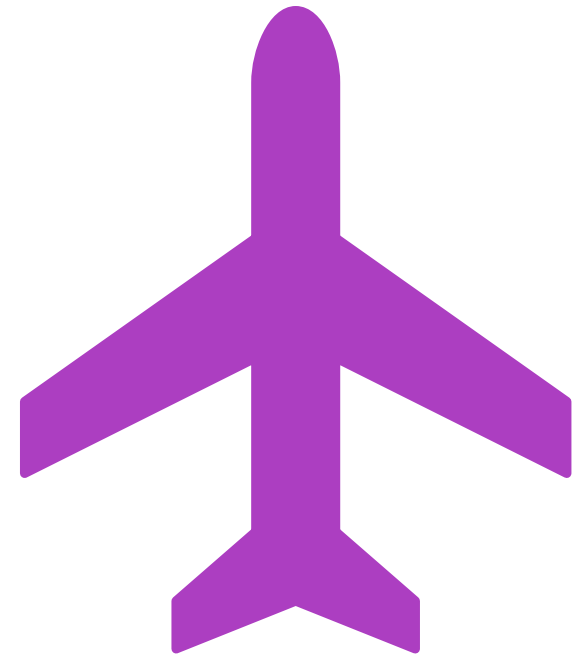


NATIONAL AIRSPACE SYSTEM



LESSON OUTLINE

LESSON OBJECTIVE

To determine that the student exhibits proficient knowledge of the elements related to the national airspace system by describing the elements on the following slide.

LESSON SOURCE(S)

Pilot's Handbook of
Aeronautical Knowledge
FAA-H-8083-25

Federal Aviation Regulations



LESSON OUTLINE

LESSON ELEMENTS

Class A Airspace
Class B Airspace
Class C Airspace
Class D Airspace
Class E Airspace
Class G Airspace
Special Use Airspace
Temporary Flight Restrictions

TIMEFRAME

60 Minutes

approximately

Discuss Objectives
Present and Review Material
Student Questions
Conclusion and Quiz

EQUIPMENT/TOOLS

Lesson Presentation
Whiteboard and Markers
FAA Sources and References

LESSON OUTLINE

INSTRUCTOR ACTIONS

Present Objectives and Standards
Teach Lesson from Presentation
Ask and Answer Student Questions
Assign Homework
Check Student's Post Lesson Quiz

STUDENT ACTIONS

Participate in Lesson
Take Notes
Ask and Respond to Questions
Pass the Post Lesson Quiz

COMPLETION STANDARDS

Student is able to understand and differentiate between the different lesson elements. Student is further able to apply this acquired knowledge in flight training/flight operation scenarios effectively and appropriately.

NATIONAL AIRSPACE SYSTEM

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

>12,500'



CLASS A AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Dimensions

From 18,000' MSL up to and including FL600.

Entry Requirements

All operations conducted under Instrument Flight Rules (IFR). This means the pilot and plane must be instrument rated (and equipped) and must be on an Instrument Flight Plan.

VFR Weather Minimums

NA since all operations are conducted under IFR.

CLASS B AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Dimensions

Customizable and shaped like an upside down wedding cake.
Typically surrounds big, international airports with heavy traffic.

Entry Requirements

Pilots must have an ATC Clearance to enter. Must have at least a Private Pilot License (or proper student endorsement in some instances). Aircraft must be equipped with a Mode C Transponder and ADS-B Out.

VFR Weather Minimums

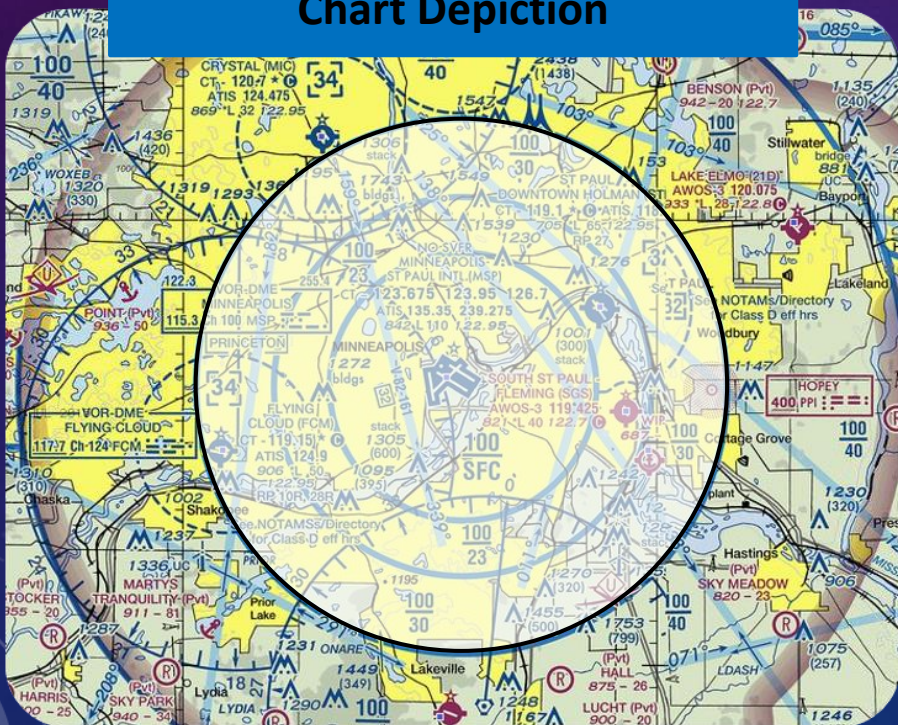
Visibility = 3SM
Cloud Clearance = Clear of Clouds

CLASS B AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Chart Depiction



VFR Weather Minimums

3SM Visibility

Clear

Clear

Clear

Clear

CLASS C AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Dimensions

Customizable. Typically the lower shelf has a 5NM radius and reaches up to 1,200' AGL while the upper shelf has a 10NM radius and reaches up to 4,000' AGL.

Entry Requirements

Pilots must establish 2 way radio communications to enter. Aircraft must be equipped with a Mode C Transponder and ADS-B Out.

