

مباراة لملء بعض الوظائف الشاغرة

في المديرية العامة للطيران المدني في وزارة الأشغال العامة والنقل

لوظيفة: مراقب منسق

الوقت: ساعتان

مسابقة: دراسة نص و التعليق عليه (باللغة الإنكليزية)

Please read carefully the text below.

On July 7, 2015, about 11:01 eastern daylight time, a Cessna 150M, N3601V, and a Lockheed Martin F16CM, operated by the US Air Force, collided in midair near Moncks Corner, South Carolina.

The private pilot and passenger aboard the Cessna died, and the Cessna was destroyed during the collision. The damaged F-16 continued to fly for about 2 1/2 minutes, during which the pilot activated the airplane's ejection system.

The F-16 pilot landed safely using a parachute and incurred minor injuries, and the F-16 was destroyed after its subsequent collision with terrain and post impact fire.

Visual meteorological conditions (VMC) prevailed at the time of the accident. No flight plan was filed for the Cessna, which departed from Berkeley County Airport (MKS), Moncks Corner, South Carolina, about 10:57, and was destined for Grand Strand Airport, North Myrtle Beach, South Carolina. The personal flight was conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The F-16 was operating on an Instrument Flight Rules flight plan and had departed from Shaw Air Force Base, Sumter, South Carolina, about 10:20.

The pilot of the F-16 was in contact with air traffic control (ATC) and was provided radar vectors for a practice instrument approach to Charleston Air Force Base/International Airport, Charleston, South Carolina; the F-16 descended to an altitude of about 1,600 ft mean sea level as instructed by the air traffic controller. Shortly thereafter, the Cessna departed under Visual Flight Rules from MKS; the Cessna pilot was not in contact with ATC, nor was he required to be, and had not requested traffic advisory (flight-following) services.

As the Cessna continued its departure climb, the airplanes converged to within about 3.5 nautical miles (nm) laterally and 400 ft vertically, triggering a conflict alert on the controller's radar display and an aural alarm. About 3 seconds later, the air traffic controller issued a traffic advisory notifying the F-16 pilot of the position, distance, and indicated altitude of the radar target that corresponded to the Cessna, stating that the aircraft type was unknown.

When the F-16 pilot replied that he was looking for the traffic, the controller issued a conditional instruction to the F-16 pilot to turn left if he did not see the airplane. The F-16 pilot did not see the airplane and responded, asking "confirm two miles?" The controller responded, "if you don't have that traffic in sight turn left heading 180 immediately."

As the controller began this transmission, the F-16 pilot initiated a standard rate (approximately) left turn using the autopilot so that he could continue to visually search for the traffic; however, the airplanes continued to converge and eventually collided about 40 seconds after the controller's traffic advisory notifying the F-16 pilot of traffic.

The National Transportation Safety Board (NTSB) determined that the probable cause of this accident was the approach controller's failure to provide an appropriate resolution to the conflict between the F-16 and the Cessna. (Contributing to the accident were the inherent limitations of the see-and-avoid concept, resulting in both pilots' inability to take evasive action in time to avert the collision).

Discuss and analyze the role and responsibility of the two pilots and the controller in the accident presented. How could have such an accident been avoided if a SMS was adequately applied?

بيروت 2017/5/27

اللجنة الفاحصة

ضع دائرة (circle o) حول الإجابة الصحيحة

1. 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.
2. 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.
3. 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.
4. 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.).
5. Succeeding aircraft shall be cleared for approach:
 - a) When established on the ILS.
 - b) When the use of an ATS surveillance system confirms that the required longitudinal spacing between succeeding aircraft has been established.
 - c) When approaching over the initial approach fix.
6. Before providing an ATS surveillance service to an aircraft, identification should be established. For how long should the identification be maintained:
 - a) Until further notice.
 - b) Until final approach fix.
 - c) Until termination of ATS surveillance service.

7. Where SSR is used for identification by instructing the aircraft to squawk:
 - a) Standby.
 - b) IDENT.
 - c) A2000.
8. When the pilot is instructed to resume own navigation after vectoring away from the previously assigned route, the radar controller shall inform the aircraft of:
 - a) Its route and level.
 - b) Its position.
 - c) Its distance from FIR boundary.
9. Whenever practicable an aircraft should be vectored to a point from which the pilot can:
 - a) Continue according to flight plan route.
 - b) Monitor the aircraft position with reference to pilot interpreted navigation aids.
 - c) Continue his approach.
10. When vectoring an IFR flight and when giving an IFR flight a direct routing which takes the aircraft off an ATS route, the controller shall:
 - a) Issue clearances such that the prescribed obstacle clearance will exist at all times until the aircraft reaches the point where the pilot will resume own navigation.
 - b) Issue clearances such that the prescribed obstacle clearance will exist.
 - c) Issue clearance to provide separation .
11. Information that an aircraft appears likely to penetrate an area of adverse weather should be issued in sufficient time to:
 - a) Permit the pilot to remain within the Airway.
 - b) Permit the pilot to climb or descend.
 - c) Permit the pilot to decide on an appropriate course of action.
12. In vectoring an aircraft for circumnavigating any area of adverse weather, the controller should ascertain that:
 - a) The aircraft can be returned to its intended or assigned flight path within the coverage of the ATS surveillance system and, if this does not appear possible, inform the pilot of the circumstances.
 - b) The supervisor is informed.
 - c) The aircraft can fly to destination.
13. Action taken to ensure suitable separation shall cease to be based on the assumption that the aircraft had communication failure has:
 - a) Reached the fix serving the aerodrome of destination.
 - b) Still flying according to current flight plan.
 - c) Positive information is received that the aircraft has landed.

