

مباراة لملء بعض الوظائف الشاغرة
في المديرية العامة للطيران المدني في وزارة الأشغال العامة والنقل

لوظيفة : رئيس فرع .

مسابقة : دراسة نص والتعليق عليه (باللغة الانكليزية)

الوقت : ساعتان

The following article was published in the December, 2015 issue of *Flying* magazine:

“IMPRECISION APPROACH: IT DIDN'T LOOK GOOD, AND IT DIDN'T END WELL.

Although the term “precision approach” merely means that vertical guidance is included, it seems to imply that the approach ought to be executed with precision by both pilots and controllers.

On a December evening in 2013, a Cessna 310 carrying a pilot, 60, and his two daughters, 17 and 20, crashed while executing a missed approach at Jacksonville Executive (CRG) in Florida. The pilot filed an instrument flight plan, but declined the specialist's offer of a weather briefing because, as he said, the weather “looked good”. At the time, CRG was reporting a 400-foot overcast and 2 miles visibility in mist.

Darkness was almost complete when the 310 approached Jacksonville. The approach controller gave the pilot the freshly updated ATIS calling for calm winds, 400-foot ceiling and 1.5 mile visibility, and cleared him to descend to 2,000 feet. Crossing altitude at the final approach fix (FAF) is 1,900 feet. When the 310 was 7 miles from the FAF, the controller instructed the pilot to turn to a heading of 250 degrees and to maintain 2,000 feet until established on the localizer, and cleared him for the ILS approach. A minute later, he handed the flight off to CRG Tower.

The 310 intercepted the localizer about 12 nm from the airport, turning inbound a little to the left of the approach course and slowly correcting toward it. By the time he reached the FAF 5.8 nm from the runway, however, he had crossed the localizer and drifted to the right of center by more than three-quarters of a mile, or three times the half-width of the localizer course. He then corrected to the left, regained the centerline about 2 miles from the runway, overshot widely, and then corrected again.

His altitude control was no better. Although the clearance called for remaining at 2,000 feet until established, he was at 1,700 when he first crossed the localizer about 3 miles outside the FAF. He passed abeam the FAF 900 feet low, or nearly three times the glideslope half-height, and continued to descend until he triggered a low altitude alert in the tower. The local controller told the pilot to check his altitude. He calmly acknowledged that he was at 600 feet, corrected briefly upward, and continued inbound as his altitude fluctuated randomly between 600 and 900 feet.

Despite the unpromising appearance of the approach, the 310 – somewhat like the broken clock that is right twice a day – was on the localizer and on the glideslope when, about a mile short of the runway, the pilot declared a missed approach.

The published procedure for the miss is a straight-ahead climb to 700 feet (the airport elevation is 42 feet) followed by a right turn to 180 degrees while continuing to climb to 1,900 feet. In fact, however, controllers often ordered a left turn to 280, and that is what the tower controller, on instructions from Approach, did. The tower controller did not specify an altitude.

From its position well short of the missed approach point, the 310 began a climbing left turn. It turned through 280 to a heading of 180 or so, and then, from an altitude of 900 feet, dropped almost vertically into a pond in a housing development about a mile south of the airport. All three aboard perished.

The National Transportation Safety Board attributed the accident to loss of control due to spatial disorientation and lack of instrument proficiency. There were no indications of mechanical or instrumentation problems, or of pilot incapacitation.

The pilot had over 1,600 hours. He had had an instrument rating since 2002 and had gained his multiengine rating in 2007.

The airplane, a well-maintained R model with an EFIS panel, certainly had an autopilot with, at the very least, the ability to track a localizer. Either it was not available for some reason or the pilot chose not to use it. That the approach was unstabilized cannot have escaped him; perhaps that is why he decided to abort even before reaching the missed approach point.

The pilot may have been confused by the instruction to turn left to 280 degrees. For one thing, it was not what he expected, assuming that he studied the approach plate before beginning the approach. But how, exactly, was he to interpret the instruction? Was he to turn immediately, as he did? Turn after crossing the MAP? Climb to 700 feet straight ahead and then turn? Climb to 1,900 feet and then turn?

The last seems the least likely option, and yet the NTSB report, after stating that there was no requirement for the controller to provide an altitude with the new clearance, says that “the pilot would be expected to climb to the altitude of the published missed approach and then turn to the alternate heading that was provided by the controller.” Contrarily, an interview record in the accident docket refers to “the requirement for an alternate missed approach to include an altitude.”