VFR Weather Minimums

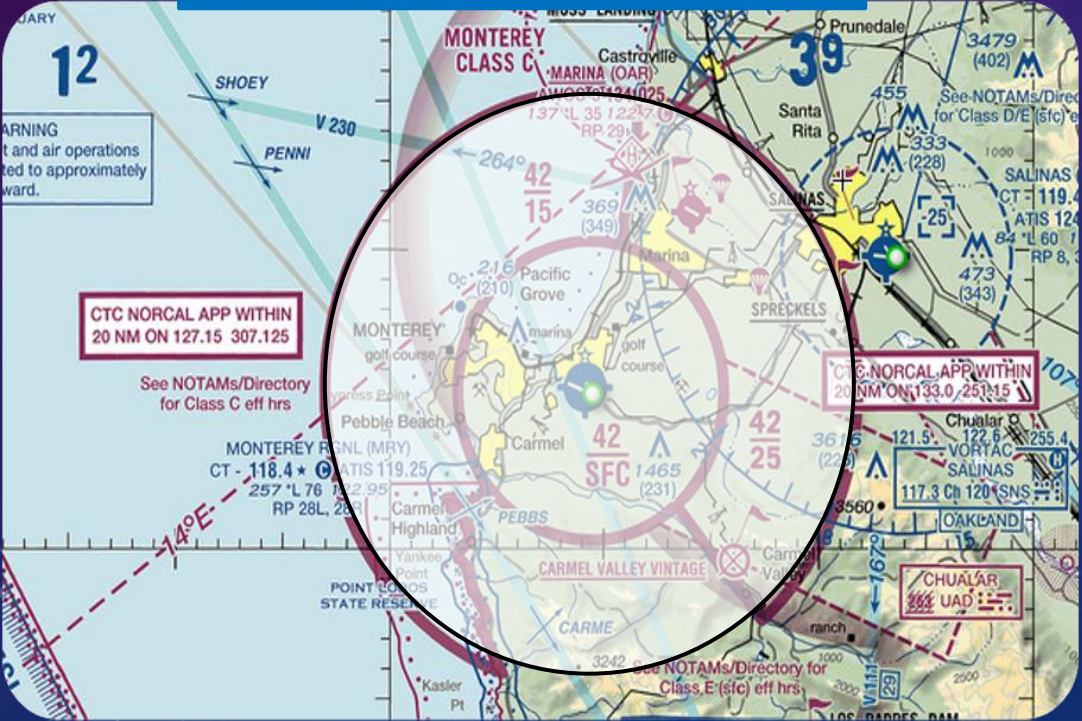
Visibility = 3SM
Cloud Clearance = 1,000' above,
500' below, and 2,000' horizontal

CLASS C AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Chart Depiction



VFR Weather Minimums

3SM Visibility

1,000'

2,000'

2,000'

500'



CLASS D AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Dimensions

Customizable. Typically surrounds small towered airports and extends from the surface to 2,500' AGL with a 4NM radius.

Entry Requirements

Pilots must establish 2 way radio communications to enter.

VFR Weather Minimums

Visibility = 3SM
Cloud Clearance = 1,000' above,
500' below, and 2,000' horizontal

CLASS D AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Chart Depiction



VFR Weather Minimums

3SM Visibility

1,000'

2,000'

2,000'

500'



CLASS E AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Dimensions

Almost everywhere else. It can start at one of 3 different floors and extends up to the overlying airspace. Those floors are: the surface, 700' AGL, and 1,200' AGL.

Entry Requirements

None for VFR. Must be on an IFR Flight Plan to enter in IMC conditions.

VFR Weather Minimums

Below 10,000' MSL

Visibility = 3SM

Cloud Clearance = 1,000' above,
500' below, and 2,000' horizontal

Above 10,000' MSL

Visibility = 5SM

Cloud Clearance = 1,000' above,
1,000' below, 1SM horizontal

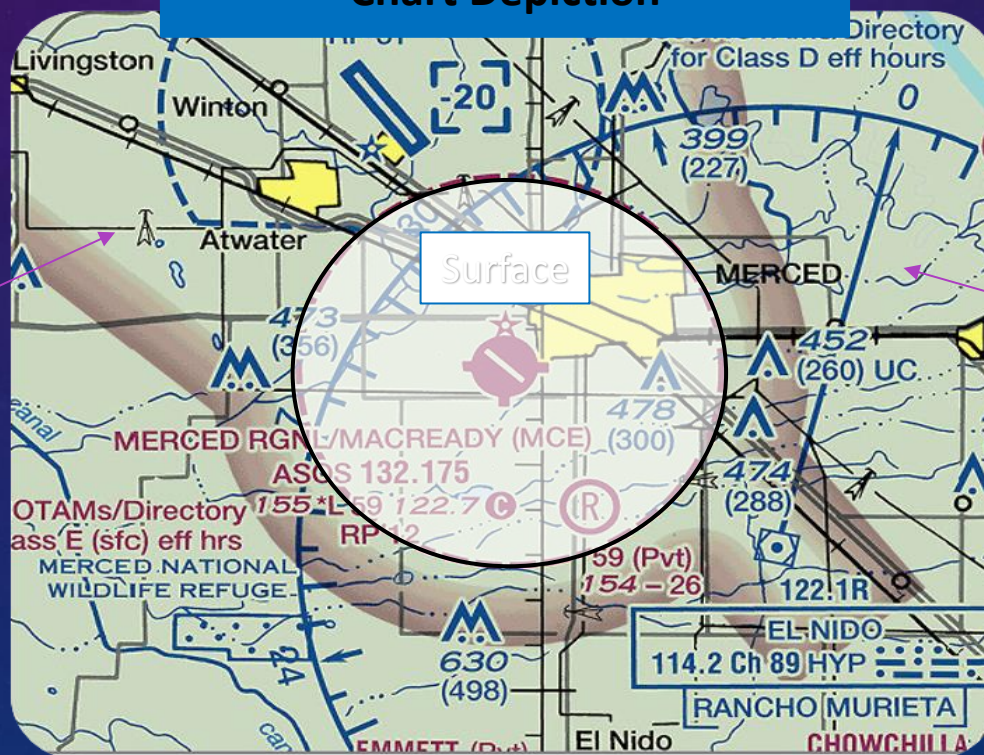
CLASS E AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Chart Depiction

700' AGL



1,200' AGL

CLASS E AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155



CLASS G AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

Dimensions

Uncontrolled airspace. Essentially, it is any airspace that is not classified as A, B, C, D, or E. It reaches from the surface to the overlying airspace.

