Welcome…

Join WINGS Pilot Program!

EARN YOUR WINGS!

WELCOME TO:

Aviation

AIRSPACE

A Knowledge Program compiled & edited by Ron Berinstein

PHOTOGRAPHY AND DESIGN — RON BERINSTEIN

Are there boundaries?

Safety demands them!

- VFR Aircraft Separation
- IFR Aircraft Separation
- Airline Arrivals
- Airline Departures
- Terrain Motivated Issues, and…

- Hundreds of thousands of passengers being flown in & out of the basin daily plus,
- Military operations
- Air Taxi operations
- Commercial operations
- Emergency, Police, Fire, & Media ops &
- The General Aviation fleet operations!

The National Airspace System

- Developed to insure safe arrivals, departures and en route travel operations for all of those that are a part of the aviation spectrum.
- The NAS is the network of United States Airspace, air navigation facilities, equipment, services, airports or landing areas, aeronautical charts, information/services, rules, regulations, procedures, technical information, manpower, and material.

Source FAA-H-8083-15A

- Included are system components shared jointly with the military.
- The system's present configuration is a reflection of the technological advances concerning the speed and altitude capability of jet aircraft, as well as the complexity of microchip & satellite-based navigation equipment.
- To conform to international aviation standards the United States adopted the primary elements of the classification system developed by the International Civil Aviation Organization (ICAO).

Source FAA-H-8083-15A

- A general discussion about airspace classification follows…

- Detailed information on the classification of airspace, operating procedures, and restrictions, is found in the Aeronautical Information Manual (AIM).

Source FAA-H-8083-15A

Two (2) Forms of Airspace

The <u>two categories</u> of airspace are:

Regulatory and **Non-regulatory**

Examples of Regulatory Space:

* Prohibited Areas
* Restricted Areas

Examples of Non-Regulatory Space:

* Warning Areas
* MOA Areas

Within these two categories there are four types:

Controlled,

Uncontrolled,

Special use, and

Other airspace.

Let's begin with:

The two categories of airspace are:
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Uncontrolled,
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Other airspace.

Controlled Airspace

- Class A
- Class B
- Class C
- Class D
- Class E

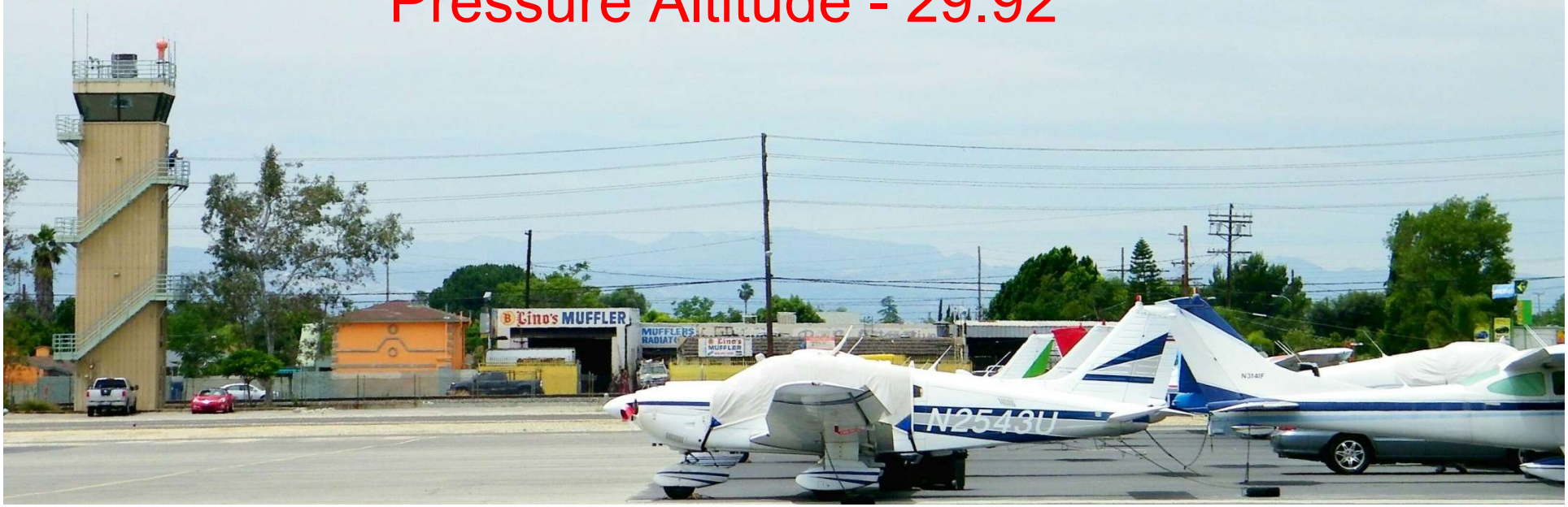
5 Different U.S. Classes

Class A:

- All airspace from 18,000’ up to and including FL600 within the 48 contiguous States (including District of Columbia) and most of Alaska plus:
- The airspace overlying the waters within 12 nautical miles (NM) of the coast *Aim 3-2-2*

- No Class A over Hawaii
- No upper limit for Victor Airways in Hawaii
- Class A airspace is not specifically charted.

- ALL aircraft MUST BE IFR unless otherwise authorized.
- NO VFR (unless for the purposes of lost communications)
- No Minimum flight visibility or distance from clouds is specified.
- Altimeter setting for all aircraft: Pressure Altitude - 29.92”




Class E
FL600
Class A
18,000 MSL
Class E
Lino's MUFFLER
N2543U

Class B:

- Generally airspace from the **surface to 10,000 MSL** surrounding the nation's busiest airports in terms of airport operations, or passenger movement. Like LAX.
- The configuration of each Class B airspace area is individually tailored. It consists of a surface area, and two or more layers. Some Class B airspace areas resemble upside-down wedding cakes, and are **designed to contain all published instrument procedures** once an aircraft enters the airspace. *AIM 3-2-3*

- Clearance is Required to Enter Class B!
- It is most often accepted that you must hear the words, “cleared into _____ Class B…” 91.131
- VFR pilots are provided sequencing and separation from other aircraft while operating within Class B airspace.

REFERENCE- *AIM Terminal Radar Services for VFR Aircraft, Paragraph 4-1-17***.**

- Deviating from a Clearance is acceptable only in an emergency, when there is a traffic alert and a TCAS resolution (91.123(a).
- Unsure regarding a clearance? Get clarification right away. (91.123(a).
- Except in an emergency, no person may operate an aircraft contrary to an ATC instruction in an area in which air traffic control is exercised. (91.123(b).

- VFR Operations require:
  - 3 Miles Visibility
  - Clear of Clouds
  - 1,000’ Ceiling
- Mode C Transponder
- Operable two way radio with appropriate frequency capability

- IFR Operations require:
  * VOR or Tacan (91.131)
  * Mode C Transponder
  * Operable two way radio with appropriate frequency capability.

- Large (over 12,500 lbs) or Turbine Powered airplanes (operating to/from a primary airport in the area) must operate at, or above the floors while within the lateral limits of the area, even if on a visual approach.
- Unless required by cloud criteria. A large or Turbine powered craft must enter the traffic pattern at 1500’ AGL and maintain 1500’ AGL until further decent is required for a safe landing.

- A Large or Turbine Powered plane when approaching a runway served by an ILS must fly at or above glide slope between the outer and middle marker.

- ANY plane when approaching a runway served by a VASI shall maintain at or above glide path until a lower altitude is necessary for a safe landing.

