



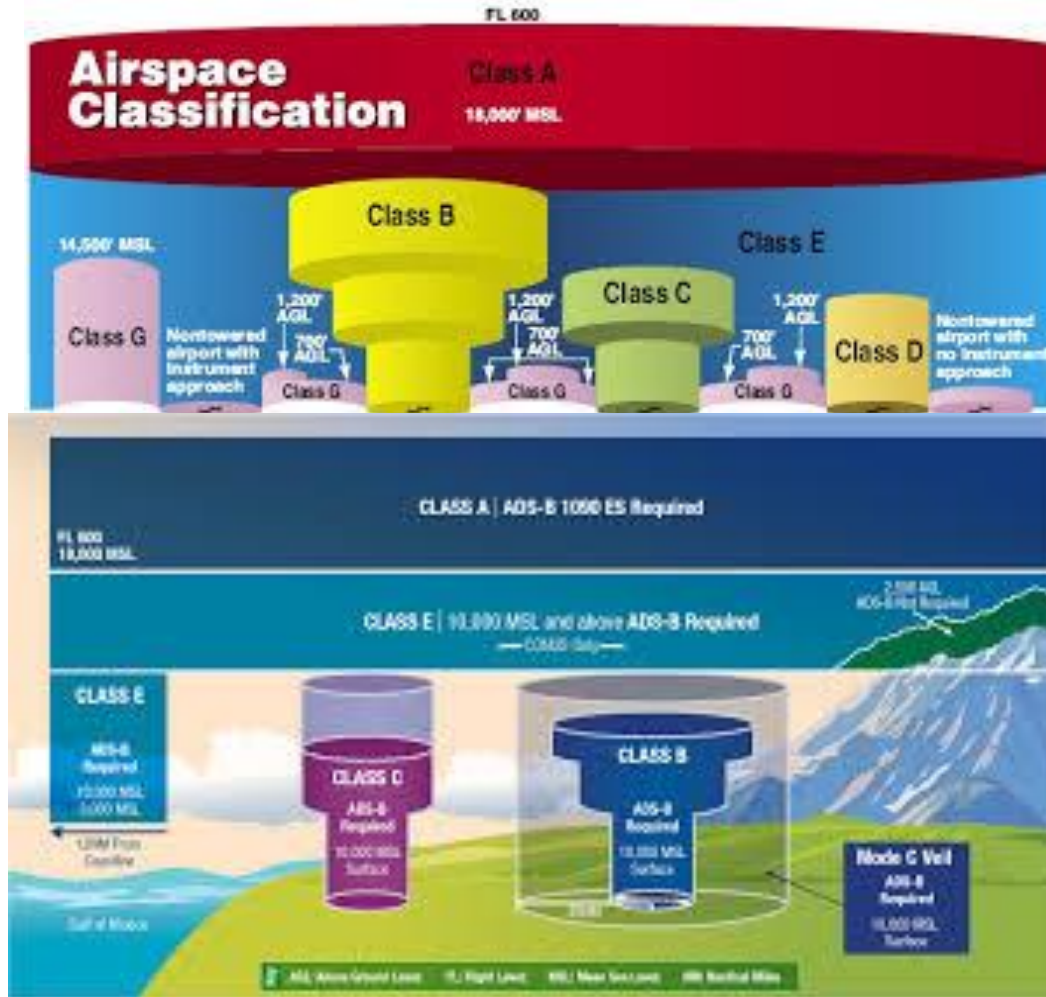
Regulations - Airspace

# Teaching Airspace

Pilots and CFIs struggle with this

# Teaching Airspace - A Systematic Approach

## How NOT to teach airspace



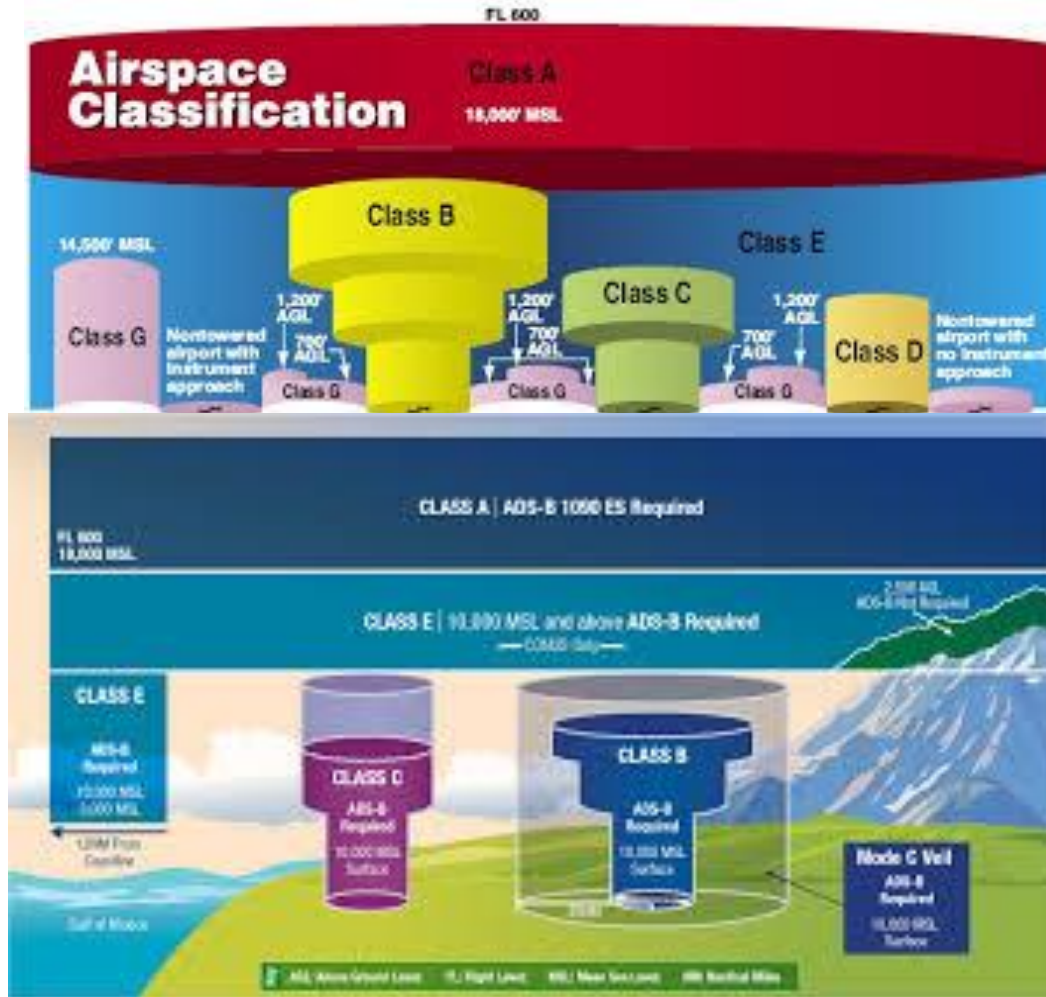
Airspace	Class A	Class B	Class C	Class D	Class E	Class G
Entry Requirements	ATC clearance	ATC clearance	Four-way communications	Four-way communications	Four-way communications	Four-way communications
Minimum/Max Qualifications	Instrument rating	Private Pilot (Student or Instrument) rating minimum apply	Student Pilot/PLA	Student Pilot/PLA	Student Pilot/PLA	Student Pilot/PLA
Two-Way Radio Communications	Yes	Yes	Yes	Yes	Yes, under 10,000' AGL	Yes
Special VFR Allowed	Yes	Yes	Yes	Yes	Yes	Yes
Visibility Minimum	N/A	3 statute miles	3 statute miles	3 statute miles	3 statute miles	1 statute mile
MSL Minimum Distance From Obsts	N/A	Clear of obsts	500' above, 1,000' above, 2,000' horizontal	500' above, 1,000' above, 2,000' horizontal	500' above, 1,000' above, 2,000' horizontal	Clear of obsts
MSL Airport Separation	N/A	MS	MS airport	5000' horizontal	5000'	None
Traffic Advisories	Yes	Yes	Yes	Worked pending	Worked pending	Worked pending
Airport Application	N/A	• Radio • Instrument approaches • Precision • Control tower • High density	• Radio • Instrument approaches • Precision • Control tower	• Nonprecision approaches • Precision • Control tower	• Nonprecision approaches • Precision	• Control tower

