

Gleim Airline Transport Pilot FAA Knowledge Test Prep

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Updates

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NOTE: Sections with changes are indicated by a vertical bar in the left margin. Text that should be deleted is displayed with a line through it. New text is shown with blue underlined font.

If you are tested on any content not represented in our materials or this update, please share this information with Gleim so we can continue to provide the most complete test preparation experience possible. You can submit feedback at www.GleimAviation.com/questions. Thank you in advance for your help!

Study Units 1-18: We have mapped each question to the FAA ACS codes. To view our online listing of questions and ACS codes, visit www.GleimAviation.com/ACSXRefs. To determine what topic each code pertains to, the ACS may be viewed at www.faa.gov/training_testing/testing/acs.

Study Unit 2 – 14 CFR Part 91, Civil Aviation Security

Page 60, Subunit 2.1, New submodules for 91.225 and 91.227: New material was added to increase students' knowledge base related to ADS-B Out.

91.225 ADS-B Out Equipment and Use

1. No person may operate an aircraft in the following airspace unless the aircraft has the appropriate ADS-B Out equipment installed:
 - a. Within Class A airspace
 - b. Within and above Class B airspace
 - c. Within 30 NM of the Class B airspace primary airport
 - d. Within and above Class C airspace
 - e. At and above 10,000 ft. MSL except at and below 2,500 ft. AGL
 - f. At and above 3,000 ft. MSL over the Gulf of Mexico from the U.S. coastline out to 12 NM
2. These requirements do not apply to any aircraft not originally certificated with an electrical system or that has not subsequently been certified with such a system installed.
3. Requests for ATC-authorized deviations from these requirements must be made to the appropriate ATC facility
 - a. At any time for an aircraft with an inoperative ADS-B Out
 - b. At least 1 hr. before the proposed operation of an aircraft that is not equipped with ADS-B Out

91.227 ADS-B Out Equipment Performance Requirements

1. ADS-B Out is a function of an aircraft's onboard avionics that periodically broadcasts the aircraft's state vector (3-dimensional position and 3-dimensional velocity).
2. Aircraft operating in Class A airspace are required to have ADS-B Out equipment installed that operates on the frequency of 1090 MHz.
3. Aircraft operating in airspace designated for ADS-B Out, but outside of Class A airspace, must have ADS-B Out equipment installed that either
 - a. Operates on the frequency of 1090 MHz or
 - b. Operates using a universal access transceiver (UAT) on the frequency of 978 MHz.

Page 71, Subunit 2.1, New questions 47-50: This update adds questions related to ADS-B Out. Subsequent questions have been renumbered accordingly.

91.225 ADS-B Out Equipment and Use

47. Automatic Dependent Surveillance-Broadcast (ADS-B) Out is mandated for aircraft operations in

- A. Class A, B, and airspace.
- B. Class A, B, and C airspace above 2,500 ft. AGL.
- C. all airspace within the 48 contiguous states above 2,000 ft. AGL.

Answer (A) is correct. (14 CFR 91.225)

DISCUSSION: ADS-B Out equipment must be installed for all operations (1) in Class A, B, and C airspace; (2) above the ceiling and within the lateral boundaries of Class B and Class C airspace; and (3) in Class E airspace within the 48 contiguous states and the District of Columbia at and above 10,000 ft. MSL, excluding the airspace at and below 2,500 ft. above the surface.

Answer (B) is incorrect. ADS-B Out equipment is required in all Class A, B, and C airspace, not only the airspace above 2,500 ft. AGL. Answer (C) is incorrect. ADS-B Out equipment is required only in certain airspace areas as specified in 14 CFR 91.225.

48. Which of the following flights may be made without ADS-B Out equipment installed?

- A. A VFR flight that departs a Class E airport and cruises at 12,500 ft. MSL to a Class G destination airport.
- B. A VFR flight that overflies, but does not enter, a Class C airspace while en route at 6,500 ft. MSL.
- C. A VFR flight that departs a Class D airport, cruises in Class E airspace at 7,500 ft. MSL, and arrives at another Class D airport.