14. Assistance to a VFR flight should only be provided using an ATS surveillance system:
- a) At all times.
 - b) Upon the request or concurrence of the pilot. The type of service to be provided should be agreed with the pilot.
 - c) During night.
15. A strayed aircraft is an aircraft which has:
- a) No contact with ATC unit.
 - b) Has deviated significantly from its intended track or which reports that it is lost.
 - c) Experiencing loss of control.
16. The horizontal separation between an aircraft dumping fuel and another aircraft is at least:
- a) 10 NM.
 - b) 10 NM but not behind the aircraft dumping fuel.
 - c) 8 NM but not behind the aircraft dumping fuel.
17. Two aircraft are flying the same track based on VOR DME. Aircraft (A) has reported 10NM from VOR on R090 and aircraft (B) has reported 5NM from the same VOR flying R070 and requesting higher. When can aircraft (B) be cleared:
- a) Immediately.
 - b) When aircraft (A) is 14 NM from the VOR.
 - c) When aircraft (A) is 15 NM from the VOR.
18. When two departing aircraft are to fly on track diverging by at least 45°, what will be the required separation for lateral separation:
- a) 2 minutes
 - b) 3 minutes
 - c) 1 minute
19. If a departing aircraft is to fly through the level of the preceeding departing aircraft and both aircrafts are to follow the same track while vertical separation does not exist, what is the minimum separation required based on time:
- a) 4 minutes.
 - b) 3 minutes.
 - c) 5 minutes.
20. In which class of airspace may aircraft maintain their own separation under VMC and during the hours of day light:
- a) Class D and G.
 - b) Class E and F.
 - c) Class D and E.

21. What is the minimum separation required between take offs when the preceding aircraft is 40 KTS or more faster than the following aircraft and both aircrafts will follow the same track:
- a) 3 minutes.
 - b) 2 minutes.
 - c) 1 minute.
22. What is the longitudinal separation minima for wake turbulence based on time between a landing light aircraft behind a heavy or medium aircraft:
- a) 2 minutes.
 - b) 3 minutes.
 - c) 1 minute.
23. What is the minimum wake turbulence separation between departing light aircraft and medium aircraft taking off behind a heavy aircraft when using the same runway:
- a) 3 minutes.
 - b) 2 minutes.
 - c) 1 minute.
24. If a departing aircraft will be flown through the level of the preceding departing aircraft and both aircraft propose to follow the same track while vertical separation does not exist, what is the minimum separation required:
- a) 4 minutes.
 - b) 3 minutes.
 - c) 5 minutes.
25. When providing radar approach control service, the optimum SDD range is:
- a) 40 to 60 NM or less.
 - b) 70 to 120 NM.
 - c) 100 NM.
26. An aircraft is considered to have vacated an altitude or level when the SDD readout has changed by:
- a) 200 ft.
 - b) 300 ft.
 - c) 100 ft.
27. Under radar control, two aircraft (A) and (B) are approaching CAK from LEBOR. Aircraft (A) is at 13000 ft and flies 3 NM right offset, while (B) is at 14000 ft. When do you consider (B) clear of (A) on a left offset:
- a) 1 NM.
 - b) 2 NM.
 - c) When on the airway centerline.
28. An aircraft inbound from BALMA is flying BALMA 1N STAR. At what DME arc should the aircraft turn to the initial approach fix?
- a) 16 NM.
 - b) 15 NM.
 - c) 20 NM.