1. Exception: temporary tower or control tower exists → True only below 10,000' feet  
2. True only during day or before 1,000' from AGL, may be 1,000' part 111

MSL: Above Ground Level  
FL: Flight Level  
MSL: Mean Sea Level  
NM: Nautical Miles

# Teaching Airspace - A Systematic Approach

Showing this to someone all at once is overwhelming



Airspace	Class A	Class B	Class C	Class D	Class E	Class G
Entry Requirements	ATIS (optional)	ATIS (optional)	Four Two-way communications	Four Two-way communications	Four Two-way communications*	Four Two-way communications*
Minimum/Pilot Qualifications	Instrument Rating	Private Pilot (Student or Instrument Pilot) minimums apply	Student Pilot/PLA	Student Pilot/PLA	Student Pilot/PLA	Student Pilot/PLA
Two-Way Radio Communications	Yes	Yes	Yes	Yes	Yes, under 10,000 ft MSL	Yes†
Special VFR Allowed	Yes	Yes	Yes	Yes	Yes	Yes
RVN Visibility Minimum	N/A	3 statute miles	3 statute miles	3 statute miles	3 statute miles*	1 statute mile†
RVN Minimum Distance From Obstacles	N/A	Clear of obstacles	500' above, 1,000' above, 2,000' horizontal	500' above, 1,000' above, 2,000' horizontal	500' above, 1,000' above, 2,000' horizontal†	Clear of obstacles†
RVN Airport Operations	N/A	All	All airports	Basic/Non-towered	Basic	Basic
Traffic Advisories	Yes	Yes	Yes	Workload permitting	Workload permitting	Workload permitting
Airport Application	N/A	• Basic • Instrument approaches • Precision • Control tower • High density	• Basic • Instrument approaches • Precision • Control tower	• Nonprecision approaches • Basic • Control tower	• Nonprecision approaches • Basic	• Control tower

\* Except for temporary tower or control tower circuits  
† True only below 10,000 feet  
‡ True only during day or before 1,000-foot AGL, see 14 CFR part 91