Answer (C) is correct. (14 CFR 91.225)

DISCUSSION: A VFR flight that departs a Class D airport, cruises in Class E airspace at 7,500 ft. MSL, and arrives at another Class D airport may be made without ADS-B Out equipment installed because ADS-B Out is not required in Class D airspace or Class E airspace below 10,000 ft. MSL. ADS-B Out equipment must be installed for all operations (1) in Class A, B, and C airspace; (2) above the ceiling and within the lateral boundaries of Class B and Class C airspace; and (3) in Class E airspace within the 48 contiguous states and the District of Columbia at and above 10,000 ft. MSL, excluding the airspace at and below 2,500 ft. above the surface.

Answer (A) is incorrect. ADS-B Out equipment is required for flights at and above 10,000 ft. MSL. Answer (B) is incorrect. ADS-B Out equipment is required for flights within and above Class C airspace.

49. When is Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment required?

- A. Under the shelf of Class C airspace.
- B. In Class E airspace above 10,000 ft. MSL, except at and below 2,500 ft. AGL.
- C. In all controlled airspace.

Answer (B) is correct. (14 CFR 91.225)

DISCUSSION: ADS-B Out equipment must be installed for all operations (1) in Class A airspace; (2) above the ceiling and within the lateral boundaries of Class B and Class C airspace (within the Mode C veil where applicable); and (3) in Class E airspace within the 48 contiguous states and the District of Columbia at and above 10,000 ft. MSL, excluding the airspace at and below 2,500 ft. above the surface. It is also required over the Gulf of Mexico at and above 3,000 ft. MSL within 12 NM of the United States coastline.

Answer (A) is incorrect. ADS-B Out is required within and above Class C airspace, not underneath Class C airspace. Answer (C) is incorrect. ADS-B Out equipment is not required in all controlled airspace, only the airspace designated by 14 CFR 91.225. It is not required in Class D airspace and some Class E airspace.

91.227 ADS-B Out Equipment Performance Requirements

50. What type of ADS-B equipment is required in Class A airspace?

- A. ADS-B Out that operates on the frequency 1090 MHz.
- B. ADS-B Out that operates with UAT on the frequency 978 MHz.
- C. Any type of certified ADS-B In.

Study Unit 5 – Aerodynamics and Airplanes

Pages 208-210; Subunits 5.3 and 5.4, Questions 12-13, 15, 17-21, and 23: The question sources have been changed from AMR Chap 1 to FAA-H-8083-25B Chap 6.

Pages 251 and 262-263; Subunits 5.15 and 5.21, Questions 168 and 226-227: The source for question 168 has been changed to FAA-H-8083-25B Chap 11 and the sources for questions 226-227 have been changed to FAA-H-8083-25B Chap 5.

Study Unit 6 – Airspace and Airports

Pages 284-285; Subunit 6.6, Item 2.: These edits remove the discussion of the *NTAP*, which has been discontinued, and updates the types of NOTAMs.

2. NOTAMs are grouped into ~~five~~six types:

[. . .]

- ~~3. The **Notices to Airmen Publication (NTAP)** is issued every 28 days and is an integral part of the NOTAM system. Once a NOTAM is published in the *NTAP*, the NOTAM is not provided during pilot weather briefings unless specifically requested.~~

- ~~a. The *NTAP* contains NOTAMs (D) that are expected to remain in effect for an extended period.~~

f. **Field Condition (FICON) NOTAMs** contain information on the surface conditions of landing runways, taxiways, and aprons.

- 1) FICON NOTAMs contain three runway condition codes (RwyCCs), one for each third of the runway.
- 2) RwyCCs are numbered 0 to 6, where 0 represents a runway with no traction and 6 represents a dry runway.
 - a) **EXAMPLE: RWY 01 FICON 1/2/2 100 PCT ICE, 100 PCT 1IN SLUSH, 100 PCT 1IN SLUSH**

Explanation: Runway 01 is the landing runway. The RwyCC is 1/2/2. The first third is 90%-100% covered with ice. The remaining two-thirds are 100% covered in 1 in. of slush.

Page 289, Subunit 6.1, Question 16: This update adds ADS-B Out to the question.

16. What minimum aircraft equipment is required for operation within Class C airspace?

- A. Two-way communications.
- B. Two-way communications ~~and~~, a transponder, and ADS-B Out.
- C. ~~Transponder~~ A transponder, ADS-B Out, and DME.

Answer (B) is correct. (*AIM Para 3-2-4*)

DISCUSSION: In Class C airspace, the equipment requirement is an operating two-way communications radio ~~and~~, a Mode C transponder, and ADS-B Out equipment that either operates on the frequency of 1090 MHz or operates using a UAT on the frequency of 978 MHz.