29. An aircraft is approaching OLBA from ELIKA to land. The aircraft requests an RNAV STAR for runway 16. What STAR could the aircraft be given?
- a) ELIKA1X.
 - b) ELIKAX.
 - c) ELIKA2X.
30. The missed approach procedure for OLBA ILS runway 17 is:
- a) H225°, Climb 2000 ft.
 - b) H220°, Climb 2000 ft.
 - c) H210°, Climb 2000 ft.
31. An aircraft was established on OLBA ILS runway 16. A missed approach was then initiated due to bad weather. What VOR radial on KAD should be flown?
- a) R240°.
 - b) R250°.
 - c) R220°.
32. The SSR emergency code for communication failure is:
- a) A7500.
 - b) A7600.
 - c) A7700.
33. Two aircraft are identified on radar on reciprocal tracks. ATC may discontinue vertical separation once they have passed each other and are:
- a) 3 NM apart.
 - b) 4 NM apart.
 - c) 5 NM apart.
34. ATC may vector an aircraft to intercept the localizer at least:
- a) 3 NM to 4 NM from FAF.
 - b) 5 NM to 8 NM from FAF.
 - c) Direct to FAF.
35. Below FL 250, an aircraft may be requested to adjust speed by multiples of:
- a) 9 kts IAS.
 - b) 5 kts IAS.
 - c) 10 kts IAS.
36. ATC may vector an aircraft to the final approach course at an angle of:
- a) 90°.
 - b) 50°.
 - c) 45° or less.
37. Control of an arriving aircraft shall be transferred from the unit providing approach control service to the unit providing aerodrome control service when the aircraft:
- a) Is in the vicinity of the aerodrome, and has reached uninterrupted visual meteorological conditions.
 - b) Has reached uninterrupted visual meteorological conditions.
 - c) Pass the FAF inbound.

38. Control of a departing aircraft shall be transferred from the unit providing aerodrome control service to the unit providing approach control service:
- When the aircraft is on the departure RWY.
 - When the aircraft is at a prescribed point or level, as specified in letters of agreement or ATS unit instructions.
 - When the aircraft pass 1000 ft.
39. Speed control shall not be applied to aircraft:
- At cruising level.
 - Climbing or descending.
 - Entering or established in a holding pattern.
40. An aircraft should, when practicable, be authorized to absorb a period of notified terminal delay by:
- Cruising at a reduced speed for the latter portion of its flight.
 - Cruising at a specified speed for the latter portion of its flight.
 - Holding.
41. Speed control should not be applied to aircraft after passing a point:
- 7 NM from Final Approach Fix (FAF).
 - 7 NM from the threshold on final approach.
 - 3 NM from the threshold on final approach.
42. The flight crew shall inform the ATC unit concerned if unable, at any time, to comply with a specified rate of climb or descent. In such cases, the controller shall:
- Apply an alternative method to achieve an appropriate separation minimum between aircraft, without delay.
 - Reduce the separation.
 - Vector the aircraft.
43. An aircraft cleared for BALMA 2N RWY 03 requesting RNAV approach shall follow the following way points after BALMA:
- BA401 - BA402 - RAMLA - BA403 - BA404 - BA405 - THR 03.
 - BA401 - BA402 - RAMLA - BA404 - BA405 - THR 03.
 - BA401 - BA402 - BA403 - BA404 - THR 03.
44. Longitudinal separation minima between aircraft on the same level and same track and each aircraft utilizes the same "on-track" DME station when both aircraft are utilizing DME and separation is established by obtaining simultaneous DME and/or GNSS readings from the aircraft:
- 20 NM.
 - 10 NM.
 - 15 NM.
45. Longitudinal separation minima between aircraft climbing or descending and flying on crossing tracks, reporting over a FIX located at the intersection point of the tracks:
- 5 minutes.
 - 10 minutes.
 - 15 minutes.

46. An aircraft may be cleared to a level previously occupied by another aircraft after the latter has reported vacating it, except when:
- a) Severe turbulence is known to exist.
 - b) The pilot requested to conduct visual approach.
 - c) The ceiling is below the initial approach level.
47. ATC is not required to provide separation between VFR flights, except:
- a) Within airspace Class B.
 - b) Within airspace Class C.
 - c) Within airspace Class D.
48. When the pilot of an IFR flight cleared to fly maintaining own separation while remaining in VMC conditions observes that conditions are deteriorating and considering that operation in VMC will become impossible, he shall:
- a) Continue the flight and land at the nearest airport.
 - b) Remain in VMC conditions.
 - c) Inform ATC before entering instrument meteorological conditions (IMC) and shall proceed in accordance with the alternative instructions given.
49. Lateral separation between two aircraft exists when:
- a) Both aircraft are established on tracks determined by accurate navigation aids.
 - b) Both aircrafts are established on NDB/ radials diverging by at least 30 degrees and at least one aircraft is at a distance of 15 NM or more from the facility.
 - c) Both aircraft are established on tracks to or from the NDB which are diverging by at least 30 degrees and at least one aircraft at a distance of 15 NM or more from the facility.
50. Two aircraft (A) and (B) are routing from LEBOR to CAK. Aircraft (A) is maintaining FL 220. Aircraft (B) is at FL 240 5 NM behind (both same speed). When can aircraft (B) be cleared for lower:
- a) Immediately.
 - b) Both below FL 150.
 - c) Both leaving their Flight Level.

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