MSL, above ground level; FL, flight level; MSL, mean sea level

## Teaching Airspace - A Systematic Approach

Airspace should be taught in layers



## Teaching Airspace - A Systematic Approach

1<sup>st</sup> – Commit 5 things to memory

## Teaching Airspace - A Systematic Approach

1 mile – Clear of Clouds

3 Miles – Clear of Clouds

3 Miles – 500 Below, 1000 Above and 2000 Horizontally

## Teaching Airspace - A Systematic Approach

1 mile – 500 Below, 1000 Above and 2000 Horizontally

5 miles – 1000 Below, 1000 Above and 1 mile Horizontally

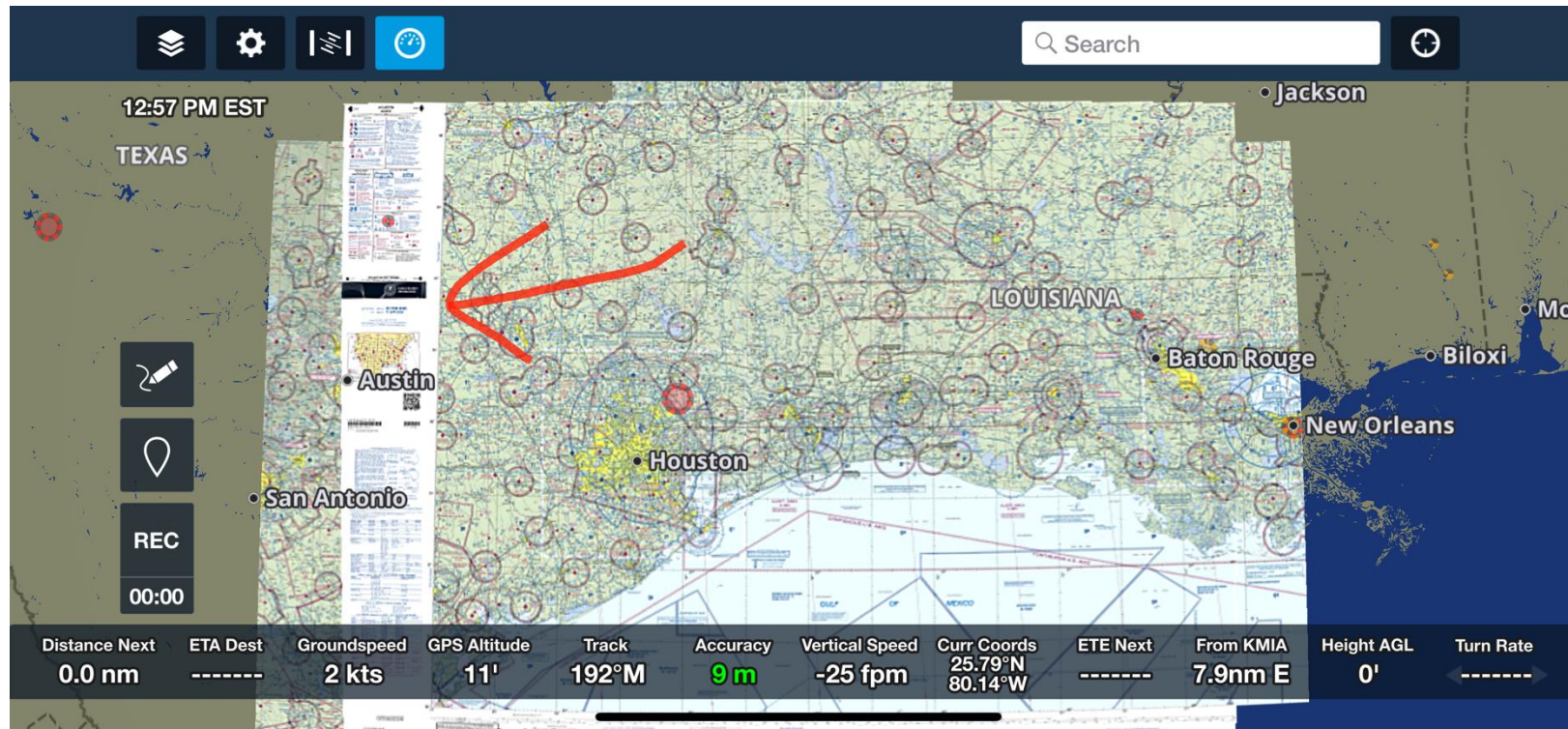


## Teaching Airspace - A Systematic Approach

These are the only possibilities

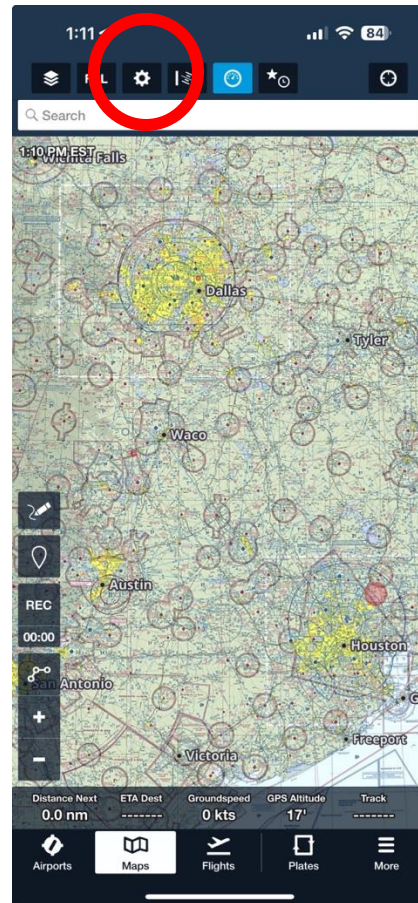
# Teaching Airspace - A Systematic Approach

## ForeFlight/Chart Legend – Identify airspace on the chart



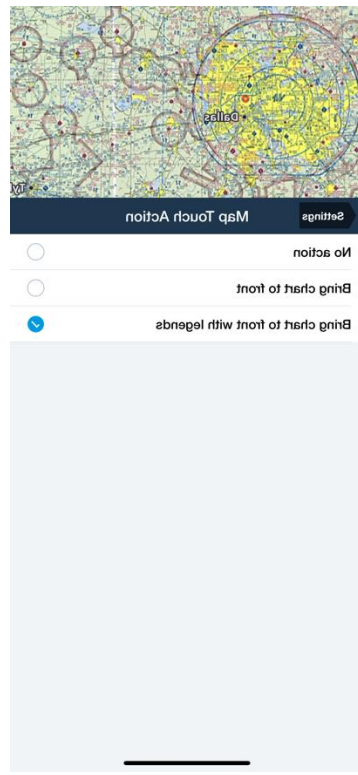
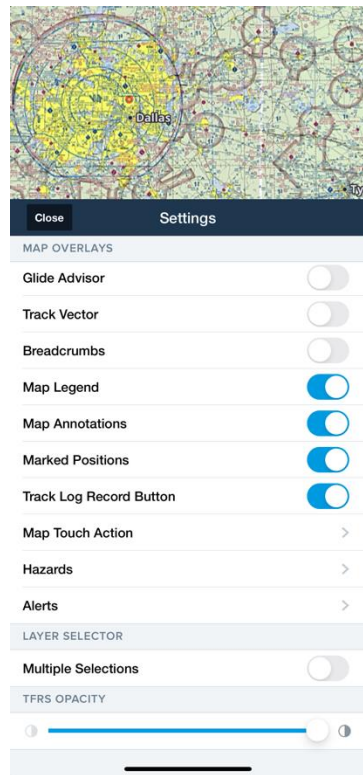
# Teaching Airspace - A Systematic Approach