Entry Requirements

None.

VFR Weather Minimums

Covered on the next slide.

CLASS G AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

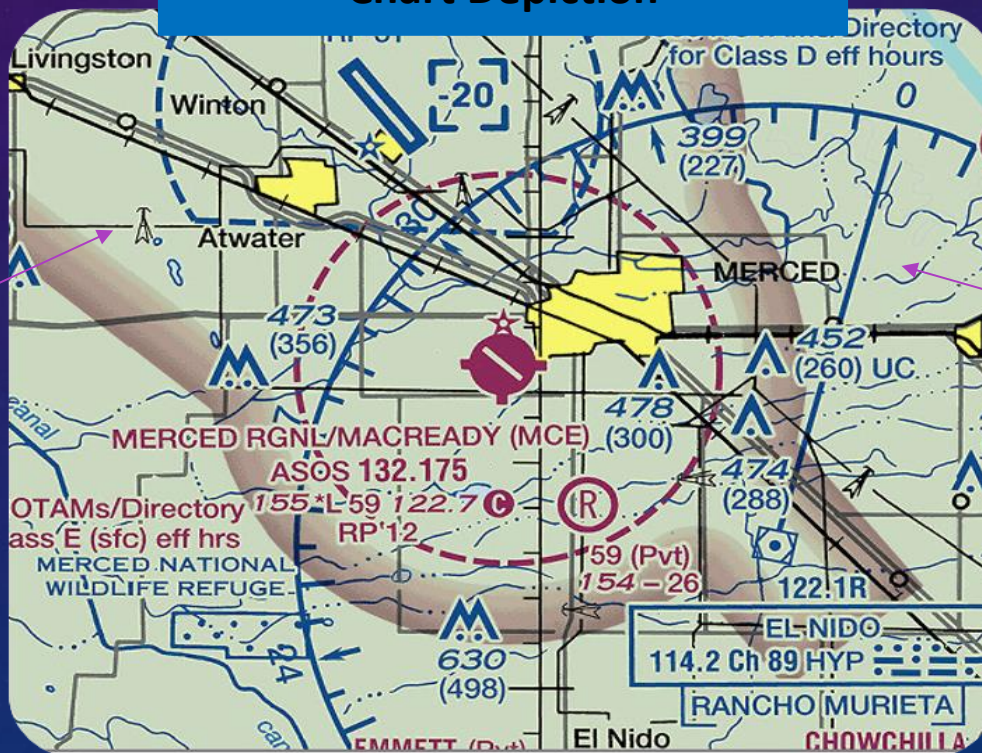
	Day	Night	
>10,000' MSL	Visibility = 5SM Cloud Clearance = 1,000' above, 1,000' below, 1SM horizontal.	Visibility = 5SM Cloud Clearance = 1,000' above, 1,000' below, 1SM horizontal.	>10,000' MSL
1,200AGL – 10,000MSL	Visibility = 1SM Cloud Clearance = 1,000' above, 500' below, 2,000' horizontal.	Visibility = 3SM Cloud Clearance = 1,000' above, 500' below, 2,000' horizontal.	1,200AGL – 10,000MSL
<1,200' AGL	Visibility = 1SM Cloud Clearance = Clear of Clouds	Visibility = 3SM Cloud Clearance = 1,000' above, 500' below, 2,000' horizontal.	<1,200' AGL

CLASS G AIRSPACE

There are two categories of airspace, they are: regulatory and non-regulatory. The categories and types of airspace are dictated by the complexity/density of aircraft movements and the level of safety required.