Class B Speed Limits:

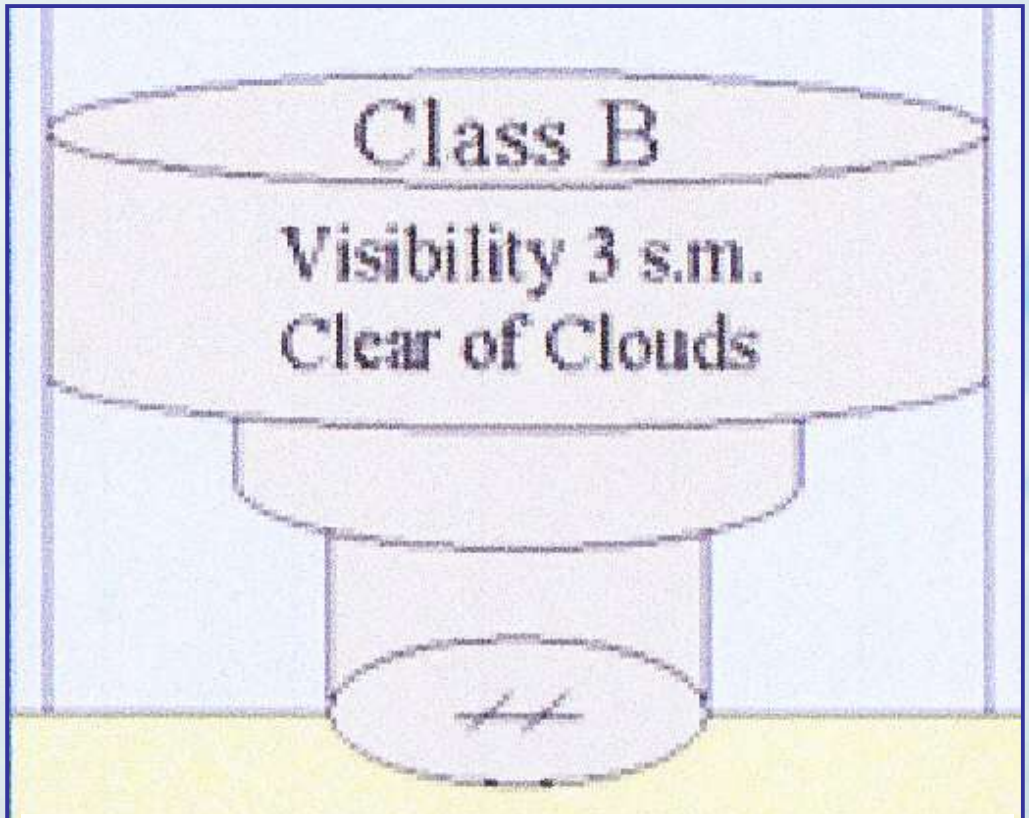
- 250 KIAS below 10,000’
- 200 KIAS below the floor or in a VFR corridor

250 KIAS must not be exceeded
even if told “maintain best forward speed.”

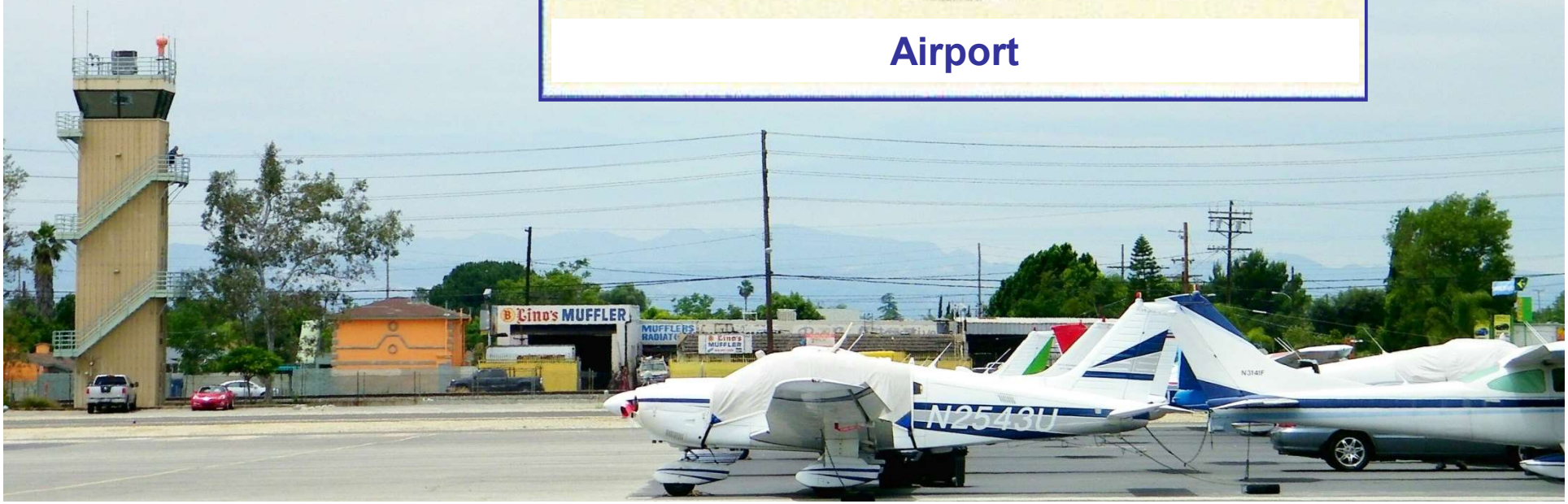
If assigned 300kts or greater inbound (10,000” or above), and then you are directed to descend to 8,000’, you must slow to 250 KIAS, before descending below 10,000.

Class B Pilot Qualifications:

- PIC must have at least a Private Pilot's Certificate, or
- Be a student pilot, or recreational pilot who is seeking a private pilot certification and has met the requirements of section: 61.95


Class B
Visibility 3 s.m.
Clear of Clouds

Airport


Lino's MUFFLER
N2543U

Class C:

- Generally airspace from the **surface to 4,000** feet above the airport elevation (charted in MSL) surrounding those airports that:

- Have an **operational control tower**, and
- Serviced by a **radar approach control**, and
- Have a certain number of IFR operations or passenger enplanements. *AIM 3-2-4*

- The configuration of each Class C area is individually tailored, but, the airspace usually consists of a surface area with **a Five NM radius**, and,

- An outer circle with a **Ten NM radius** that extends from **1,200 feet to 4,000 feet above the airport elevation**, and an outer area.

- Each aircraft ***MUST ESTABLISH* two-way radio communications** with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace.

- ***Radio Call*:** Who you are. Where you are. What you want.

- **Class C VFR Requirements**:
  - * Visibility 3 SM
  - * Cloud clearance:
    - 500’ Below
    - 1000’ Above
    - 2000’ Horizontal
  - * Ceiling 1000’

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  - * Ceiling 1000’

- **Class C Avionics Requirements**:
  - * Two way radio with appropriate frequency capability
  - * Transponder with Mode C

