

# **PRIVATE PILOT**

## **I. AREA OF OPERATION: PREFLIGHT PREPARATION**

### **C. TASK: WEATHER INFORMATION**

#### **OBJECTIVE**

To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports, charts, and forecasts from various sources with emphasis on:
  - a. METAR, TAF, and FA reports.
  - b. Surface analysis chart.
  - c. Radar summary chart.
  - d. Winds and temperature aloft chart.
  - e. Significant weather prognostic charts.
  - f. AWOS, ASOS, and ATIS reports.
2. Makes a competent "go / no-go" decision based on available weather information.

#### **ELEMENTS**

1. Aviation Routine Weather Report (METAR):
  - a. Hourly observation of current surface weather reported in ICAO format.
  - b. Includes type of report, ICAO station identifier, date and time of report, modifier, wind, visibility, weather, sky condition, temperature and dewpoint, altimeter setting and remarks.
2. Terminal Aerodrome Forecast (TAF):
  - a. Report forecasting weather for a 5-statue mile radius from an airport in ICAO format.
  - b. Covers a 24-hour period and is updated at 0000Z, 0600Z, 1200Z and 1800Z.
  - c. Includes type of report, ICAO station identifier, date and time or origin, valid period date and time, forecast wind, forecast visibility, forecast significant weather, forecast sky condition, forecast change group and probability forecast.
3. Area Forecast (FA):
  - a. Report forecasting weather over a large area encompassing several states (6 areas in the contiguous United States).
  - b. Issued 3 times a day and valid for 18 hours.
  - c. Includes header, precautionary statements, synopsis, VFR clouds and weather.
4. Surface Analysis Chart:
  - a. Graphically depicts analysis of the current weather for the contiguous United States.
  - b. Computer-generated report transmitted every 3 hours.
  - c. Each surface weather reporting point is illustrated by a station model.
  - d. Included in a station model are symbols depicting the type of observation, sky cover, clouds, sea level pressure, pressure change / tendency, precipitation, dewpoint, present weather, temperature and wind.
5. Radar weather report (SD):
  - a. Report describing areas of precipitation and thunderstorms.
  - b. Issued by radar stations hourly at 35 minutes past the hour.
  - c. Includes location identifier, echo pattern, area coverage, type and intensity, location, cell movement and maximum tops.
6. Radar summary chart:
  - a. Graphically depicted collection of radar weather reports (SD's).
  - b. Published hourly at 35 minutes past the hour.
  - c. Includes precipitation intensity contours, height of tops, movement of cells, type of precipitation, echo configuration and weather watches.
7. Winds and temperature aloft forecast (FD):
  - a. Provides winds and temperatures at constant altitudes for specific locations.
  - b. Published twice daily at 0000Z and 1200Z.
  - c. Reports at 3000', 6000', 9000' and 12,000' are true altitudes.
  - d. Reports at 18,000', 24,000', 30,000', 34,000' and 39,000' are pressure altitudes.
  - e. Wind direction is referenced to true north and wind speed is in knots.
  - f. Temperature is in degrees Celsius.

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8. Winds and temperature aloft chart:
  - a. Graphically depicted collection of wind and temperature aloft forecasts (FD's).
  - b. Published twice daily at 0000Z and 1200Z.
  - c. Eight separate panels (all altitudes of FD except 3000').
  - d. Arrows with pennants and barbs show wind direction and speed.
9. Significant weather prognostic chart (low level):
  - a. Four-panel chart depicting significant weather forecasts:
    - i. Left two charts: 12-hour forecast.
    - ii. Right two charts: 24-hour forecast.
    - iii. Top two charts: Weather aloft forecasts up to FL240.
    - iv. Bottom two charts: Surface weather forecasts.
  - b. Issued 4 times daily at 0000Z, 0600Z, 1200Z and 1800Z.
  - c. Includes non-convective turbulence, freezing levels, areas of MVFR and IFR weather, pressure system locations, fronts and precipitation.
10. Automated weather or surface observation system reports (AWOS or ASOS):
  - a. AWOS: Real-time weather observations reported by local sensors and transmitted on frequency by a computer-generated voice.
  - b. ASOS: Real-time surface observations reported by local sensors and transmitted on frequency by a computer-generated voice.
11. Automatic Terminal Information Service (ATIS):
  - a. A continuous broadcast of recorded information in selected terminal areas.
  - b. Recorded by tower controllers and reviewed by pilots to reduce frequency congestion.

## **REFERENCES**

1. 14 CFR Part 91, General Operating and Flight Rules.
2. AC 00-06, Aviation Weather.
3. AC 00-45, Aviation Weather Services.
4. AC 61-84, Role of Preflight Preparation.
5. AC 61-23 / FAA-H-8083-25, Pilot's Handbook of Aeronautical Knowledge, Chapter 11.
6. AIM, Aeronautical Information Manual.