FAR 91.155

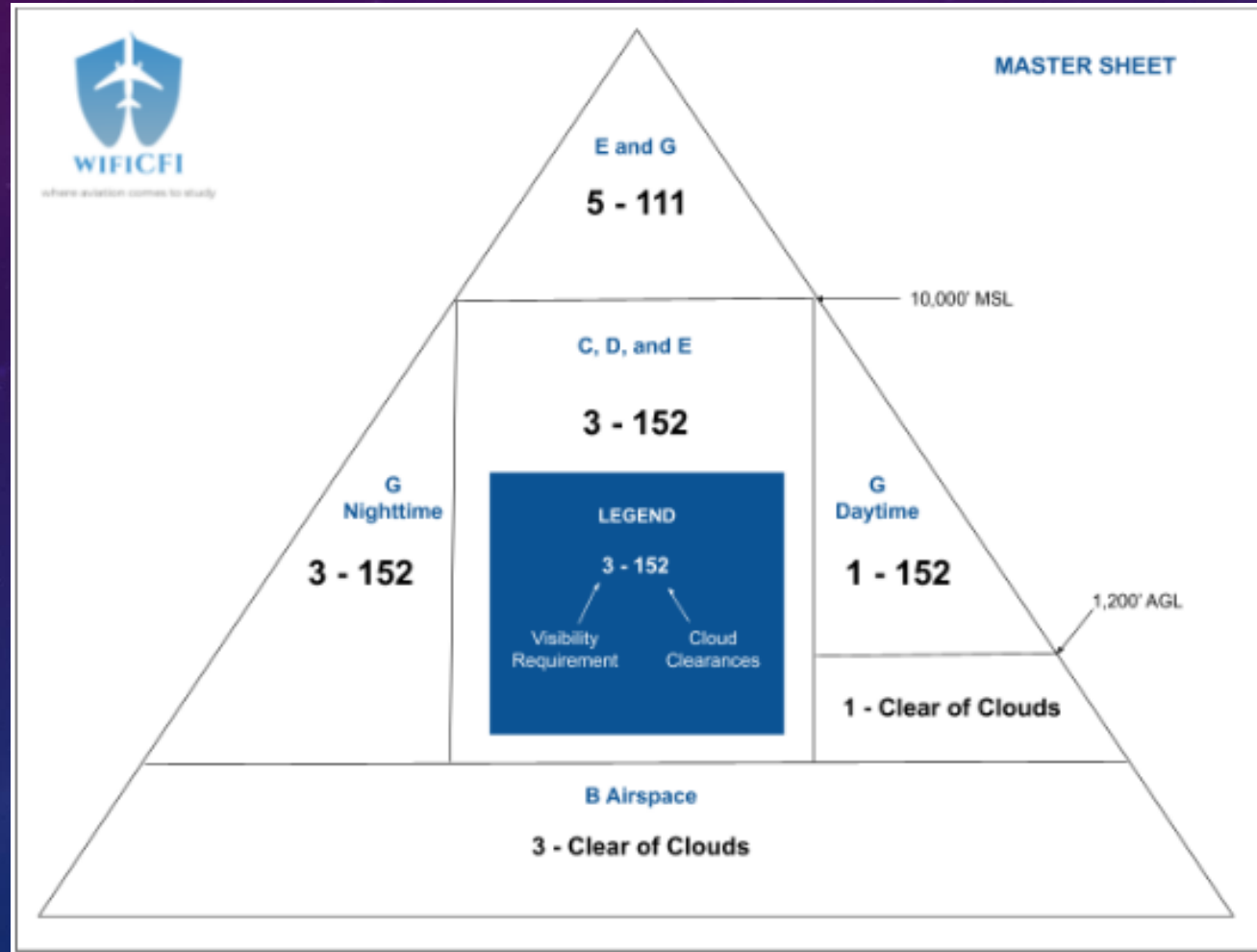
Chart Depiction



Below 700' AGL

Below 1,200' AGL

THE AIRSPACE TRIANGLE



SPECIAL VFR RULES

No pilot may operate an aircraft under basic VFR when the flight visibility is less, or at a distance from clouds that is less, than that prescribed for the corresponding altitude and class of airspace. Except when following the rules of FAR 91.157.

In Flight

Special VFR operations can only be conducted:

- With an ATC Clearance
- Clear of Clouds
- 1 SM Flight Visibility
- Between Sunrise and Sunset (unless IFR rated)

Takeoff and Landing

No person may takeoff or land an aircraft under Special VFR unless:

- Ground Visibility is at least 1 SM
- Flight Visibility is at least 1 SM (if ground visibility is not being reported)

Flight Visibility

The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night

AIRCRAFT SPEED LIMITS

Aircraft operating in the National Airspace System are restricted to the following speed limits based on their location and type of operation.

Below 10,000' MSL

250 KIAS

Below 2,500 AGL
Within 4 NM of C or D
Airport

200 KIAS



Below B or Through
A Class B Corridor

200 KIAS



SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Prohibited Areas

Prohibited areas contain airspace of defined dimensions within which the flight of aircraft is prohibited. Such areas are established for security or other reasons associated with the national welfare. The area is charted as a "P" followed by a number (P-40).

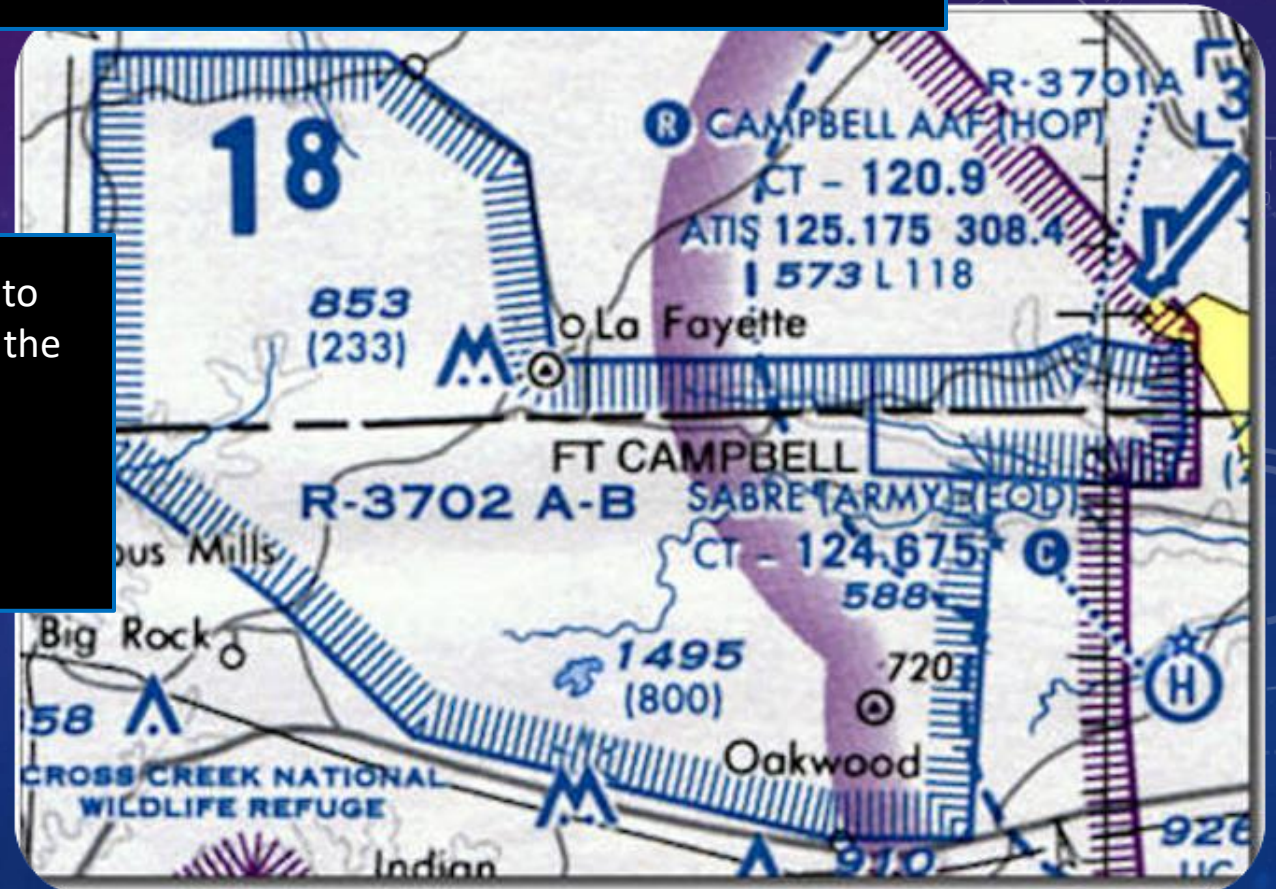


SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Restricted Areas

Restricted areas are areas where operations are hazardous to nonparticipating aircraft and contain airspace within which the flight of aircraft, while not wholly prohibited, is subject to restrictions. The area is charted as a "R" followed by a number (R-4401). Appropriate clearance must be obtained before entering these areas.



SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Warning Areas

Warning areas are similar in nature to restricted areas; however, the United States government does not have sole jurisdiction over the airspace. A warning area is airspace of defined dimensions, extending from 3 NM outward from the coast of the United States, containing activity that may be hazardous to nonparticipating aircraft. The airspace is designated with a "W" followed by a number (W-237).

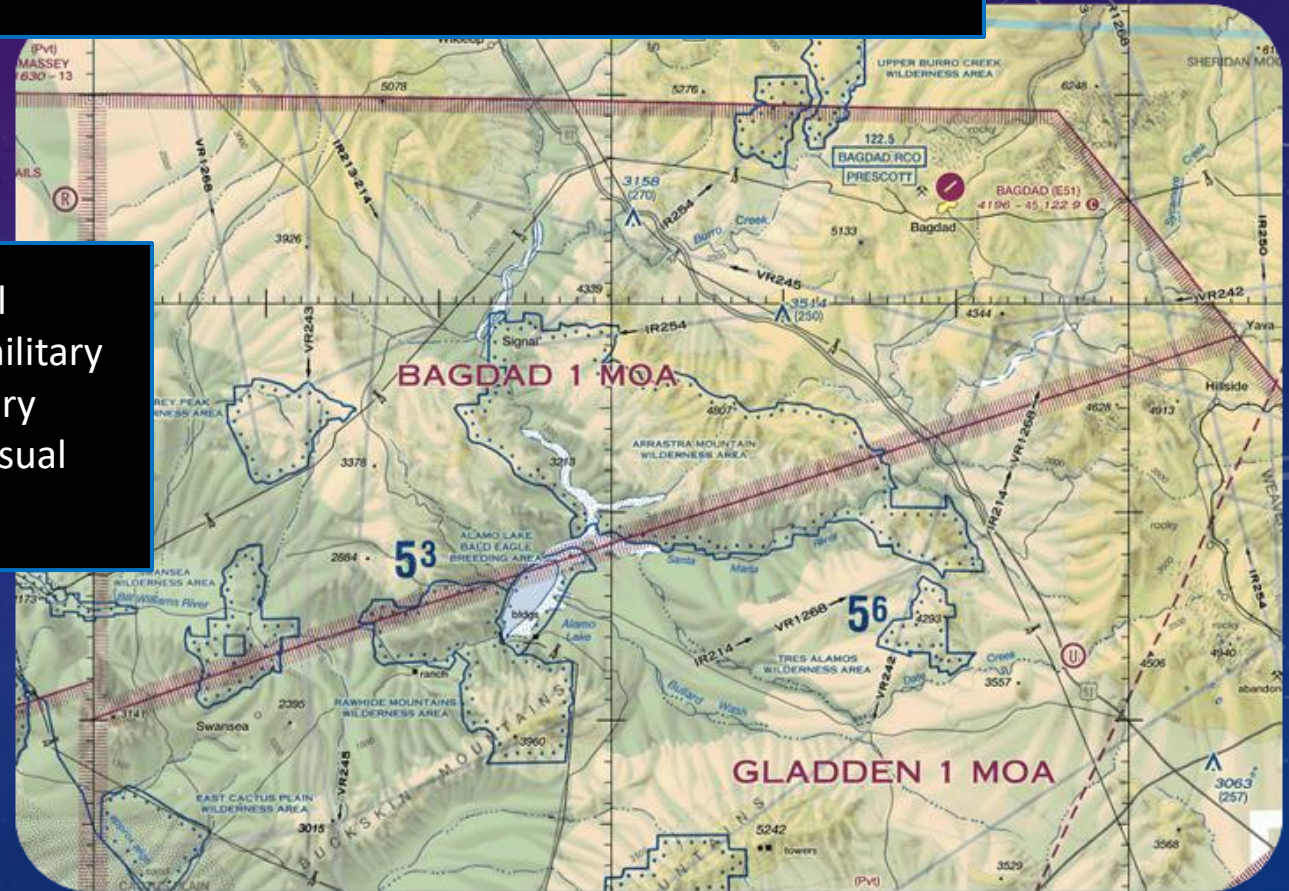


SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Military Operating Areas (MOA)

MOAs consist of airspace with defined vertical and lateral limits established for the purpose of separating certain military training activities from IFR traffic. Used to separate military and civilian operations. Clearance is not needed under Visual Flight Rules.



SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Alert Areas

Alert areas are depicted on aeronautical charts with an “A” followed by a number (A-211) to inform nonparticipating pilots of areas that may contain a high volume of pilot training or an unusual type of aerial activity. Pilots should exercise caution in alert areas.