In interviews 10 days after the accident, the Jacksonville Tracon supervisor told accident investigators that he found it “shocking” that no altitude had been included with the missed approach clearance; but since the pilot did turn and did climb, the lack of a specified altitude seems not to have been a factor in the loss of control unless it distracted the pilot by obliging him to refer anew to the approach plate. The 280 heading was customarily accompanied by an altitude of 3,000 feet; the approach controller said that he had assumed the tower controller

would supply it, but the tower controller said that he did not supply it because it was his practice to pass on just what the approach controller said to him.

Neither the tower controller nor the approach controller had observed the 310's difficulty in capturing the localizer and glideslope. The approach controller said if he had, and if he had been in communication with the aircraft, he would have asked the pilot whether he was still receiving the localizer – a polite hint – and, if he still - failed to intercept, he would have cancelled the approach and sent the pilot around for another try. The tower controller, who was able to follow the approach on a radar repeater, said that, apart from the single low altitude alert, he did not recall anything “remarkable” about it. He was not concerned about the out-of-tolerance altitudes, he said, because the approach course is free of obstructions.

Fog was general that night, and precision, it seems, had taken the evening off.”

After reading the above text carefully, discuss and analyze it, making particular reference to the following:

- The point at which the controller cleared the pilot for approach.
- The point at which the controller asked the pilot to check his altitude.
- The significance of the 700 ft and the 1900 ft in the Missed Approach Procedure.
- The conditions under which controllers at CRG would ask pilots to turn left to 280 instead of right to 180 during a Missed Approach Procedure.
- Whether the ATC could have played a more positive role in the accident avoidance.
- The “not concerned” statement about the out of tolerance altitude made by the Tower Controller at CRG.

بيروت في ٢٦/٤/٢٠١٧

اللجنة الفاحصة

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مسابقة: نتناول اسئلة متعددة الخيارات Multiple Choice Questions باللغة الإنكليزية

ضع دائرة (o) حول الإجابة الصحيحة

1. When an emergency is declared by an aircraft, the ATS Unit shall take action as follows:
 - a) To ascertain aircraft identification and type of emergency and the crew intention.
 - b) To continue ATC as usual.
 - c) To apply radar vectoring to final.
2. If an aircraft declared emergency, the controller shall:
 - a) Change the frequency and SSR code:
 - b) Execute some manoeuvres.
 - c) Avoid changes of frequency and SSR code and any manoeuvres.
3. Whenever unlawful interference with an aircraft is known or suspected, or a bomb threat warning has been received, the ATS Unit shall:
 - a) Stop transmitting information to aircraft concerned.
 - b) Transmit and continue to transmit information pertinent to the safe conduct of flight.
 - c) Hold all traffic under their control.
4. If a threat is received indicating that a bomb or other explosive device has been placed on board a known aircraft, the ATS Unit shall:
 - a) Inform the official authorities first.
 - b) If in direct communication, advise without delay the flight crew first.
 - c) Continue air traffic separation as normal.
5. If a threat is received indicating a bomb or other explosive device has been placed in a known aircraft, the ATC Unit shall:
 - a) Continue accepting arrivals and departures.
 - b) Give re-clearance to aircraft in flight to a requested new destination without delay.
 - c) Accept local and test flights.
6. An aircraft on ground, and subject to a bomb threat, should be advised to:
 - a) Proceed to parking position assigned.
 - b) Proceed to company base.
 - c) Vacate runway and proceed to a designated area or isolated parking.

7. For an aircraft under explosive device threat, the ATC Unit shall:
 - a) Give advice and suggestions concerning action to be taken by flight crew.
 - b) Not give advice or suggestions concerning action to be taken by flight crew.
 - c) Ask the aircraft to hold in the air.
8. Upon receipt of an advice that an aircraft is making an emergency descend through other traffic, the ATC Unit shall:
 - a) Ask the aircraft commencing descent to stop descent.
 - b) Apply vertical separation with other traffic.
 - c) Broadcast by means of appropriate radio aids information about the emergency situation.
9. The pilot in command of any aircraft receiving emergency broadcast from an aircraft in distress is expected to:
 - a) Continue approach according to its sequence.
 - b) Clear the specified areas and stand by on appropriate radio frequency for further clearance.
 - c) Divert to the alternate aerodrome.
10. Immediately after an emergency broadcast had been made, an ATC Unit shall:
 - a) Ask all aircraft receiving this broadcast to continue approach.
 - b) Forward further clearances to all aircraft involved as to additional procedures to be followed.
 - c) Accept VFR and allow them to separate in the aerodrome vicinity.
11. If an aircraft fails to indicate that it is able to receive and acknowledge transmissions, the ATC Unit shall:
 - a) Continue to provide separation between this aircraft and other aircrafts.
 - b) Apply 2000ft vertical separation between aircrafts.
 - c) Wait for supervisor's instructions.
12. An aircraft in complete communication failure is expected to set code:
 - a) A 2000
 - b) 7600
 - c) 7000
13. The horizontal radar separation minimum and/or ADS-B systems shall be 5.0 NMs except:
 - a) when approaches are made on converging tracks.
 - b) when approaches are made on divergent tracks.
 - c) when dependent and independent parallel approaches.