Maps Tab, select the Gear



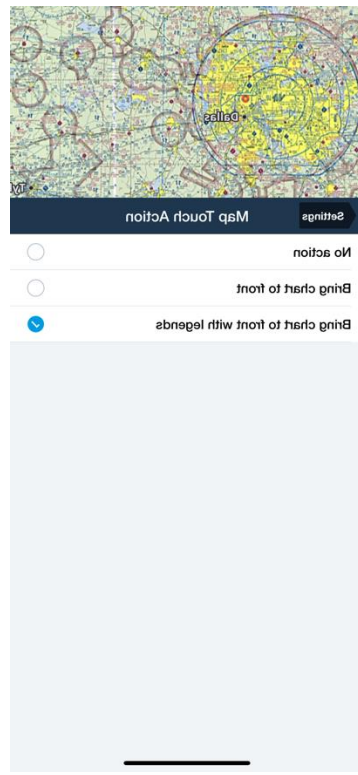
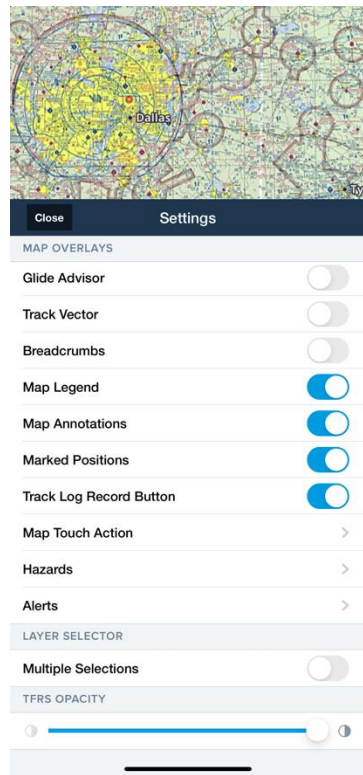
# Teaching Airspace - A Systematic Approach

## Choose Map Touch Action



# Teaching Airspace - A Systematic Approach

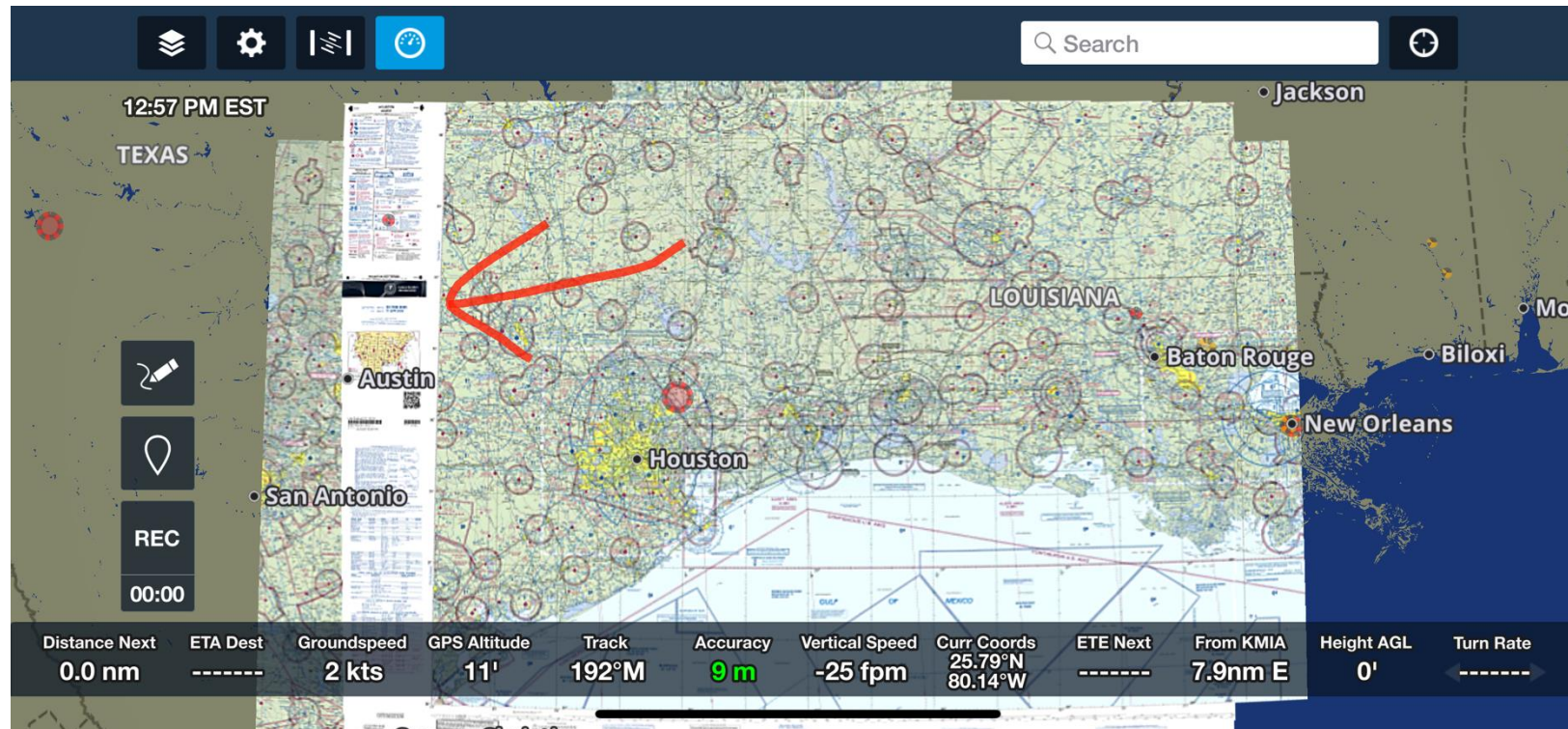
Choose – bring chart to front with legends