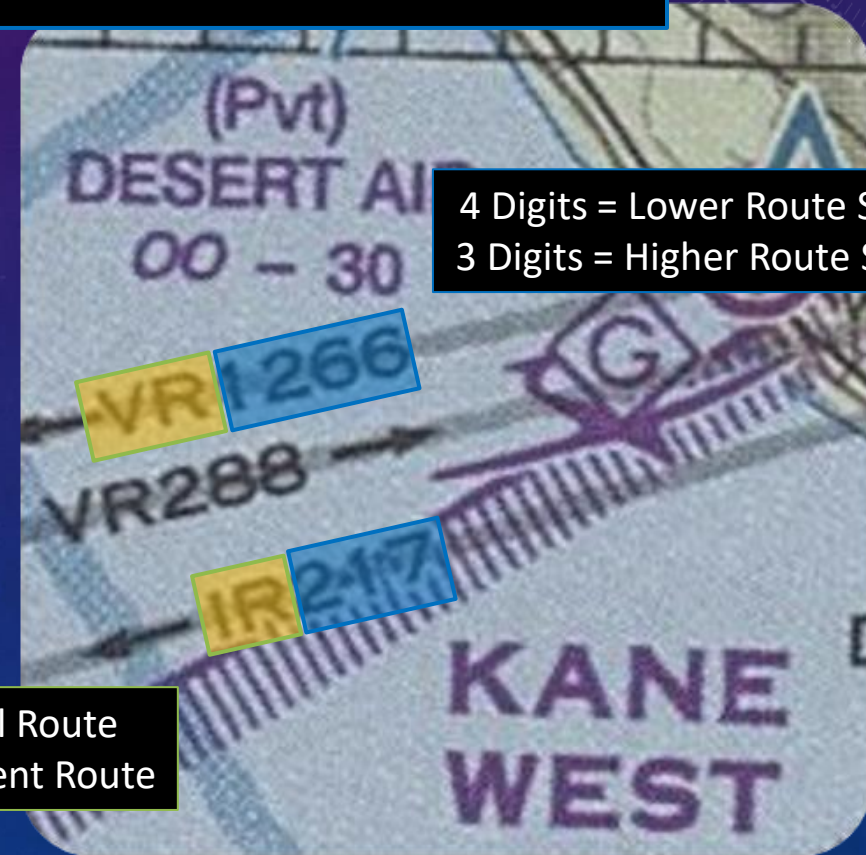


SPECIAL USE AIRSPACE

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Military Training Routes (MTR)

MTRs are routes used by military aircraft to maintain proficiency in tactical flying. These routes are usually established below 10,000 feet MSL for operations at speeds in excess of 250 knots. Some route segments may be defined at higher altitudes for purposes of route continuity.



4 Digits = Lower Route Segment
3 Digits = Higher Route Segment

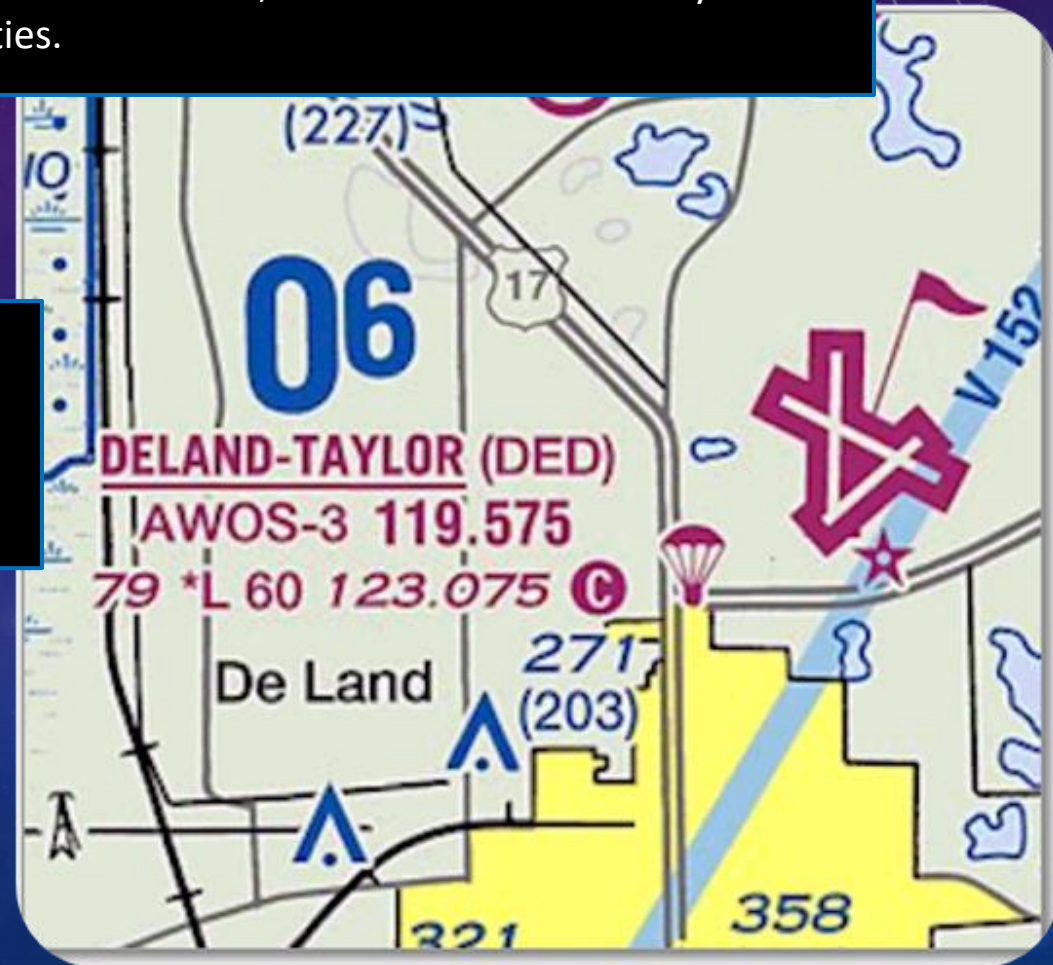
VR = Visual Route
IR = Instrument Route

SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Parachute Jump Operations

Parachute jump aircraft operations are published in the Chart Supplement U.S. (formerly Airport/Facility Directory). Sites that are used frequently are depicted on sectional charts.