14. In wake of turbulence procedures the separation minima of a preceding heavy aircraft and a succeeding light aircraft is:
- a) 4 NM
 - b) 5 NM
 - c) 6 NM
15. The minimum radar separation due to wake turbulence need not apply when:
- a) both aircraft are approaching to land on different runways.
 - b) succeeding aircraft is less than 100 ft. vertically above the preceding on same track.
 - c) both aircraft are heavy.
16. The progress of an aircraft in emergency shall be monitored and the information plotted on situation display (SDD) shall be provided to:
- a) Aircraft operator.
 - b) All air traffic services which may be able to assist.
 - c) Flight information center.
17. When an identified controlled flight is observed to be in a conflicting flight path with an unknown aircraft which may constitute a collision hazard, the controller shall:
- a) inform the pilot and start avoiding unknown aircraft.
 - b) apply vertical separation with the unknown aircraft.
 - c) advise the controlled flight to start a 360° turn.
18. An aircraft departed on runway 34 following LEB2F. At what altitude should the aircraft turn to CAR VOR:
- a) 5000 ft.
 - b) 7000 ft.
 - c) 8000 ft.
19. An aircraft departed on runway 34 following BOD2D. At what altitude should the aircraft turn right to establish H 355°:
- a) 6000 ft.
 - b) 8000 ft.
 - c) 10,000 ft.
20. An aircraft was cleared for takeoff on runway 03 following LATIE. At what altitude should the aircraft turn left to intercept R 355° KAD VOR:
- a) 400 ft.
 - b) 600 ft.
 - c) 500 ft.

21. An aircraft approaching CAK VOR from LEBOR. It is 15 NM East of CAK and requested further descent (in case of NON RADAR). To which altitude can the aircraft be cleared for descent to:
- a) 9000 ft.
 - b) 10,000 ft.
 - c) 8000 ft.
22. An aircraft was cleared to fly STAR KADIA was established on R 315⁰ KAD VOR. At what DME ARC should the aircraft turn to BYBLO:
- a) 16 NM.
 - b) 20 NM.
 - c) 15 NM.
23. The minimum altitude that the aircraft can be cleared to RAMLA on KUKLAIN is:
- a) 3000 ft.
 - b) 4000 ft.
 - c) 5000 ft.
24. An aircraft flying from KUKLA to ZALKA RNAV STAR Runway 16. The minimum altitude over ZALKA is:
- a) 4000 ft.
 - b) 3000 ft.
 - c) 2000 ft.
25. An aircraft established ILS Runway 16 was unable to land due to low visibility. The missed approach point on Runway 16 is located at:
- a) 1.3 NM ILS DME.
 - b) 1.2 NM ILS DME
 - c) 1.1 NM ILS DME.
26. An aircraft established iLS Runway 03 due to bad visibility was unable to land. The missed approach point is located at:
- a) 2 NM ILS DME IKK.
 - b) 1 NM ILS DME IKK.
 - c) 3 NM ILS DME IKK.
27. The following pattern of CAK VOR is:
- a) South of CAK.
 - b) North East of CAK.
 - c) North West of CAK.
28. The outbound leg of CAK holding pattern is:
- a) 050⁰ Radial CAK.
 - b) 060⁰ Radial CAK.
 - c) 055⁰ Radial CAK.