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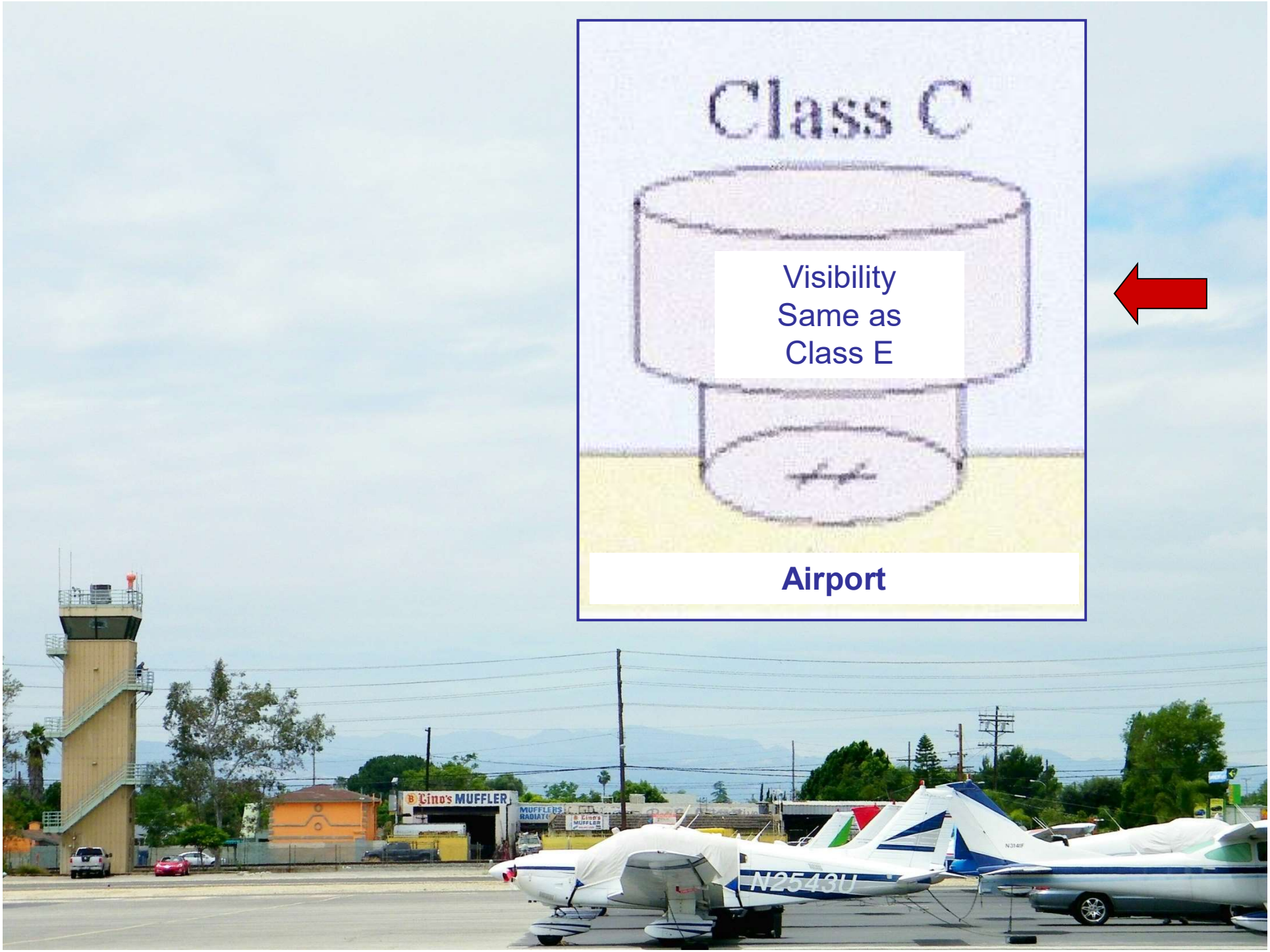
  - * Transponder with Mode C

- When departing a satellite airport within Class C or D airspace,

  you must establish radio contact "as soon as practical" after departing.

- Large or Turbine Powered planes:
  * Same altitude requirements for approach as in Class B airspace
  * However, re: Speed Limit:
    No plane may operate at, or below 2,500 AGL within 4 NM of a primary Class C airport at more than 200 KIAS.
    - any speed in excess of 200 KIAS must be specifically assigned by ATC.


Class C
Visibility
Same as
Class E
Airport
Lino's MUFFLER
N2543U

Class D:

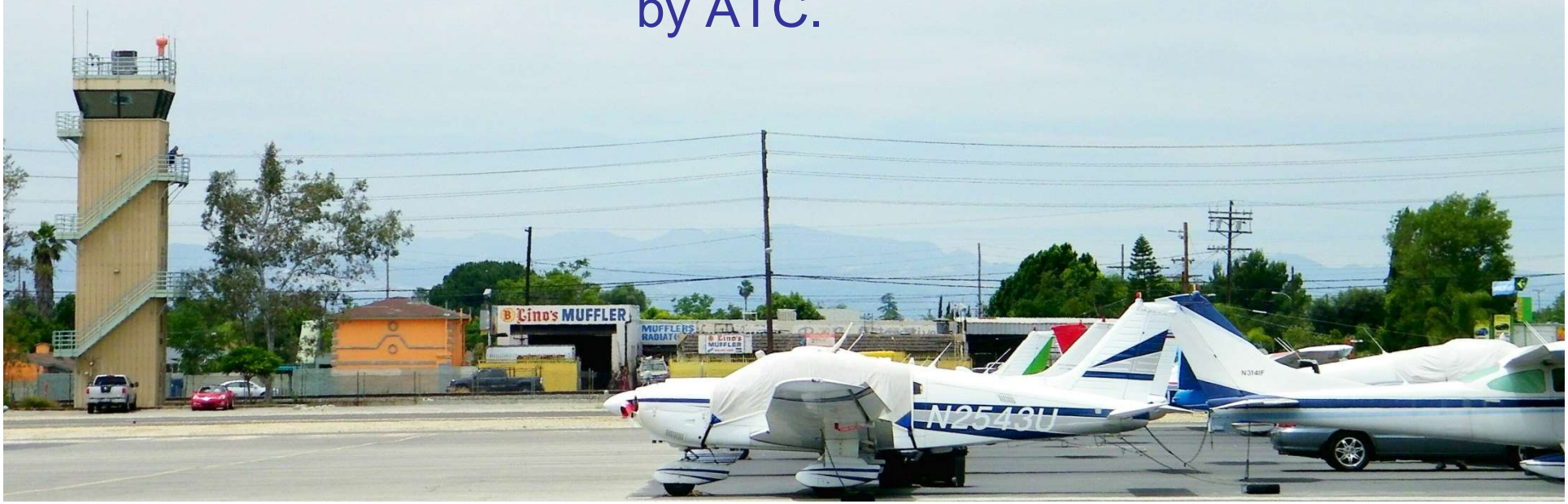
- Generally airspace from the **surface to 2,500** feet above the airport elevation (charted in MSL) surrounding those airports that have an **operational control tower,** but usually no radar.
- The configuration of each Class D airspace area is individually tailored, but normally a **circular area 4 NM around the primary airport**, and:
- When instrument procedures are published, the airspace is normally designed to contain the procedures. *AIM 3-2-5*

- Arrival extensions for instrument approach procedures (IAPs) may be Class D or Class E airspace.

- Unless otherwise authorized, each aircraft must **Establish two-way Radio Communications** with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace.

- **Class D VFR Requirements:**
  - * Visibility 3 SM
  - * Cloud Clearance:
    - 500’ Below
    - 1000’ Above
    - 2000’ Horizontal
  - * Ceiling 1000’
- **Class D Avionics Required:**
  - * Two way Radio

- Large or Turbine Powered planes:
  - * Same altitude requirements for approach as in Class B & C airspace
  - * Speed Limit:
    - - Same as in Class C airspace
    - - any speed in excess of 200 KIAS must be specifically assigned by ATC.



- **Class D airspace must have Weather Reporting**

  * After the tower closes in the evening the airspace will revert to either Class E (controlled) or Class G (uncontrolled) usually depending upon the availability of a certified weather observer, or automated system ASOS or AWOS

  * The A/FD will detail the type of airspace that Class D will revert to when the tower is closed.

- Some Class D towers have a “repeater scope” that allow the controllers to look at someone else’s radar screen.

- Often the controllers at Class D airports are not FAA employees, but are very experienced FAA Tower veterans who had to retire at 56 years old. These contract towers are operated by private firms, and are referred to as “NFCT,” i.e. Non-Federal Control Tower.

