

# ASSIGNMENT 7

Textbook Assignment: "Aircraft Avionics," chapter 7, pages 7-1 through 7-21.

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- 7-1. What is an aircraft's first source of electrical energy?
1. Battery
  2. Generator
  3. Emergency generator
- 7-2. Which of the following statements is NOT true concerning aircraft batteries?
1. It is important to keep their weight to a minimum
  2. They require a great deal of care
  3. They usually have a large capacity
  4. They are usually enclosed in a grounded, metal-covered housing
- 7-3. The positive plates of a lead-acid battery are made of what material?
1. Lead peroxide
  2. Spongy lead
  3. Sulfuric acid fiber
  4. Water impregnated composite
- 7-4. Where does the nickel-cadmium battery get its name from?
1. The composition of its plates
  2. The type of electrolyte in the case
  3. The construction of the terminal post
  4. The rectangular type cells
- 7-5. What is the principal hazard in connection with the use of lead-acid batteries?
1. Fire
  2. Explosion
  3. Suffocation
  4. Acid burns
- 7-6. The manufacturer determines the correct charging rates for aircraft batteries.
1. True
  2. False
- 7-7. What does the term "thermal runaway" indicate concerning aircraft batteries?
1. The battery has been overcharged
  2. The battery has been rapidly cooled
  3. The battery is internally shorted because of overheating
  4. The battery has been totally discharged
- 7-8. CO<sub>2</sub> should NEVER be sprayed in the aircraft battery compartment to effect cooling or displace explosive gases.
1. True
  2. False
- 7-9. What is the purpose of rectifiers?
1. Converts ac to dc
  2. Converts dc to ac
  3. Converts mechanical to electrical energy
  4. Converts electrical to mechanical energy
- 7-10. Emergency power generators are used to provide power when the engine-driven generators fail.
1. True
  2. False
- 7-11. Auxiliary power units are used to furnish electrical power when which of the following problems occur?
1. Engine-driven generators are not operating
  2. External power is not available
  3. The engine-driven generator fails
  4. Each of the above
- 7-12. What rating maintains the pitot-static system?
1. AT
  2. AE
  3. AX
  4. AQ
- 7-13. What three aircraft instruments operate off of the pitot-static system?
1. Airspeed indicator, engine rpm, and altimeter
  2. Rate-of-climb indicator, airspeed indicator, and altimeter
  3. Engine oil indicator, engine rpm, and compressor speed indicator
  4. Oxygen, air-conditioning, and heating systems instruments
- 7-14. What does the air speed indicator interpret from the pitot tube?
1. Altitude
  2. Air density
  3. Air flow
  4. Air pressure

- 7-15. What precaution(s) must be observed while working around a pitot tube system?
1. Avoid touching the tubes when the heaters are on
  2. Do not obstruct the openings
  3. Be sure the tube heaters are off before installing protective covers
  4. Each of the above

IN ANSWERING QUESTION 7-16, REFER TO FIGURE 7-7 IN THE TEXT.

- 7-16. The altimeter indicates what altitude in feet?
1. 100
  2. 401
  3. 4,100
  4. 40,100
- 7-17. An aircraft flying at 0.5 Mach is flying at what speed?
1. One and one-half the speed of sound
  2. Twice the speed of sound
  3. Twice the local speed of sound
  4. One-half the local speed of sound
- 7-18. An aircraft flying level at 30,000 feet would indicate which of the following numbers on the rate-of-climb indicator?
1. 0
  2. 20
  3. 30
  4. 40

IN ANSWERING QUESTION 7-19, REFER TO FIGURE 7-11 IN THE TEXT.

- 7-19. What does the hydraulic pressure gauge indicate?
1. 0 to 5,000 psi for one system
  2. 0 to 5,000 psi for two systems
  3. 0 to 3,000 psi for one system
  4. 0 to 3,000 psi for two systems
- 7-20. At what location are the thermocouples for a turbine inlet temperature indicating system?
1. The instrument panel
  2. The circuit breaker panel
  3. The inlet casing
  4. The aircraft frame
- 7-21. What engine component is the exhaust gases temperature measured from?
1. Compressor
  2. Tail pipe
  3. Engine inlet
  4. Turbine

- 7-22. The fuel quantity indicator displays the aircraft fuel load in what measurement?
1. Pounds
  2. Gallons
  3. Liters
  4. Quarts
- 7-23. Which of the following factors makes the vertical scale indicator more advantageous than the radial dial indicator on Navy aircraft?
1. It is compact
  2. It is light in weight
  3. It is easy to read
  4. Each of the above
- 7-24. Which of the following indicators works on the principle of a gyroscope?
1. Fuel quantity indicator
  2. Attitude indicator
  3. Hydraulic pressure indicator
  4. Rpm indicator
- 7-25. What instrument shows the pilot the relative position of the aircraft compared to the earth's horizon?
1. Turn and Bank indicator
  2. Altitude indicator
  3. Horizontal situation indicator
  4. Attitude indicator
- 7-26. A turn and bank indicator is really two instruments mounted as a single unit.
1. True
  2. False
- 7-27. Using the turn and bank indicator, a pilot making a properly banked turn to the right would see the ball move to what position on the indicator?
1. Left only
  2. Right only
  3. Center
  4. Left and then right
- 7-28. A gyro compass provides an accurate, stabilized indication of aircraft heading through what total number of degrees of azimuth?
1. 30°
  2. 60°
  3. 90°
  4. 360°