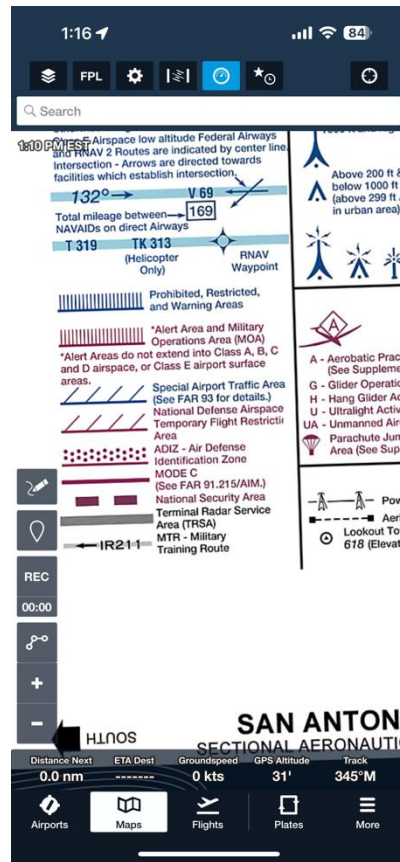
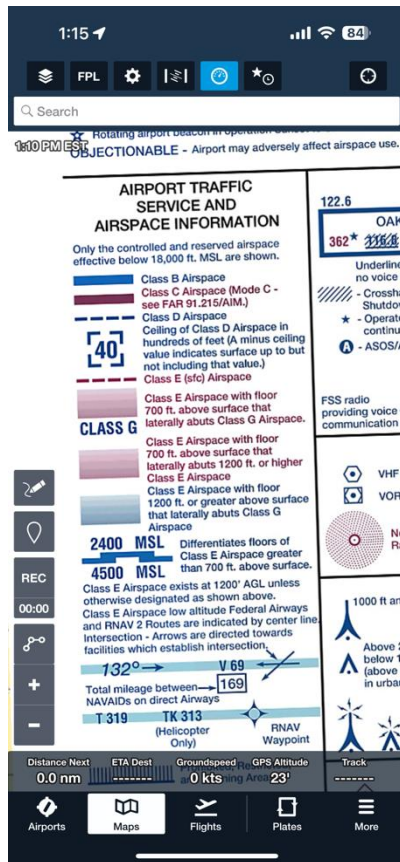
## Teaching Airspace - A Systematic Approach

Tap on the map - the legend for that sectional appears



# Teaching Airspace - A Systematic Approach

## First Lesson - Step through the legend and identify all airspace with starting and ending altitudes



## Teaching Airspace - A Systematic Approach

Quiz the student by asking the airspace at various places/altitudes until there is little to no hesitation with correct responses

**Practical  
Quiz**





## Teaching Airspace - A Systematic Approach

You can use our Airspace Flash Cards Product for the student to practice at home



Airspace Flash Cards | Instant  
Download - Not Paper

## Teaching Airspace - A Systematic Approach

Don't leave this step until the student is proficient

## Teaching Airspace - A Systematic Approach

Second Lesson - Layer in the pilot certificate and communications/clearances and equipment needed

## Teaching Airspace - A Systematic Approach

Class A – Two-way, ADS-B, Clearance, IFR FP – Private Pilot

## Teaching Airspace - A Systematic Approach

Class B – Two-way, ADS-B, Clearance – Student Pilot

## Teaching Airspace - A Systematic Approach

Class C – Two-way, ADS-B – In/above, not below, – Student

## Teaching Airspace - A Systematic Approach

Class D – Establish two-way – Student Pilot

## Teaching Airspace - A Systematic Approach

Class E – ADS-B Above 10,000 MSL – Student Pilot



## Teaching Airspace - A Systematic Approach

Class G – ADS-B Above 10,000 MSL – Student Pilot

# Teaching Airspace - A Systematic Approach

## Include ADS-B



## Teaching Airspace - A Systematic Approach

Quiz the student at various places/altitudes with little hesitation on the airspace and requirements

**Practical  
Quiz**



# Teaching Airspace - A Systematic Approach

## Third Lesson - Cloud clearances and visibilities for each type of airspace

**Airspace Classification** (Not to scale)

UNCLASSIFIED 10,000' AGL

	Class A	Class B	Class C	Class D	Class E	Class G
Altitude (AGL)	18,000 - 50,000	10,000 - 18,000	4,000 - 10,000	1,200 - 4,000	1,200 - 10,000	0 - 1,200
Minimum Altitude	18,000	10,000	4,000	1,200	1,200	0
Maximum Altitude	50,000	18,000	10,000	4,000	10,000	1,200
Communication	Two-way radio	Two-way radio	Two-way radio	Two-way radio	Two-way radio	None
Weather Reporting	Yes	Yes	Yes	Yes	Yes	Yes
Obstacle Clearance	Obstacle clearance	Obstacle clearance	Obstacle clearance	Obstacle clearance	Obstacle clearance	Obstacle clearance
Cloud Clearance	1000-300	1000-500	1000-500	1000-500	1000-500	1000-500
Visibility	3	3	3	3	3	3
Instrument Approach	Yes	Yes	Yes	Yes	Yes	Yes
Terminal Area	Yes	Yes	Yes	Yes	Yes	Yes
Classifications	Class A	Class B	Class C	Class D	Class E	Class G

1. The minimum altitude for Class G is 1,200 feet AGL. 2. The maximum altitude for Class G is 10,000 feet AGL. 3. The minimum altitude for Class E is 1,200 feet AGL. 4. The maximum altitude for Class E is 10,000 feet AGL. 5. The minimum altitude for Class D is 1,200 feet AGL. 6. The maximum altitude for Class D is 4,000 feet AGL. 7. The minimum altitude for Class C is 4,000 feet AGL. 8. The maximum altitude for Class C is 10,000 feet AGL. 9. The minimum altitude for Class B is 10,000 feet AGL. 10. The maximum altitude for Class B is 18,000 feet AGL. 11. The minimum altitude for Class A is 18,000 feet AGL. 12. The maximum altitude for Class A is 50,000 feet AGL.