- They are subject to the same rules and regulations as Federal Towers.

Repeater Scope at KWHP


Class D
Visibility
Same as
Class E
Airport
Lino's MUFFLER
N2543U

Class E:

- **If the airspace is not Class A, B, C, or D, and is controlled airspace, then it is Class E airspace.**
- Class E airspace extends upward from either the surface, or a designated altitude to the overlying, or adjacent controlled airspace.
- When designated as a surface area, the airspace via extensions, is configured to contain all instrument procedures, and a means of communicating with ATC all the way to the ground. 71.71 91.127 91.155 AIM 3-1-4 3-2-1 3-2-5 3-2-6 4-1-18 4-3-26 4-4-12 5-5-6 FAA-H-8083-15A FAA-H-8083-25A

- **Approved weather reporting** (FSS or ASOS/ AWOS) is a primary requirement for Class E.
- **Transition Areas** beginning at either **700' or at 1,200'** AGL used to transition to and from the terminal or en route environment, and en route domestic and offshore airspace areas designated below 18,000 feet MSL.

- **Federal (Victor) Airways** from 1200'AGL upward to but not including 18,000' MSL.
- **Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL (excluding 1500' AGL)** over the United States, including that airspace overlying the waters within 12 NM of the coast of the 48 contiguous states and Alaska, up to but not including 18,000 feet MSL, and,
- **The airspace above FL 600.**

Source: AIM 3-2-6

Class E VFR Minimums:

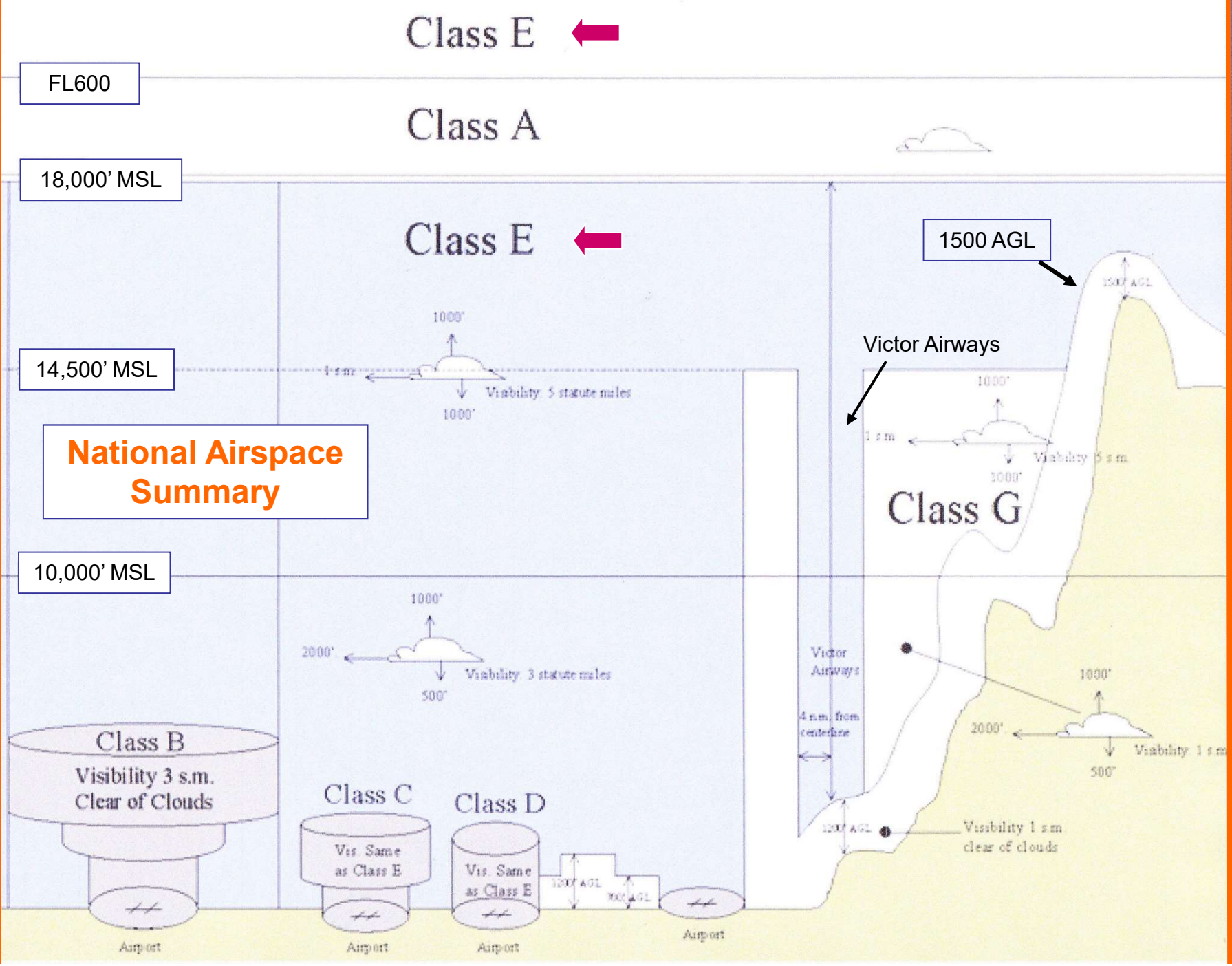
* **Less** than 10,000 MSL:
  - Visibility 3 SM
  - Cloud Clearance:
    - 500’ Below
    - 1000’ Above
    - 2000’ Horizontal

* **10,000’ MSL** or above:
  - Visibility 5 SM
  - Cloud Clearance:
    - 1000’ Below
    - 1000’ Above
    - 1 SM Horizontal

Class E Equipment Required:

* Transponder w/ Mode C for operation over 10,000' excluding 2500'AGL *FAR 91.215*

National Airspace Summary



Let’s continue with:

The two categories of airspace are:
Regulatory and **Non-Regulatory**

Within these two categories there are four types:

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Uncontrolled,
Special use, and
Other airspace.

Class F

- **An ICAO Airspace Classification**
- **<u>Not Used in the United States</u>**
- **The term *is Used in Canada*, but its use is different than the ICAO meaning, contributing to some degree of confusion.**

Class G

- Uncontrolled airspace or Class G airspace is the portion of the airspace that has not been designated as Class A, B, C, D, or E. It is therefore uncontrolled airspace. *AIM 3-3-1*

- **Class G airspace extends from the surface to the base of the overlying Class E airspace.**

- **That could mean up to:**
  * 700’ AGL,
  * 1200’ AGL or even
  * **14,500’ MSL** Detailed on Navigation Charts. (all airspace above 14,500’ MSL is Controlled)

- It should be noted that there are **certain exceptions** where Class G extends **above 1,200 feet AGL**. This is usually either over mountainous terrain (e.g., some areas in the Rocky Mountains), or over very sparsely populated areas (e.g., some parts of Montana).

- **Although ATC has no authority** or responsibility to control air traffic, pilots should remember there are visual flight rules **(VFR) minimums** which **apply to Class G airspace.**

Class G VFR Minimums: Part 1

- **1200' or less above the surface**
  - * Day - Visibility 1 SM
    Clear of Clouds
  - * Night - Visibility 3 SM
    Cloud Clearance:
    500' Below
    1000' Above
    2000' Horizontal
  - * *In the airport traffic pattern within ½ mile of the runway:* 1 SM, Clear of Clouds.