Answer (A) is incorrect. A Mode C transponder ~~is~~ and ADS-B Out equipment are also required. Answer (C) is incorrect. Two-way communications are also required, and DME is not required.

Page 309, Subunit 6.6, Questions 96 and 99: This update removes references to the *NTAP*, which has been discontinued, and replaces question 99 (“What information is contained in the *Notices to . . .*”) with one about FDC NOTAMs.

96. What are FDC NOTAMs?

- A. Conditions of facilities en route that may cause delays.
- B. Time critical aeronautical information of a temporary nature from distant centers.
- C. Regulatory amendments to published IAPs and charts not yet available in normally published charts.

Answer (C) is correct. (*AIM Para 5-1-3*)

DISCUSSION: FDC (Flight Data Center) NOTAMs are regulatory in nature and issued to establish restrictions to flight or amend charts or published instrument approach procedures. ~~FDC NOTAMs are published as needed and indexed in the *Notice to Airmen Publication*.~~

Answer (A) is incorrect. NOTAM (D) contains information on navigational facilities en route that may cause delays. NOTAMs (D) are appended to the hourly weather reports and are available from any FSS for the duration of their validity or until published. Answer (B) is incorrect. Time critical aeronautical.

99. FICON NOTAMs disseminate what type of information?

- A. Runway closures, taxiway closures, and airport lighting outages.
- B. Surface conditions of landing runways, taxiways, and aprons.
- C. Information specific to military airports that are part of the NAS.

Answer (B) is correct. (*AIM Para 4-3-8*)

DISCUSSION: Field Condition (FICON) NOTAMs contain information on the surface conditions of landing runways, taxiways, and aprons. FICON NOTAMs contain three runway condition codes (RwyCCs), one for each third of the runway, that are numbered 0 to 6, where 0 represents a runway with no traction and 6 represents a dry runway.

Answer (A) is incorrect. NOTAMs (D), not FICON NOTAMs, are used to disseminate information about runway closures, taxiway closures, and airport lighting outages. Answer (C) is incorrect. Military NOTAMs, not FICON NOTAMs, are issued for military airports in the National Airspace System (NAS).

Study Unit 8 – IFR Navigation Equipment, Holding, and Approaches

Page 347; Subunit 8.1, New item 15.: New material was added to increase students' knowledge base related to VOR MON.

15. VOR Minimum Operational Network (MON)

- a. As flight procedures and route structure based on VORs are gradually replaced with Performance-Based Navigation (PBN) procedures, the FAA is removing selected VORs from service.
- b. The FAA is retaining a limited network of VORs called the VOR MON to provide a basic conventional navigation service for operators to use if GPS becomes unavailable.
- c. During a GPS disruption, the MON will enable aircraft to navigate through the affected area or to a safe landing at a MON airport without reliance on GPS.
- d. Although navigation using the MON will not be as efficient as the new PBN route structure, the MON will provide nearly continuous VOR signal coverage at 5,000 ft. AGL across the NAS.
- e. The VOR MON will ensure that, regardless of an aircraft's position, a MON airport with an instrument approach not dependent on GPS (an airport equipped with legacy ILS or VOR approaches) is within 100 NM.
- f. If the pilot encounters a GPS outage, the pilot will be able to proceed via VOR-to-VOR navigation at 5,000 ft. AGL through the GPS outage area or to a safe landing at a MON airport or another suitable airport, as appropriate.
 - 1) In the case of a planned GPS outage (for example, one that is in a published NOTAM), pilots may plan to fly through the outage using the MON as appropriate and as cleared by ATC.
 - 2) Deliberate GPS interference or outage areas resulting from pre-approved government tests will be disseminated in NOTAMs. Such outages are known and not an anomaly and therefore should not be reported to ATC.

Page 352; Subunit 8.7, Item 11.: This update removes coverage of HIWAS, which has been discontinued. Subsequent items have been renumbered accordingly.

- ~~41. VOR communication (NAVAID) boxes on en route charts will indicate if Hazardous Inflight Weather Advisory Service (HIWAS) is available on the VOR frequency.~~
 - ~~a. HIWAS availability is indicated by a black square in the upper left corner of the communication box.~~
 - ~~1) On current Low Altitude En Route Charts, HIWAS is indicated by a solid black circle with a white "H" in the upper right corner of the communications box.~~

Page 377, Subunit 8.1, New questions 14-15: This update adds questions related to VOR MON. Subsequent questions have been renumbered accordingly.