## Teaching Airspace - A Systematic Approach

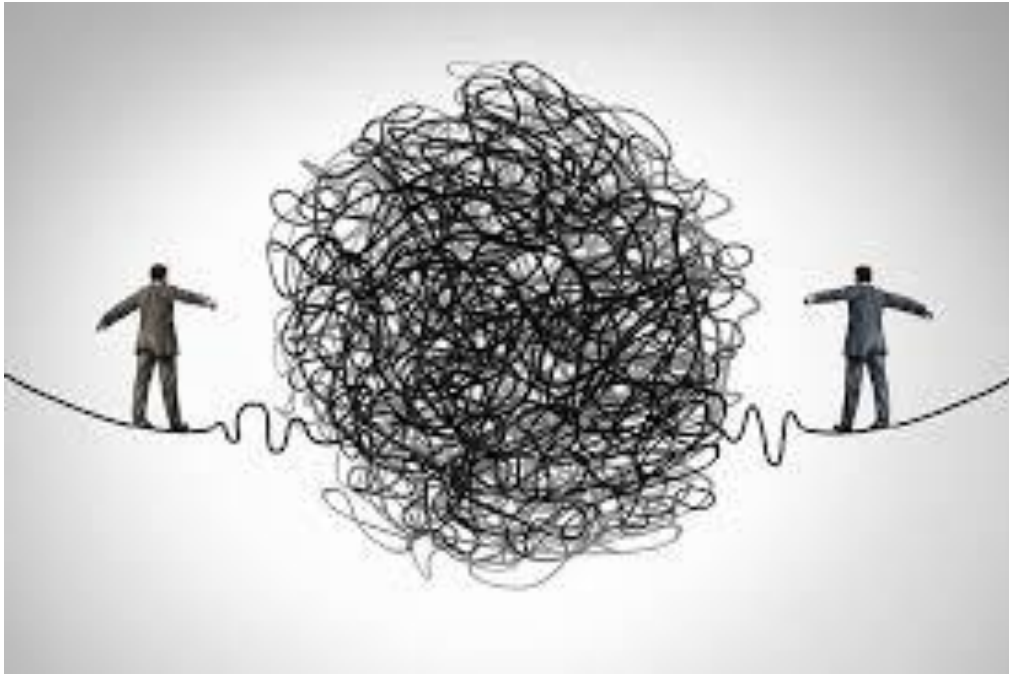
Quiz the student with the new material tying all of the airspace together with identification, requirements and cloud clearances and visibilities

**Practical  
Quiz**



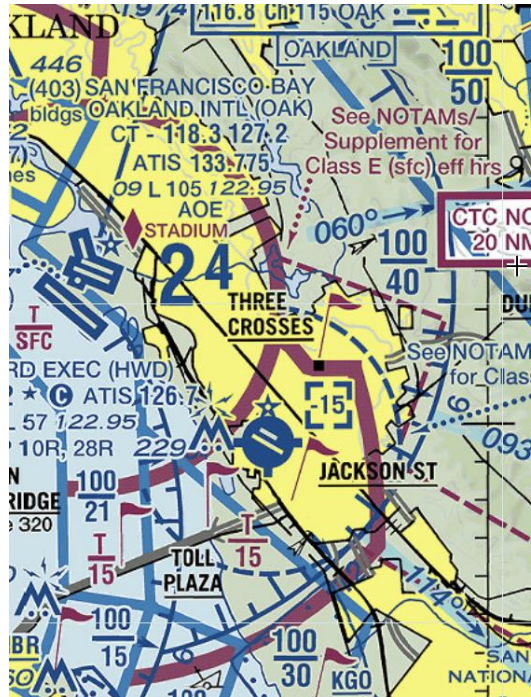
## Teaching Airspace - A Systematic Approach

Make sure the airspace is straightforward and not complicated -  
Bring in the exceptions and hard to determine airspace later



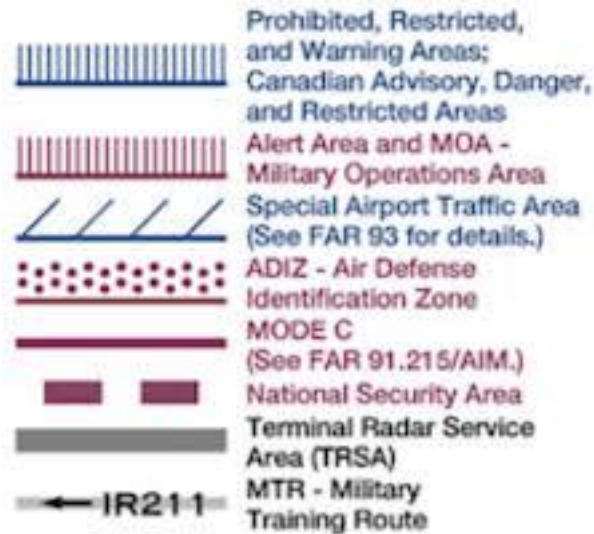
## Teaching Airspace - A Systematic Approach

For example, the airspace from the surface to 10,000 MSL at KHWD or the – sign in class D



## Teaching Airspace - A Systematic Approach

### Fourth Lesson – Speed limits and Special Use Airspace





## Teaching Airspace - A Systematic Approach

Layer in the speed limits for:

Flights above 10,000 MSL – 91.817 – Up to Mach One

## Teaching Airspace - A Systematic Approach

Layer in the speed limits for:

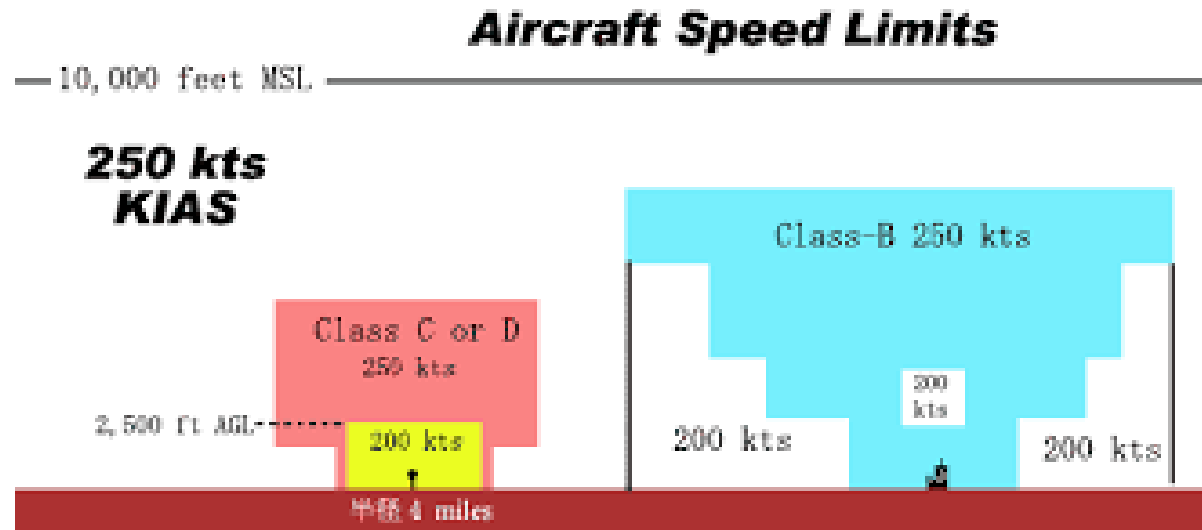
Below 10,000 MSL – 250 KIAS with Exceptions – 91.117