Class G VFR Minimums:

LIGHT SPORT:

CAN NOT FLY AT NIGHT or

WITH VISIBILITY LESS THAN 3 MILES!

and can NOT FLY on top of clouds!
or over 10,000’
unless they are 2000’ AGL

Class G VFR Minimums: Part 2

- **More than 1200' AGL** but less than 10,000' MSL
  - * Day - Visibility 1 SM
    Cloud Clearance:
    500' Below
    1000' Above
    2000' Horizontal
  - * Night - Visibility 3 SM
    Cloud Clearance:
    500' Below
    1000' Above
    2000' Horizontal

Class G VFR Minimums: Part 3

- **More than 1200' AGL** and **MORE** than 10,000' MSL

  * Day - Visibility 5 SM
    Cloud Clearance:
    1000' Below
    1000' Above
    1SM Horizontal

  * Night - Visibility 5 SM
    Cloud Clearance:
    1000' Below
    1000' Above
    1SM Horizontal

Same as Day

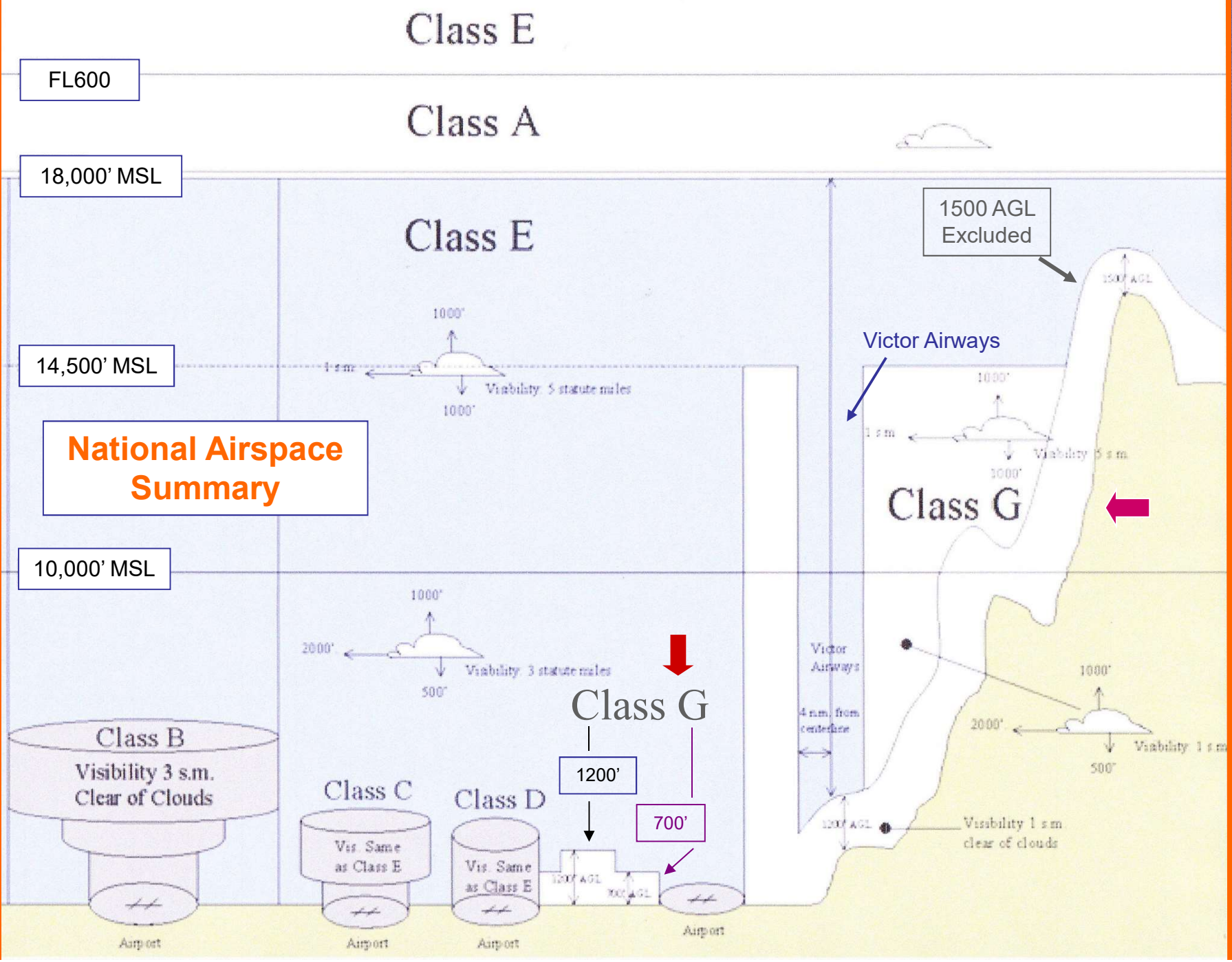
Class G Equipment Required:

* Transponder w/ Mode C for operation over 10,000' excluding 2500'AGL *FAR 91.213*

- It is perfectly legal to fly IFR in Uncontrolled Airspace without an IFR flight plan or clearance.
- Clearances are not issued for IFR flight in Class G airspace.
- You can still operate under IFR without a flight plan or ATC clearance.
- You must be IFR rated and current. Your airplane must be approved for IFR flight. You must cruise at an appropriate IFR altitude (91.179) adhere to minimum altitudes (91.177) and comply with other IFR requirements of 91 subpart B that apply to IFR such as fuel reserves and VOR checks.

- However, the altimeter, Mode C, and static system checks of (91.411), need not be current.
- You do not need to maintain cloud separation in “Class G” (operative words) if you are conducting flight under IFR.
- Therefore, when getting an IFR clearance on the ground, the clearance will usually include the phrase, “upon entering controlled airspace.” (91.173) You will get a “void time.” Your clearance will not actually begin until you enter Class E airspace. At that time, all regular requirements for IFR flight apply!

National Airspace Summary



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Special Use Airspace

- Special use airspace or special area of operation (SAO) 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.
- Certain special use airspace areas can create limitations on the mixed use of airspace.
- The special use airspace is depicted on navigational charts. The area name or number, effective altitude, time, conditions of operation, and the controlling agency is located on a chart panel location.

Included Are:

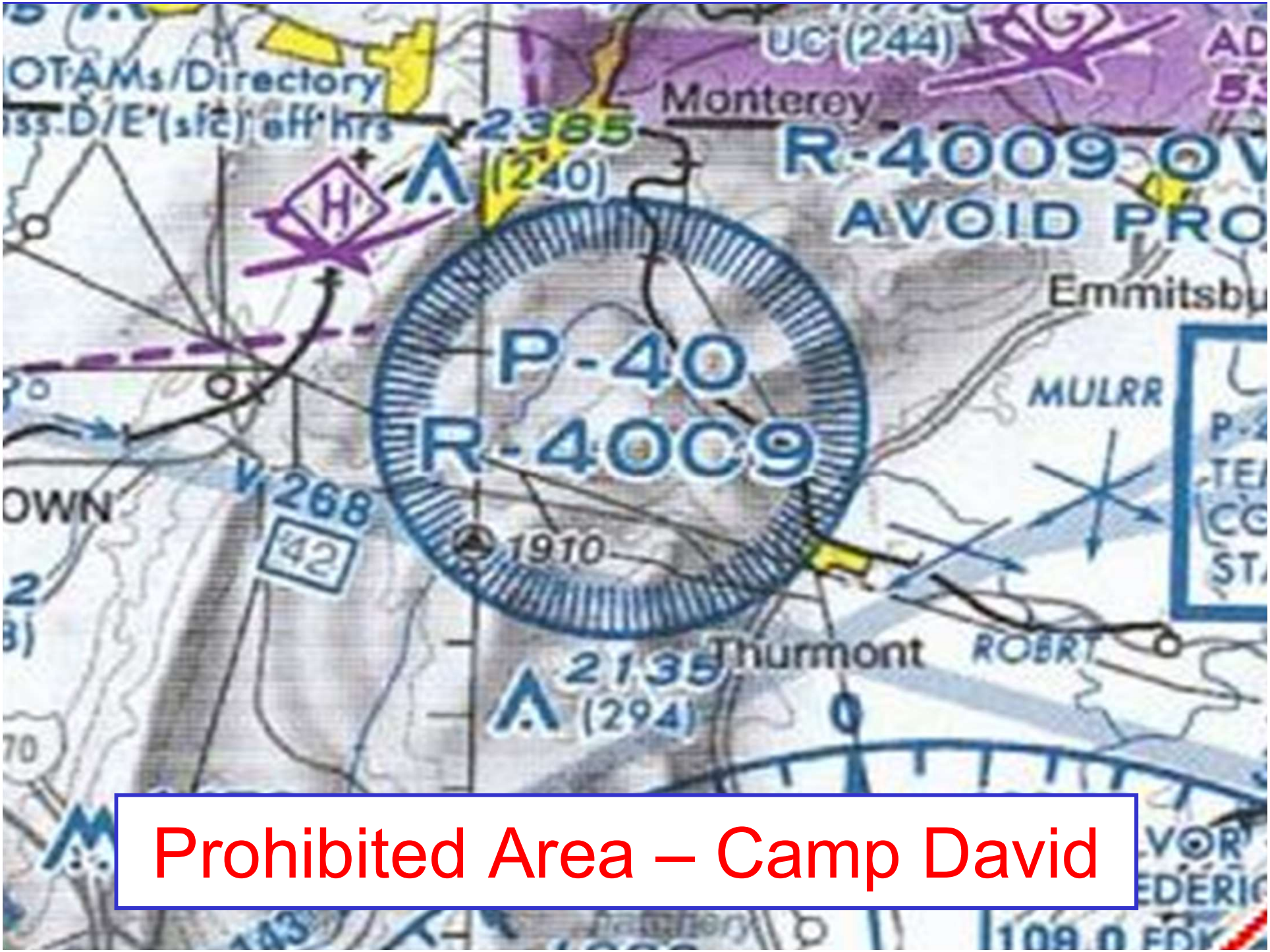
- Prohibited areas
- Restricted areas
- Warning areas
- Military operation areas (MOAs)
- Alert areas
- Controlled firing areas (CFAs)

- **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.

These areas are published in the Federal Register and are depicted on aeronautical charts.

- They are charted as a “P” followed by a number.
- *Examples* of prohibited areas include Camp David and the National Mall in Washington, D.C., where the White House and the Congressional buildings are located.
- Remember – *Flight is* ***PROHIBITED!***



Prohibited Area – Camp David

“Kindly Follow Me Please”

F-15C Over Washington D.C.

- **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.

Activities within these areas must be confined because of their nature, or limitations may be imposed upon aircraft operations that are not a part of those activities, or both.

Restricted areas denote the existence of unusual, often invisible, hazards to aircraft (e.g., artillery firing, aerial gunnery, or guided missiles).

- IFR flights may be authorized to transit the airspace and are routed accordingly.
- Penetration of restricted areas without authorization from the using or controlling agency may be **extremely hazardous** to the aircraft and its occupants.
- ATC facilities apply the following procedures when aircraft are operating on an IFR clearance (including those cleared by ATC to maintain VFR on top) via a route which lies within joint-use restricted airspace:

1. If the restricted area is **not active** and has been released to the Federal Aviation Administration (FAA), the ATC facility allows the aircraft to operate in the restricted airspace without issuing specific clearance for it to do so.

2. If the restricted area **is active** and has not been released to the FAA, the ATC facility issues a clearance which ensures the aircraft avoids the restricted airspace.

Restricted areas are charted with an “R” followed by a number (e.g., R-4401) and are depicted on the en route chart appropriate for use at the altitude or FL being flown. Restricted area information can be obtained on the chart panel.

- *No Person may operate an aircraft* in a Restricted Area unless advance permission has been granted.

- Or, you could **GET FIRED** (upon, for REAL)!

• 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 purpose of such areas is to warn nonparticipating pilots of the potential danger.
- A **warning area** may be located over domestic or international waters or both. The airspace is designated with a “W” followed by a number (e.g., W-237). Also, check for “Control Areas in this vicinity.

- *Remember:* The purpose of a Warning Area is to warn pilots of potentially hazardous consequences to non participating aircraft.

- It is advisable to contact the controlling agency and request advisories.

• Military Operation areas (MOAs)

- MOAs consist of airspace with defined vertical and lateral limits established for the purpose of separating certain military training activities from IFR traffic.
- Whenever an MOA is being used, nonparticipating IFR traffic may be cleared through an MOA if IFR separation can be provided by ATC.
- Otherwise, ATC reroutes or restricts nonparticipating IFR traffic
- MOAs are depicted on sectional, VFR terminal area, and en route low altitude charts and are not numbered (e.g., “Camden Ridge MOA”). However, the MOA is also further defined on the back of the sectional charts with times of operation, altitudes affected, and the controlling agency.

- VFR pilots should exercise extreme caution when operating within a Military Operation Area.
- Prior to entering an active area, pilots should contact the controlling agency for traffic advisories!

- **Alert areas**

- Alert areas are depicted on aeronautical charts with an “A” followed by a number (e.g., 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. All activity within an alert area shall be conducted in accordance with regulations, without waiver, and pilots of participating aircraft, as well as pilots transiting the area, shall be equally responsible for collision avoidance.

"Remember Me – Alert Areas, are where I have the Need for Speed!"

F-15C Over Washington D.C.

- **Controlled Firing areas**

- CFAs contain activities, which, if not conducted in a controlled environment, could be hazardous to nonparticipating aircraft.

- The difference between CFAs and other special use airspace is that activities must be suspended when a spotter aircraft, radar, or ground lookout position indicates an aircraft might be approaching the area.

- There is no need to chart CFAs since they do not cause a nonparticipating aircraft to change its flight path.

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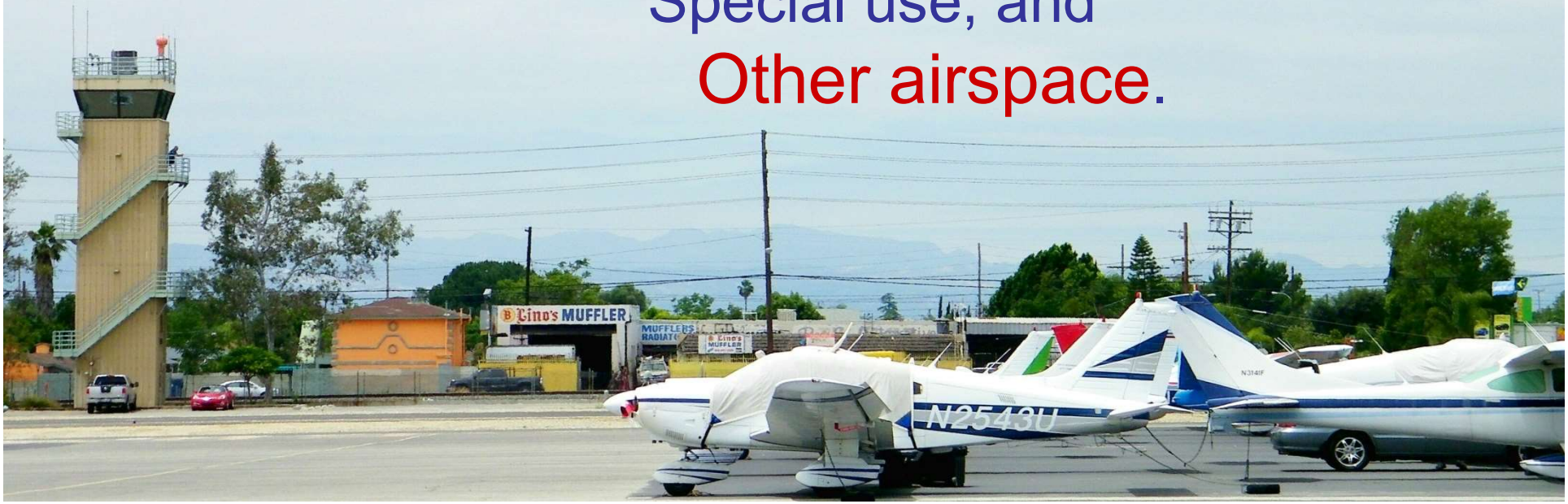


