A, changes to lower RNP values must be complete by the fix defining the leg with the lower value. A minimum visibility of 1 ¼ sm is applicable to an approach with RNP 0.10 with the ALS out and an approach with RNP 0.15 with the RAIL out.

10. a, b The missed approach instructions in the Briefing Strip indicate that the aircraft must climb to 3700 ft MSL while "on the RNAV missed approach route to PROOT." The plan view shows a course of 074° to FAHEY and then an RF leg to CULEK followed by a course of 354° to PROOT with 4 nm legs in the hold indicated in the missed approach inset. A procedural note will indicate if an RNP capability of less than 1.0 is required for the missed approach procedure.