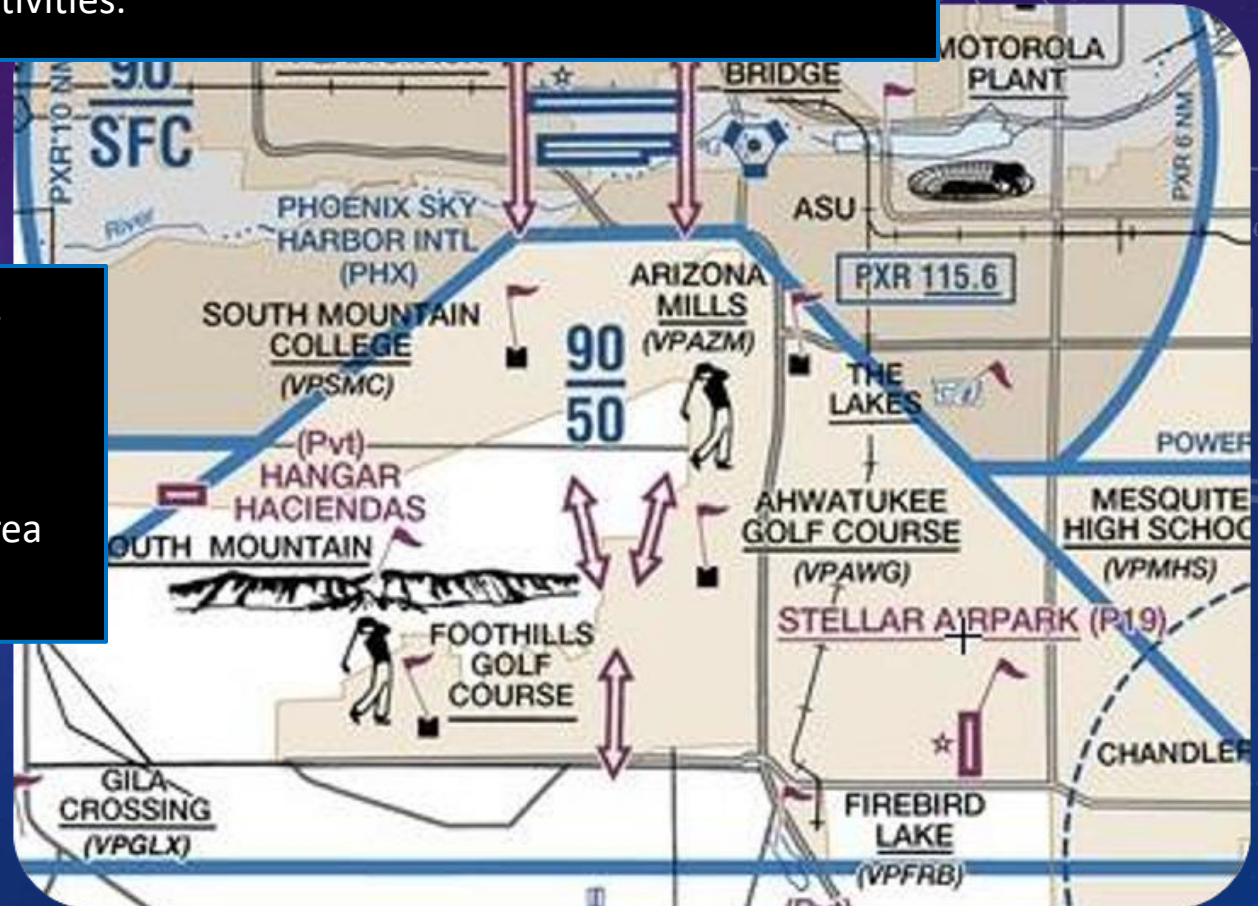


SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Published VFR Routes

Published VFR routes are for transitioning around, under, or through some complex airspace. Terms such as VFR flyway, VFR corridor, Class B airspace VFR transition route, and terminal area VFR route have been applied to such routes. These routes are generally found on VFR terminal area planning charts (TAC).



SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

National Security Areas (NSA)

NSAs consist of airspace of defined vertical and lateral dimensions established at locations where there is a requirement for increased security and safety of ground facilities. Flights in these areas may be temporarily suspended for any number of reasons.