Other Airspace:

- Local airport advisory
- Military training route (MTR)
- Temporary flight restriction (TFR)
- Parachute jump aircraft operations
- Published VFR routes
- Terminal radar service area (TRSA)
- National security area (NSA)

Local Airport Advisory (LAA)

- A service provided by facilities, which are located on the landing airport.
- It has a discrete ground-to-air communication frequency, or the tower frequency when the tower is closed.
- Automated weather reporting with voice broadcasting, a continuous ASOS/AWOS data display, and other continuous direct reading instruments, or manual observations available to the specialist.

Military Training Routes (MTRs)

- 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.

- Routes are identified as IFR (IR), and VFR (VR), followed by a number. MTRs with no segment above 1,500 feet AGL are identified by four number characters (e.g., IR1206, VR1207). MTRs that include one or more segments above 1,500 feet AGL are identified by three number characters (e.g., IR206, VR207).

- VFR sectional charts depict military training activities such as IR, VR, MOA, restricted area, warning area, and alert area information.

Temorary Flight Restrictions (TFRs)

- A flight data center (FDC) Notice to Airmen (NOTAM) is issued to designate a TFR.
- The NOTAM begins with the phrase “FLIGHT RESTRICTIONS” followed by the location of the temporary restriction, effective time period, area defined in statute miles, and altitudes affected.
- The NOTAM also contains the FAA coordination facility and telephone number, the reason for the restriction, and any other information deemed appropriate.
- The pilot should check the NOTAMs as part of flight planning.

- Since the events of September 11, 2001, the use of TFRs has become much more common.

- There have been a number of incidents of aircraft incursions into TFRs, which have resulted in pilots undergoing security investigations and certificate suspensions.

- It is a pilot's responsibility to be aware of TFRs in their proposed area of flight. One way to check is to visit the FAA website, www.TFR.faa.gov, and verify that there is not a TFR in the area.

- *Here is a TFR example:*

Federal Aviation Administration

FAA.gov Home

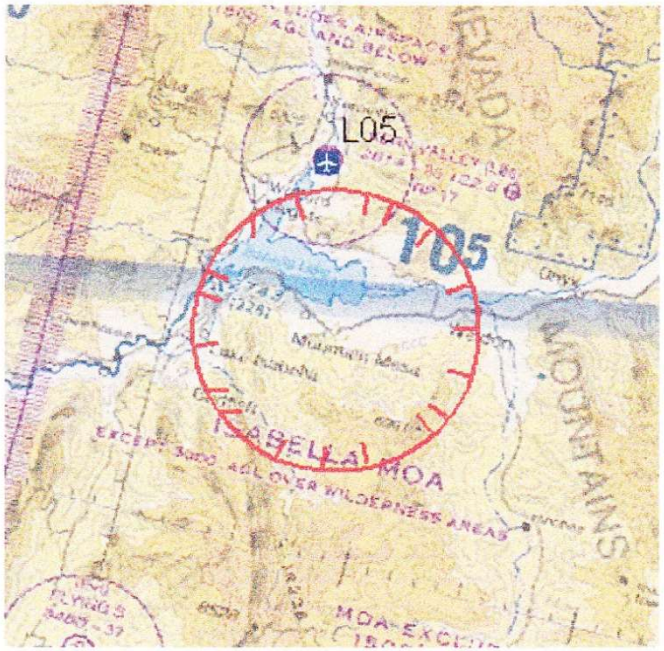
TFR List | TFR Map | Map Airports | TFR Help | PilotWeb

SUA

NOTAM

Number :	**FDC 1/5137** Download shapefiles
Issue Date :	May 28, 2011 at 0017 UTC
Location :	LAKE ISABELLACA LAKE ISABELLA., California near TULE VOR/DME (TTE)
Beginning Date and Time :	Effective Immediately
Ending Date and Time :	Until further notice
Reason for NOTAM :	TO PROVIDE A SAFE ENVIRONMENT FOR FIRE FIGHTING AIRCRAFT OPERATIONS
Type :	Hazards
Replaced NOTAM(s) :	N/A
Pilots May Contact :	LOS ANGELES (ZLA) Center, 661-265-8205

Jump To: **Affected Areas**
Operating Restrictions and Requirements
Other Information



Affected Area(s)

Top

Click for Sectional

NOTAM Text

Airspace Definition:

Center: On the TULE VOR/DME (TTE) 102 degree radial at 35.3 nautical miles. (Latitude: 35°38'00"N, Longitude: 118°23'00"W)

Radius: 5 nautical miles

Altitude: From the surface up to and including 11000 feet MSL

Effective Date(s):

From May 28, 2011 at 0017 UTC

Until further notice

TFR from MAY 28, 2011 [Educational Purposes Only]

Operating Restrictions and Requirements

Top

No pilots may operate an aircraft in the areas covered by this NOTAM (except as described).

Other Information:

Top

ARTCC:	ZLA - Los Angeles Center
Point of Contact:	SEQUOIA NATIONAL FOREST Telephone 559-781-5780 Frequency 135.975
Authority:	Title 14 CFR section 91.137(a)(2)

Depicted TFR data may not be a complete listing. Pilots should not use the information on this website for flight planning purposes. For the latest information, call your local Flight Service Station at 1-800-WX-BRIEF.

Reasons for a TFR:

- Protect persons and property in the air or on the surface from an existing or imminent hazard.
- Provide a safe environment for the operation of disaster relief aircraft.
- Prevent an unsafe congestion of sightseeing aircraft above an incident or event, which may generate a high degree of public interest.
- Protect declared national disasters for humanitarian reasons in the State of Hawaii.
- Protect the President, Vice President, or other public figures.
- Provide a safe environment for space agency operations.

TFR from MAY 28, 2011 [Educational Purposes Only]

Parachute Jump Aircraft Ops

- Parachute jump aircraft operations are published in the Airport/Facility Directory (A/FD).
- Sites that are used frequently are depicted on sectional charts.

Published VFR Routes

- Published VFR routes are for transitioning around, under, or through some complex airspace.

Terms such as:

- VFR flyway, (VFR Flyway Routes are generally found on VFR terminal area planning charts),
- Corridor, and:
- Class B airspace VFR Transition Route, and/or Terminal Area VFR Route have been applied to such routes.