29. The KAD VOR DME north holding pattern starts at:
- a) 7 NM Fix KAD (Right turn).
 - b) Overhead KAD (Right turn).
 - c) 4 DME KAD (Right turn).
30. The KAD south holding pattern starts at 5 NMs Fix outbound leg radial 210° KAD. What is the minimum holding altitude:
- a) 3000 ft.
 - b) 5000 ft.
 - c) 6000 ft.
31. The outbound leg of RAMLA holding pattern is
- a) R- 210° KAD.
 - b) R- 215° KAD.
 - c) R- 220° KAD.
32. An aircraft requesting to fly SVFR at night can be authorized to operate:
- a) Along the coast.
 - b) Within aerodrome traffic zone.
 - c) At distance 20 NM DME KAD.
33. Transition altitude in Beirut airspace is
- a) 12000 ft.
 - b) 13000 ft.
 - c) 14000 ft.
34. The thickness of the transition layer in Beirut airspace is
- a) 1000 ft.
 - b) 2000 ft.
 - c) 3000 ft.
35. A departing aircraft changes from local QNH to standard pressure when:
- a) Passing the transition altitude.
 - b) Passing transition level.
 - c) Passing altitude 14000 ft.
36. The final decision for takeoff other than into the wind remains with:
- a) Tower controller.
 - b) Tower supervisor.
 - c) Pilot in command.
37. IFR departures are subject to SLOT imposed by Euro control. What are the time constraints:
- a) 5 minutes before and 10 minutes after.
 - b) 10 minutes before and 5 minutes after.
 - c) 10 minutes before and 10 minutes after.

38. The minimum separation for two or more successive arrivals in a non-radar environment is:
- a) 3 minutes.
 - b) 2 minutes.
 - c) 4 minutes.
39. An aircraft may be cleared for visual approach provided:
- a) The pilot can maintain visual reference to terrain and requests the visual approach.
 - b) Controller's judgment.
 - c) Supervisor's request.
40. Aircraft A flying at FL 410 and an aircraft B flying the same track with no separation shall fly at:
- a) FL 430.
 - b) FL 440.
 - c) FL 450.
41. Two aircrafts are flying KAD VOR DME arcs and are within 35 NM from KAD. What is the minimum arc DME lateral separation:
- a) 5 NM.
 - b) 10 NM.
 - c) 15 NM.
42. The separation minima may be reduced in the vicinity of aerodromes if:
- a) When requested by the pilot in command of an aircraft.
 - b) Adequate separation can be provided by the aerodrome controller when each aircraft is continuously visible to this controller.
 - d) VMC conditions prevail in the vicinity of the aerodrome.
43. Standard clearances for departing aircraft shall contain the following items: If departures are delayed, the delayed flights shall normally be cleared in an order based on their estimated time of departure, except that deviation from this order may be made to:
- a) To give priority to national companies.
 - b) Facilitate the maximum number of departures with the least average delay.
 - c) Accommodate the pilots of aircraft.
44. An IFR flight shall not be cleared for an initial approach below the appropriate minimum altitude as specified by the State concerned nor to descend below that altitude unless:
- a) The controller has determined the aircraft's position by the use of an ATS surveillance system, and a lower minimum altitude has been specified for use when providing ATS surveillance services.
 - b) Requested by the pilot and approved by the controller.
 - c) The pilot reports VMC conditions.
45. Standard clearances for arriving aircraft shall contain the following items:
- a) All information according to current flight plan.
 - b) Aircraft identification; the assigned STAR; RWY in use; initial level; any other necessary instructions or information.
 - c) Clearance limit.

46. An IFR flight may be cleared to execute a visual approach provided the pilot can maintain visual reference to the terrain and:
- a) The reported ceiling is at or above the level of the beginning of the initial approach segment for the aircraft so cleared.
 - b) Requested by the controller.
 - c) The company standards permit.
47. For successive visual approaches, separation shall be maintained by the controller until the pilot of a succeeding aircraft reports:
- a) Able to continue approach and land in VMC.
 - b) Entering IMC conditions.
 - c) Having the preceding aircraft in sight.
48. If visual reference to terrain is established before completion of the approach procedure
- a) Pilot shall execute visual approach.
 - b) Pilot shall break the instrument approach.
 - c) the entire procedure must nevertheless be executed unless the aircraft requests and is cleared for a visual approach.
49. The approach sequence shall be established in a manner which will facilitate arrival of the maximum number of aircraft with the least average delay. Priority shall be given to:
- a) National aircraft.
 - b) Aircraft conducting test flight.
 - c) An aircraft which anticipates being compelled to land because of factors affecting the safe operation of the aircraft (engine failure, shortage of fuel, etc.).
50. When a pilot reports an ACAS resolution advisory (RA), the controller shall:
- a) Take action to resolve the conflict.
 - b) Not permit the pilot to follow the resolution.
 - c) Not attempt to modify the aircraft flight path until the pilot reports "Clear of Conflict".

بيروت في ٢٠١٧/٥/٢٦

اللجنة الفاحصة