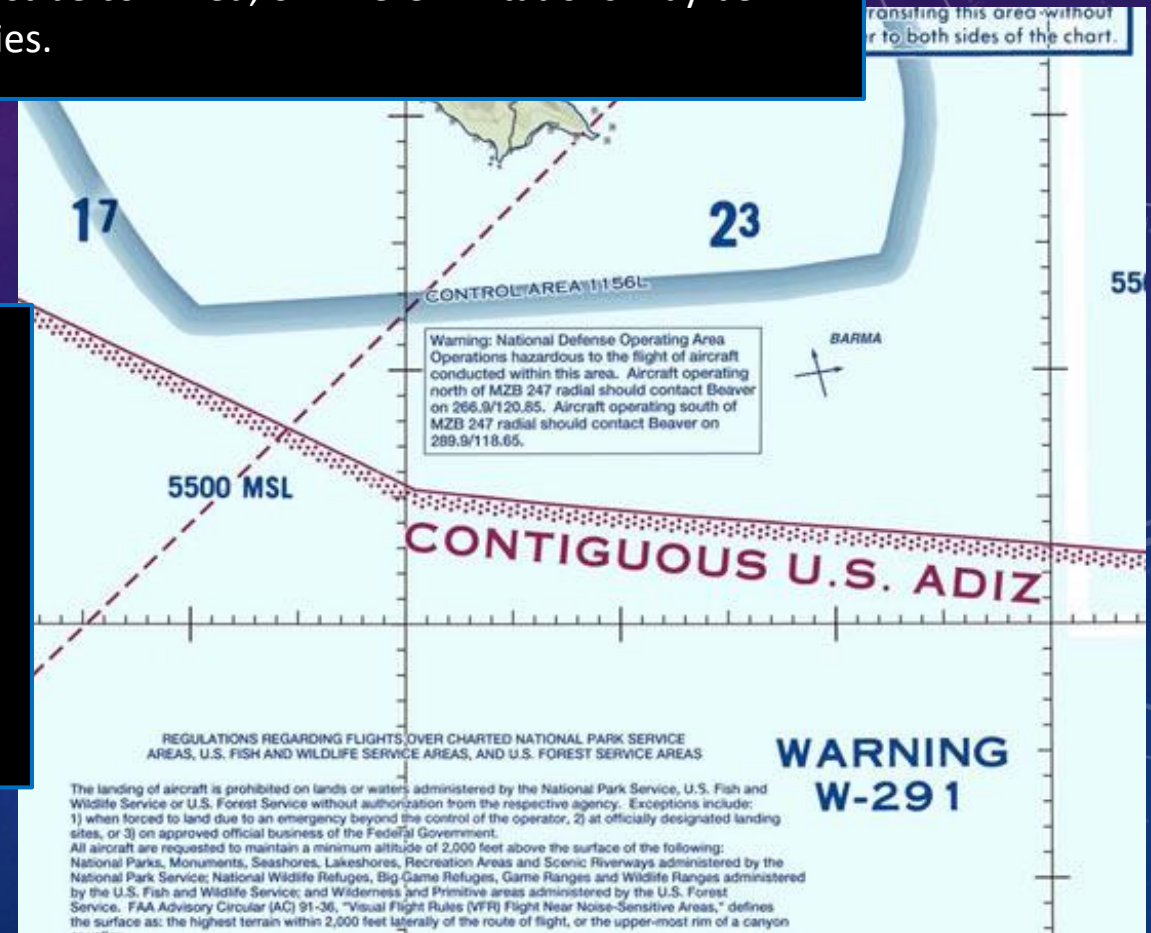


SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Air Defense Identification Zones (ADIZ)

All aircraft entering U.S. domestic airspace from points outside must provide for identification prior to entry or exit. ADIZs have been established to assist in early identification of aircraft in the vicinity of international U.S. airspace boundaries. For Defense VFR (DVFR) flights, the estimated time of ADIZ penetration must be filed with the appropriate aeronautical facility at least 15 minutes before penetration.

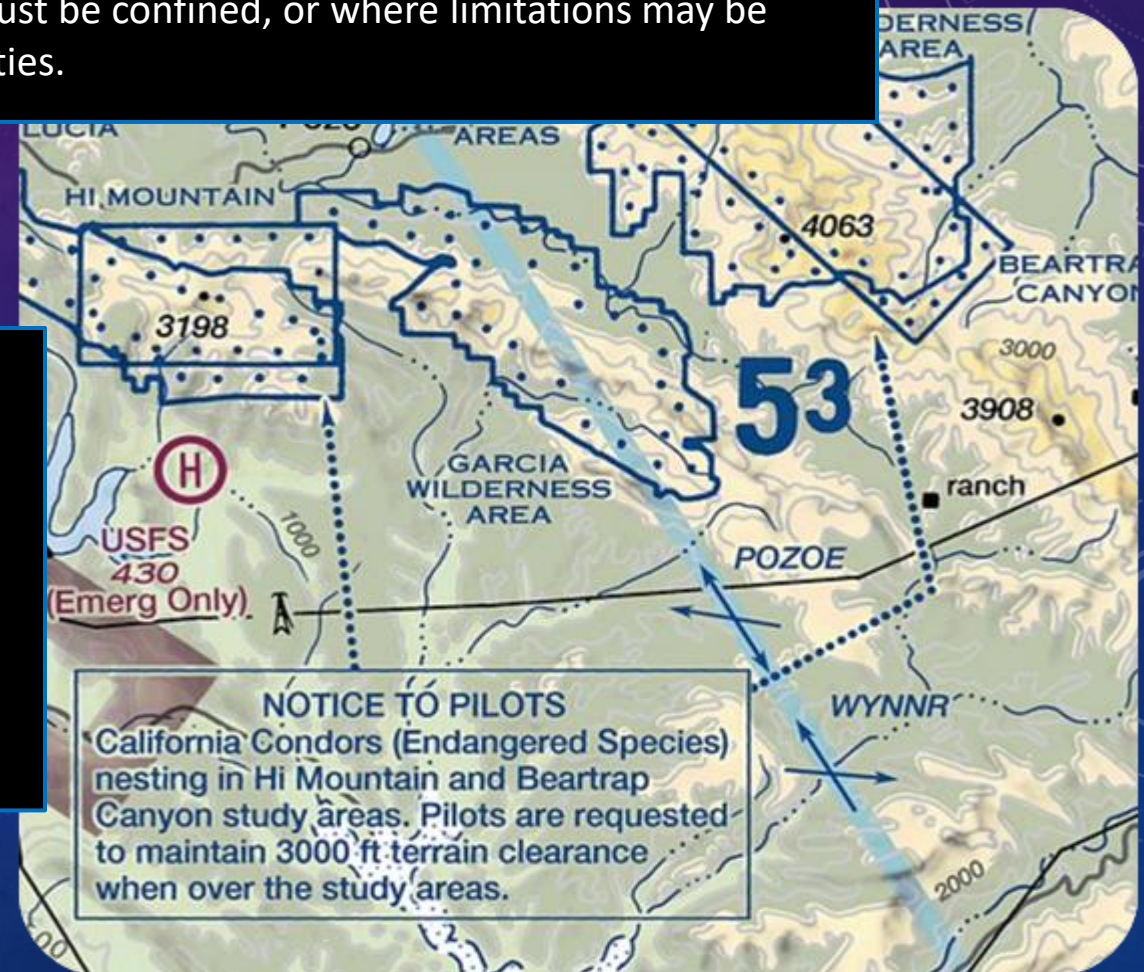


SPECIAL USE AIRSPACE

This is the designation for airspace in which certain activities must be confined, or where limitations may be imposed on aircraft operations that are not part of those activities.

Wilderness Areas

Visual Flight Rules (VFR) Flight Near Noise-Sensitive Areas, defines the surface of a national park area (including parks, forests, primitive areas, wilderness areas, recreational areas, national seashores, national monuments, national lakeshores, and national wildlife refuge and range areas) as: the highest terrain within 2,000 feet laterally of the route of flight, or the upper-most rim of a canyon or valley.



TEMPORARY FLIGHT RESTRICTIONS

Flights may be temporarily suspended in certain airspace and for certain activities. When the FAA does this, they will issue a Temporary Flight Restriction (TFR).

Examples of TFRs

- Protection of public figures.
- Provide a safe area for disaster relief.
- Prevent unsafe congestion of sight-seeing aircraft.
- Provide a safe area for space agency operations.

It is the pilot responsibility to notice and avoid TFRs along their route of flight (not ATC's).



LESSON SUMMARY

In this lesson we discussed the VFR weather minimums, entry requirements, and dimensions for: Class A, B, C, D, E, and G Airspaces. We also discussed the various types of special use airspace and the function of TFRs.