14. What action should a pilot take after encountering a GPS outage resulting from a pre-approved government test?

- A. Report the outage to ATC and continue the flight via alternative navigation.
- B. Do not report the outage and plan to fly through the outage using the MON as appropriate.
- C. Do not report the outage and continue to navigate via GPS as normal.

Answer (B) is correct. (FAA-H-8083-16B Chap 2)

DISCUSSION: In the case of a planned GPS outage (for example, one that is in a published NOTAM), pilots may plan to fly through the outage using the MON as appropriate and as cleared by ATC. Deliberate GPS interference or outage areas resulting from pre-approved government tests are known and not an anomaly and therefore should not be reported to ATC.

Answer (A) is incorrect. Deliberate GPS interference or outage areas resulting from pre-approved government tests will be disseminated in NOTAMs. These outages are known and not an anomaly and therefore should not be reported to ATC. Answer (C) is incorrect. After encountering a GPS outage, planned or unplanned, navigation will no longer be available via GPS and an alternate navigation source should be used.

15. In the case of a GPS outage, the VOR MON will ensure that a MON airport is within

- A. 100 NM
- B. 150 NM
- C. 200 NM

Answer (A) is correct. (AIM Para 1-1-3)

DISCUSSION: The VOR MON will ensure that, regardless of an aircraft's position, a MON airport with an instrument approach not dependent on GPS (an airport equipped with legacy ILS or VOR approaches) is within 100 NM.

Answer (B) is incorrect. The VOR MON will ensure that a MON airport is within 100 NM, not 150 NM. Answer (C) is incorrect. The VOR MON will ensure that a MON airport is within 100 NM, not 200 NM.

Page 404, Subunit 8.7, Question 67: "(Refer to Figure 210 on page 470 and Figure 211 on page 471.) The Miami . . ." was removed because HIWAS has been discontinued. Subsequent questions were renumbered accordingly.

Pages 404, 408, 410, 412, and 428; Subunits 8.7, 8.8, and 8.9; Questions 66,69-70, 73-74, 86, and 130: The question sources have been updated from aeronautical chart legend (ACL) to Aeronautical Chart Users' Guide (ACUG). These questions were also renumbered due to the above adding and removing of questions.

Study Unit 9 – IFR Flights

Pages 478, 505, and 533; Subunits 9.1, 9.4, and 9.9; Questions 5, 39, 41, and 67: The question sources have been updated from aeronautical chart legend (ACL) to Aeronautical Chart Users' Guide (ACUG).

Page 484; Question 13: This edit clarifies where to find V369 in the figure.

13. (Refer to Figure 100 on page 451 and Figure 262 on page 489.) How should the pilot identify the position to leave V369 (Area 2) for the RIICE THREE Arrival?

- A. Intercept R-313 of IAH.
- B. 21 DME miles from TNV.
- C. 141 DME miles from DFW.

Answer (A) is correct. (STAR)

DISCUSSION: The BILEE transition indicates that from BILEE INT the pilot should maintain the R-334 of TNV VORTAC to HOMRN and the R-313 of IAH, then intercept and track inbound on the R-313 of IAH VORTAC to RIICE intersection for the Rice Three Arrival.

Answer (B) is incorrect. There is no DME fix for 21 NM from TNV VORTAC on either the STAR or the IFR En Route Chart. Answer (C) is incorrect. A pilot should have changed over to TNV VORTAC, and there is no 141 DME fix from DFW on V369.

Study Unit 16 – Weather Reports and Forecasts

Page 802, Subunit 16.2, Item 2.: This update removes coverage of HIWAS, which has been discontinued, and adds coverage of FIS-B.

2. ~~Hazardous Inflight Weather Advisory Service (HIWAS) is a continuous broadcast over selected VORs of convective SIGMETs, SIGMETs, AIRMETs, severe weather forecast alerts (AWW), and center weather advisories (CWA).~~ Flight Information Services-Broadcast (FIS-B) is a ground-based broadcast system provided through ADS-B via the 978 MHz data link that can display in-flight weather data.
 - a. FIS-B information is intended for advisory use in assisting long- and near-term planning and decision making.
 - 1) The system lacks the updating capability necessary for tactical aerial maneuvering around localized weather phenomena.
 - b. Many products are available through FIS-B, including AIRMETs, SIGMETs, convective SIGMETs, NEXRAD, D-NOTAMs, FDC-NOTAMs, METARs, TAFs, Winds Aloft, PIREPs, and Special Use Airspace status updates.
 - 1) Pilots should be aware that the NEXRAD uplink may be up to 20 min. old upon receipt and should not be used for navigation through severe weather.