## Teaching Airspace - A Systematic Approach

Speed limits below 10,000 MSL exceptions – 91.117:

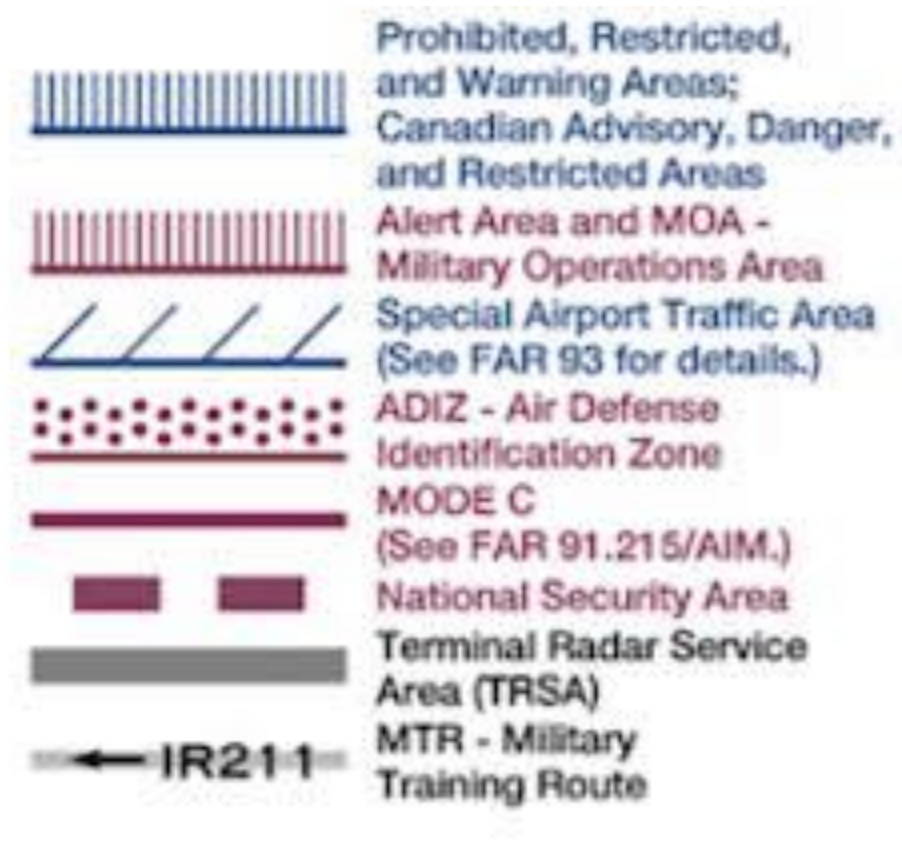
Below Class B or in a Class B corridor – 200 KIAS

Within 4nm of Class C or D airport up to 2,500 AGL – 200 KIAS



# Teaching Airspace - A Systematic Approach

## Special Use Airspace



## Teaching Airspace - A Systematic Approach

### Alert – ADS-B above 10,000 MSL – Student Pilot



## Teaching Airspace - A Systematic Approach

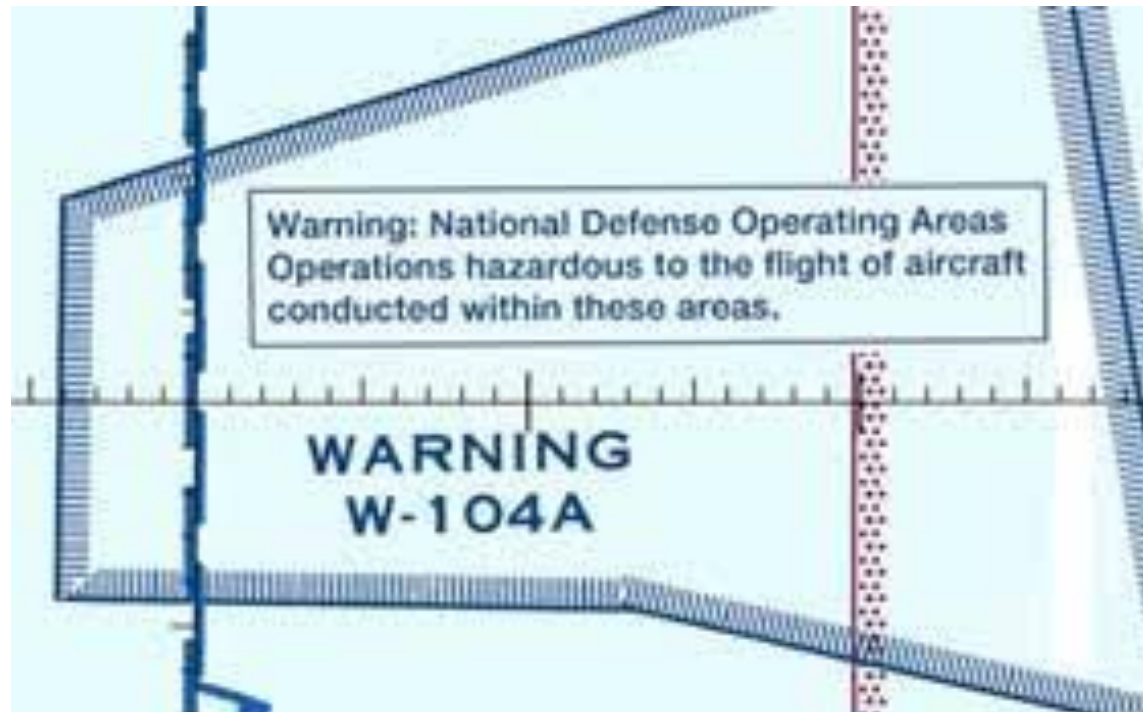
### MOA – ADS-B above 10,000 MSL – Student Pilot