- 7-29. The horizontal situation indicator gives what information to the pilot?
1. Direct heading
  2. Rate of descent
  3. Navigational situation of the aircraft
  4. Aircraft attitude
- 7-30. What are the two major uses of airborne radios?
1. Communications and detection
  2. Communications and navigation
  3. Navigation and detection
  4. Detection and ranging
- 7-31. What rating normally maintains communications and navigational equipment?
1. AC
  2. AE
  3. AT
  4. AW
- 7-32. What means of radio communications transmits a rapid succession of images (still or moving) over a radio-frequency channel?
1. Radiofacsimile
  2. Radioteletype
  3. Radiotelephony
  4. Radiotelevision
- 7-33. Long-range airborne communications sets operate in what band of frequencies?
1. From 3 to 30 kilohertz
  2. From 3 to 30 megahertz
  3. From 30 to 300 megahertz
  4. From 30 to 300 kilohertz
- 7-34. What is the frequency band of short-range VHF/UHF communication sets?
1. 30 megahertz to 3 gigahertz
  2. 300 kilohertz to 3 megahertz
  3. 30 kilohertz to 300 kilohertz
  4. 30 gigahertz to 300 gigahertz
- 7-35. VHF/UHF communication sets are called line-of-sight communication sets.
1. True
  2. False
- 7-36. What is the primary navigational aid for carrier-based aircraft?
1. Loran
  2. Omega
  3. Dead reckoning
  4. TACAN
- 7-37. The main advantage of GPS over LORAN navigation is that GPS navigation provides highly accurate three-dimensional position, velocity, and time data.
1. True
  2. False
- 7-38. Which of the following computations is made by navigational computers?
1. Aircraft ground track angle
  2. Bearing to target
  3. Distance to target
  4. Each of the above
- 7-39. What does Doppler radar measure?
1. Ground speed only
  2. Drift angle only
  3. Ground speed and drift angle
  4. Latitude and longitude
- 7-40. The inertial navigation system is an automatic aid to navigation that is independent of outside references.
1. True
  2. False
- 7-41. Which of the following data does the inertial navigational system (INS) provide to the overall tactical system?
1. Accurate velocity
  2. Attitude
  3. Heading data
  4. Each of the above
- 7-42. Upon what principle does radar work?
1. Ranging
  2. Detection
  3. Echo
  4. Radio
- 7-43. Radio waves travel at what speed?
1. 1,100 feet per second
  2. 1,100 miles per hour
  3. 186,000 miles per hour
  4. 186,000 miles per second
- 7-44. If it takes 6 seconds for a sound wave to travel to an object and return, what is the distance of the object?
1. 1,100 feet
  2. 2,200 feet
  3. 3,300 feet
  4. 6,600 feet

- 7-45. Radio waves travel much faster than sound waves?
1. True
  2. False
- 7-46. What rating normally maintains AEW equipment?
1. AT
  2. AE
  3. AQ
  4. AW
- 7-47. What characteristics make radar suitable for directing fire control radar systems?
1. Range measurement
  2. Target display
  3. Narrow focused radar beam
  4. All of the above
- 7-48. What is the purpose of IFF?
1. Fire control
  2. Navigation
  3. Early warning
  4. Distinguishing friend from foe
- 7-49. Selective Identification Feature (SIF) was developed to expand the IFF system.
1. True
  2. False
- 7-50. What are the two types of electronic countermeasures?
1. Active and passive
  2. Active and progressive
  3. Passive and collective
  4. Passive and interceptor
- 7-51. What type of ECM uses jamming?
1. Passive only
  2. Active only
  3. Passive and active
  4. Passive and progressive
- 7-52. Which of the following detection devices is used to detect submarines?
1. Sonar
  2. Sonobuoy
  3. Magnetic Anomaly Detection (MAD) equipment
  4. Each of the above
- 7-53. Which of the following statements is NOT true concerning sonobuoys?
1. They are dropped from carrier-based aircraft
  2. They are dropped from land-based aircraft
  3. They are expendable
  4. They are nonexpendable
- 7-54. Upon what principle does MAD operate?
1. Light
  2. Radar
  3. Sound
  4. Magnetic field
- 7-55. What rating operates ASW equipment?
1. AE
  2. AT
  3. AQ
  4. AW