Page 807, Subunit 16.5, Item 5.: This update removes coverage of PROB40 HHhh group. Subsequent items have been renumbered accordingly.

5. ~~A PROB40 (PROBability) HHhh group in a TAF indicates the probability of thunderstorms or other precipitation.~~

Page 814, Subunit 16.2, Question 9: “At what time are current AIRMETs broadcast in their entirety by . . .”) was removed and replaced with a different question because HIWAS has been discontinued.

9. How could you receive in-flight weather information about your destination while still 150 NM away?

- A. Tune the frequency and listen to the ATIS for your destination.
- B. Review the destination METAR and TAF through FIS-B.
- C. Contact Flight Service on the frequency 121.5.

Answer (B) is correct. (FAA-H-8083-25B Chap 13)

DISCUSSION: Flight Information Services-Broadcast (FIS-B) is a ground-based broadcast system provided through ADS-B via the 978 MHz data link that can display in-flight weather data such as METARs, TAFs, Winds Aloft, and PIREPs.

Answer (A) is incorrect. A distance of 150 NM from the destination is too far away to be able to receive the ATIS broadcast. Answer (C) is incorrect. The emergency frequency is 121.5 MHz. Flight Service can be contacted on the frequency of 122.2 MHz.

Page 815, Subunit 16.2, Question 11: “At what time are current AIRMETs broadcast . . .” was removed because HIWAS has been discontinued. Subsequent questions have been renumbered accordingly.

Page 826, Subunit 16.5, Question 50: These edits correct figures in the correct answer explanation. The question was also renumbered due to the removal of an earlier question.

5049. (Refer to Figure 147 on page 827.) What type conditions can be expected for a flight scheduled to land at Austin-Bergstrom International Airport (KAUS) at 1200Z?

- A. Chance of 1 statute mile visibility and cumulonimbus clouds.
- B. IFR conditions due to low visibility.
- C. MVFR conditions due to low ceilings.

Answer (C) is correct. (AC 00-45H Chap 7)

DISCUSSION: IFR conditions are due to low visibility in rain and mist, not low ceilings and fog. At KAUS from 0900 to 1800Z (UTC), the forecast is wind ~~450~~¹⁸⁰° at ~~40~~⁷ kt., visibility greater than 6 SM, and a broken ceiling at 1,500 ft. AGL. Thus, the expected conditions are MVFR conditions due to a low ceiling that is below 3,000 ft. AGL.

Answer (A) is incorrect. Visibility is forecast to be greater than 6 SM, not 1 SM. Answer (B) is incorrect. Visibility is forecast to be greater than 6 SM, not 1 SM.

Page 828, Subunit 16.5, Question 52: “A PROB40 (PROBability) HHhh group . . .” was removed. Subsequent questions have been renumbered accordingly.

Study Unit 18 – Aeromedical Factors and Aeronautical Decision Making (ADM)

Pages 879-880; Subunit 18.7, Questions 64 and 69: The source for question 64 has been updated from FAA-8083-9A to FAA-H-8083-9B Chap 1, and the source for question 69 has been updated from FAA-8083-9A to FAA-H-8083-9B Chap 2.

Appendix B – Appendix B: Airline Transport Pilot-ATM (Part 121) Practice Test

Page 902, Question 76: The outdated question about NTAP (“What information is contained in the *Notices to Airmen Publication (NTAP)?*”) was removed and replaced with a different one.

[76. NOTAMs \(D\) are used to disseminate what type of information?](#)

[A — Temporary flight restrictions, changes to sectional aeronautical charts, and changes to instrument approach procedures.](#)

[B — Taxi closures, personnel and equipment near or crossing runways, airport lighting aids that do not affect instrument approach criteria, and airport rotating beacon outages.](#)

[C — Time critical information of a permanent nature that is not yet available in normally published charts.](#)

Page 908, Question 76: The correct answer for the replacement question is B.