Terminal Radar Service Area

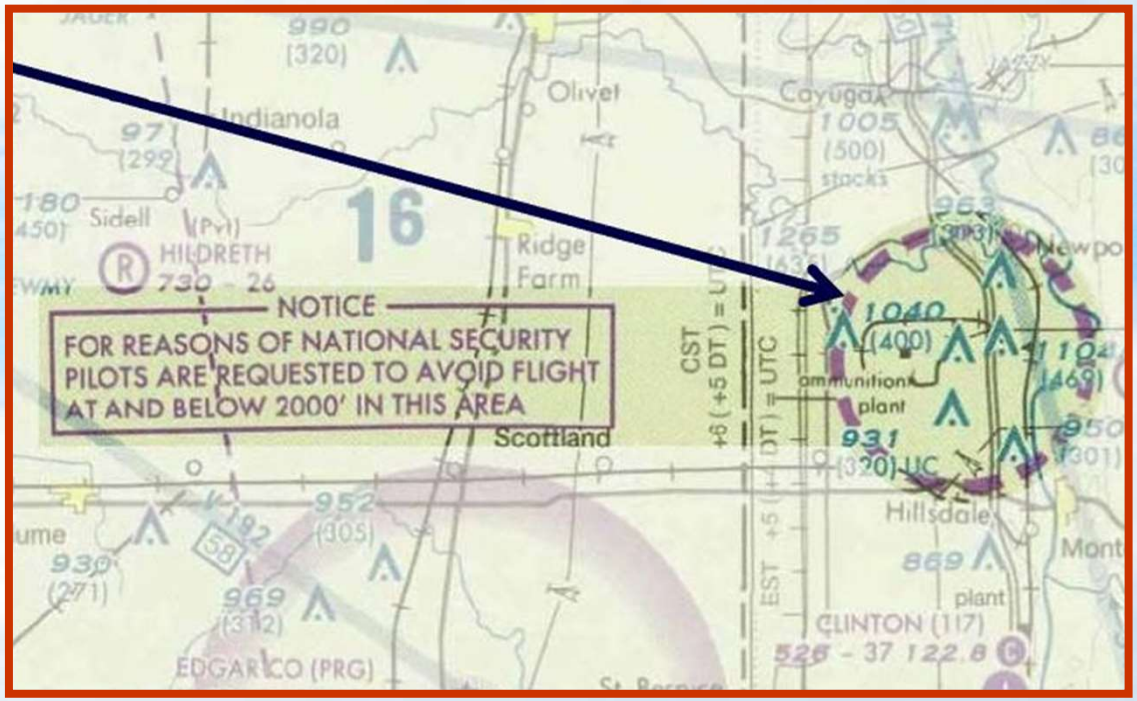
- TRSAs are areas where participating pilots can receive additional radar services. The purpose of the service is to provide separation between all IFR operations and participating VFR aircraft.

- The primary airport(s) within the TRSA become(s) Class D airspace.
- The remaining portion of the TRSA overlies other controlled airspace, which is normally Class E airspace beginning at 700 or 1,200 feet and established to transition to/ from the en route/terminal environment.
- TRSAs are depicted on VFR sectional charts and terminal area charts with a solid black line and altitudes for each segment.
- The Class D portion is charted with a blue segmented line.
- Participation in TRSA services is voluntary; however, pilots operating under VFR are encouraged to contact the radar approach control and take advantage of TRSA service.

National Security Areas (NSAs)

- 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.
- Flight in NSAs may be temporarily prohibited by regulation under the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 99, and
- prohibitions are disseminated via NOTAM.
- Pilots are requested to voluntarily avoid flying through these depicted areas.

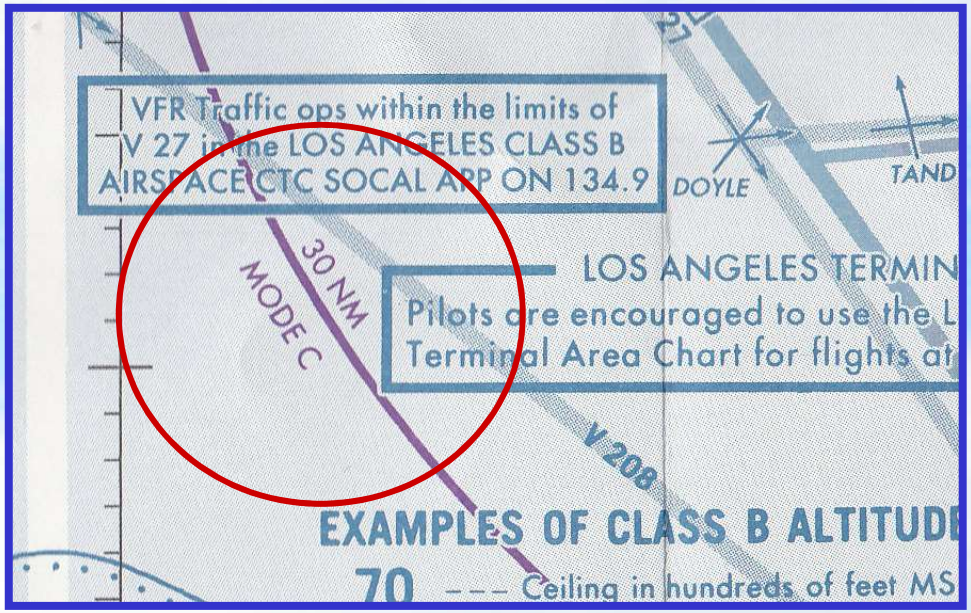
National Security Areas (NSAs)



How About:

- Mode C Veil
- Speed Limits
- Aerobatics
- Formation Flight
- ADIZ & DEWIZ

Mode C Veil



Mode C Transponder Required!

Speed Limits

- Below Floors & VFR Corridor – 200k Max.
- Below 10,000 MSL - 250k
- ‘ ABOVE 10,000 MSL – Maximum speed must be below Supersonic
- Specified Areas Only - Supersonic and Higher

Aerobatic Flight

Not normally legal:

- Over Congested Areas
- Over an Open Air Assembly
- In Class B, C, D, or E airspace designated for an airport
- Within 4NM of a Federal Airway centerline
- Below 1500’ AGL
- When Flight Visibility is below 3 Miles
- If the aircraft is not certified for Aerobatic Flight
- Without parachutes for all occupants if any intentional maneuver exceeds 60 degrees of bank, or 30 degrees of nose up or down.

Formation Flight

- No person can operate so close as to create a collision hazard
- No person may operate an aircraft in formation flight except by arrangement with the Pilot in Command of each aircraft in the formation.
- No person can fly passengers for hire in formation flight.
- The flight operates as a single aircraft w/regard to navigation & ATC procedures.
- Aircraft separation is the responsibility of the Flight Leader & other pilots.
- Standard Formation - 100’ vertically of leader - 1 mile laterally or longitudinally.

- Normally ATC communications are handled by the Flight Leader.
- Normally all aircraft, except the Flight Leader, will be asked to switch off their transponders.
- Two aircraft may be referred to as a “Flight of Two” by ATC.

ADIZ and DEWIZ

- The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

ADIZ and DEWIZ

- Domestic Air Defense Identification Zone an ADIZ within the U.S. along an international boundary of the U.S.
- Coastal Air Defense Identification Zone an ADIZ over the coastal waters of the U.S.
- Distant Early Warning Identification Zone an ADIZ over the coastal waters of the state of Alaska.

ADIZ and DEWIZ

- IFR or DVFR must be filed for all operations (some exceptions – AIM 5-6-1 (d.& e.) and Part 99)
- Two Way Radio required for most ops.
- Transponder w/Mode C required for all.
- DVFR Flights – estimated penetration times must be filed 15 minutes in advance except for Alaska (prior to penetration)
- Position Tolerances - Over land +/- 5 min. 10NM centerline. Over water +/- 5 minutes & within 20NM of intended track centerline.

The editor would like to acknowledge, and sincerely thank the following for their valuable contributions made while preparing this program:

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and (in alphabetical order):

Robert Illian CFII - Vista Aviation, Whiteman (KWHP) Airport

Darin Moody CFII - CP Aviation, Santa Paula (KSZP) Airport

"Landings. A good landing is any landing which you, the pilot, can walk away from unassisted. A great landing is one in which the airplane can immediately be used again" - Anonymous

Thank You and Fly Safe

“That’s what we’re trained to do.” – Chesley B. ‘Sully’ Sullenberger III