

DEPARTMENT OF TRANSPORTATION  
Federal Aviation Administration  
VFR PILOT EXAM-O-GRAM® NO. 37  
Commonly Misunderstood  
Areas of Aeronautical Knowledge  
(Series 2)



This is the second in a series of Exam-O-Grams dealing with areas of aeronautical knowledge in which 50% or more of the applicants are experiencing difficulty on the Private Pilot Written Test. A little knowledge is a dangerous thing. Erroneous solutions of problems or improper analyses of operational situations are usually the result of the use of partial information or misinformation, whether it be in flying activities or on written tests. In this Exam-O-Gram a generalized question is posed, followed by a brief introductory discussion. This is done to identify the problem areas. **ANSWERS ARE PURPOSELY WITHHELD TO ENCOURAGE THOROUGH STUDY.** Complete explanations for full understanding may be found in the references given.

**SPECIAL VFR WEATHER MINIMUMS IN A CONTROL ZONE**

1. Will Regulations permit VFR operations in a control zone when the ceiling is less than 1,000 feet or visibility is less than 3 miles?

The exact weather minimums required by Regulations for VFR operations in a control zone will vary, depending on the actions taken by the pilot. Basic VFR weather minimums apply unless the pilot obtains a special VFR clearance. (Ref: Federal Aviation Regulations 91.107 and VFR Exam-O-Gram No. 26.)

**AIRPORT ADVISORY SERVICE (Non-Radar)**

2. What airports have Airport Advisory Service?

This service is available (at the option of the pilot) from the Flight Service Station at various airports under certain prescribed conditions. Ref: Pilot's Handbook of Aeronautical Knowledge, Chapter 24.

\* Exam-O-Grams are non-directive in nature and are issued solely as an information service to individuals interested in Airman Written Examinations.

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## REPORTED CLOUD HEIGHTS VERSUS THEIR INDICATED ALTITUDE

3. What is the relationship between Cloud/Ceiling Reports and Altimeter Indications?

Except in those instances where it is specifically noted otherwise, all cloud and ceiling heights in aviation weather reports and forecasts are given in feet above the ground. The altimeter, however, is normally adjusted to measure altitude above sea level (MSL). This seems to be a confusing situation to many pilots. The problem is roughly comparable to the situation where air and ground speeds are computed in miles per hour, but wind speeds are given in knots. Just remember that you must reduce the information to a common denominator. That is, the point of reference must be common to both measurements. (Ref: Pilot's Handbook of Aeronautical Knowledge, Chapter 11, and VFR Exam-O-Gram Nos. 17, 20, and 21.)

## CRUISE PERFORMANCE CHARTS

4. How are Cruise Performance Charts used?

The manufacturer of today's light airplane provides cruise charts or graphs pertaining to the rate of fuel consumption, true airspeed, range, endurance, etc. at different altitudes and power settings. These charts may be relatively simple or quite sophisticated, but in either case, it is important to remember that the performance data is based upon specific conditions of mixture, temperature, pressure, gross weight, wind, etc. Any deviation from the specific information upon which the chart computations were based will affect the accuracy of some or all of the results. For example, most Cruise Performance Charts are based on zero wind and standard atmospheric conditions, yet, during actual operations, these conditions seldom prevail. It should be noted that wind has a very significant effect on the distance an aircraft can fly but no effect on its rate of fuel consumption or the total time it can remain aloft. (Ref: Pilot's Handbook of Aeronautical Knowledge, Chapter 23, and VFR Exam-O-Gram No. 33.)

## MOUNTAIN TURBULENCE

5. Will strong winds in mountainous terrain present any special flying hazards?

Although clouds and weather of any significance should be of particular concern to pilots when operating in mountainous areas, hazardous conditions may be encountered in cloudless skies or when excellent VFR conditions prevail in these areas. (Ref: Pilot's Handbook of Aeronautical Knowledge, Chapter 7. For more complete coverage of this, refer to Advisory Circular 00-17, Turbulence in Clear Air.)

## AERONAUTICAL CHART SYMBOLS

6. What is the meaning of the chart symbols pertaining to radio facilities which appear on Visual Navigation Aeronautical Charts?

The symbols pertaining to radio facilities are explained on the charts. Careful comparison and study of these symbols and their explanatory legend should make it relatively easy to determine the exact nature of the radio aids available at any location. CAUTION: Chart information may be out of date and should always be checked against the information in the Airman's Information Manual and teletype NOTAMS at the Flight Service Stations. (Ref: Pilot's Handbook of Aeronautical Knowledge, Chapter 13, and VFR Exam-O-Gram No. 50.)

## AREA FORECASTS

### 7. How can a pilot use Area Forecasts in preflight planning?

Area Forecasts deal with weather on a regional basis and are intended primarily as Enroute Forecasts. A pilot can obtain a broad picture of the weather conditions he is likely to encounter during the time period specified by:

- A. Studying the forecast with regard to clouds, weather, icing, freezing level(s), turbulence, and weather outlook.
- B. Carefully locating the specific geographical area as described in the forecast to which the items in (A) apply.
- C. Establishing the times during which (A) will apply to (B).
- D. Correlating (A), (B), and (C) with the planned route of flight as well as estimated departure, enroute, and arrival times.

(Ref: Pilot's Handbook of Aeronautical Knowledge,  
VFR Exam-O-Gram No. 26.)

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1/72

VFR - No. 37