## Teaching Airspace - A Systematic Approach

### Warning – ADS-B above 10,000 MSL – Student Pilot



## Teaching Airspace - A Systematic Approach

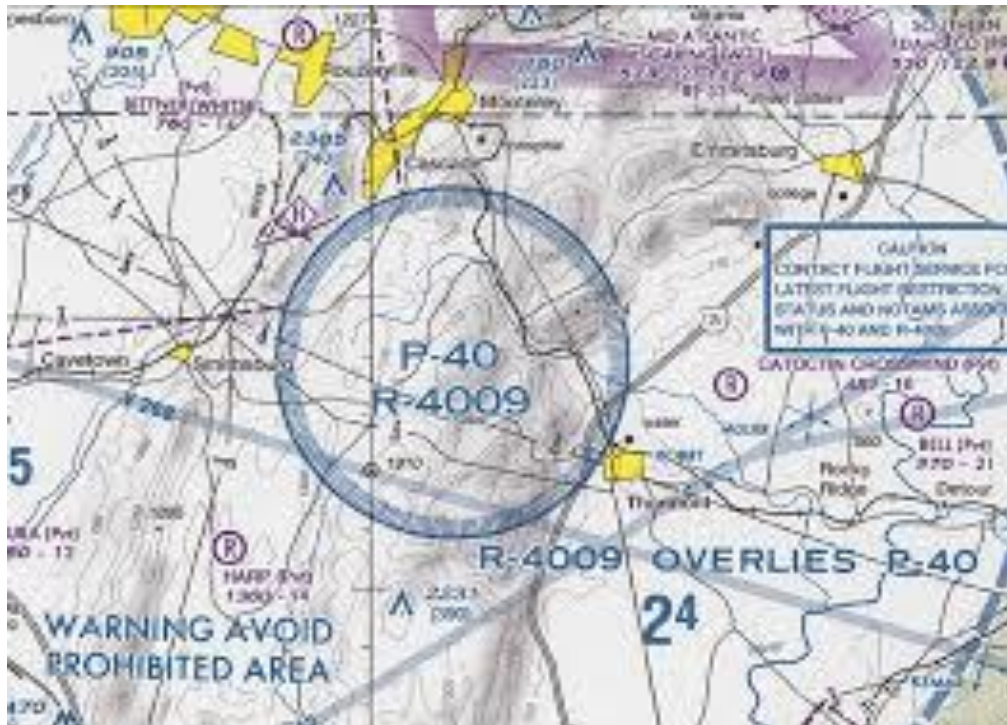
Restricted – ADS-B >10,000 MSL – Clearance - Student





## Teaching Airspace - A Systematic Approach

Prohibited – ADS-B – Clearance with Prior Permission – Private Pilot



## Teaching Airspace - A Systematic Approach

# Washington SFRA – ADS-B – Flight Plan - Clearance - Student Pilot







## Teaching Airspace - A Systematic Approach

### Grand Canyon SFRA – See chart – Student Pilot



## Teaching Airspace - A Systematic Approach

### Controlled Firing Area – Student Pilot



## Teaching Airspace - A Systematic Approach

TFR— Read NOTAM for requirements – Depends





# Teaching Airspace - A Systematic Approach

## Military Training Routes – VR and IR

Four Digits – Below 1500 AGL

Three Digits – Above 1500 AGL



## Teaching Airspace - A Systematic Approach

### The Continental Control Area

Begins at 14,500 MSL



## Teaching Airspace - A Systematic Approach

### The Continental Control Area

Developed when controllers needed to issue routing instructions without radar

## Teaching Airspace - A Systematic Approach

### The Continental Control Area

Mt. Whitney – 14,491, or so, everything else is lower

Teaching Airspace - A Systematic Approach

The Continental Control Area

That is why Class G doesn't go above 14,500 MSL

## Teaching Airspace - A Systematic Approach

### Examples:

New Mexico

South Western Texas – Big Bend Area

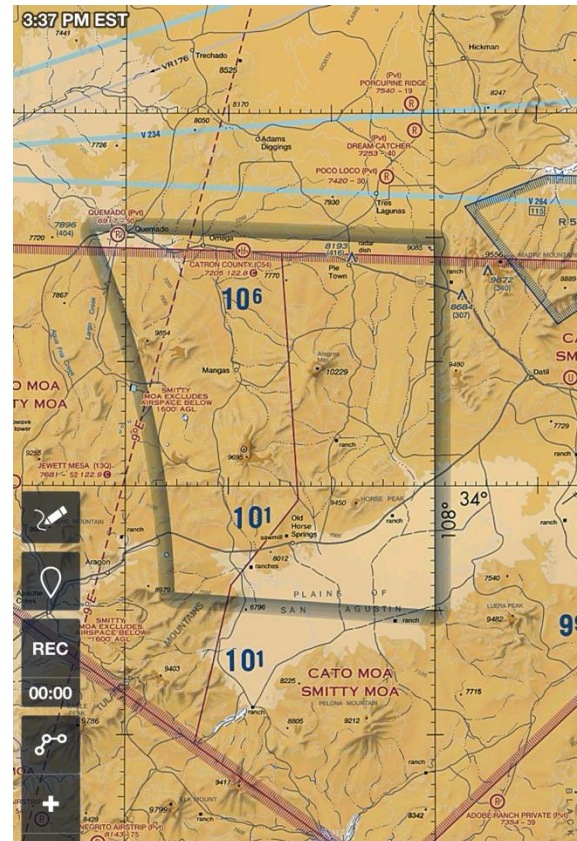
West of Vancouver, WA

Alaska – Around the highest terrain

# Teaching Airspace - A Systematic Approach

Examples:

New Mexico



# Teaching Airspace - A Systematic Approach

Examples:

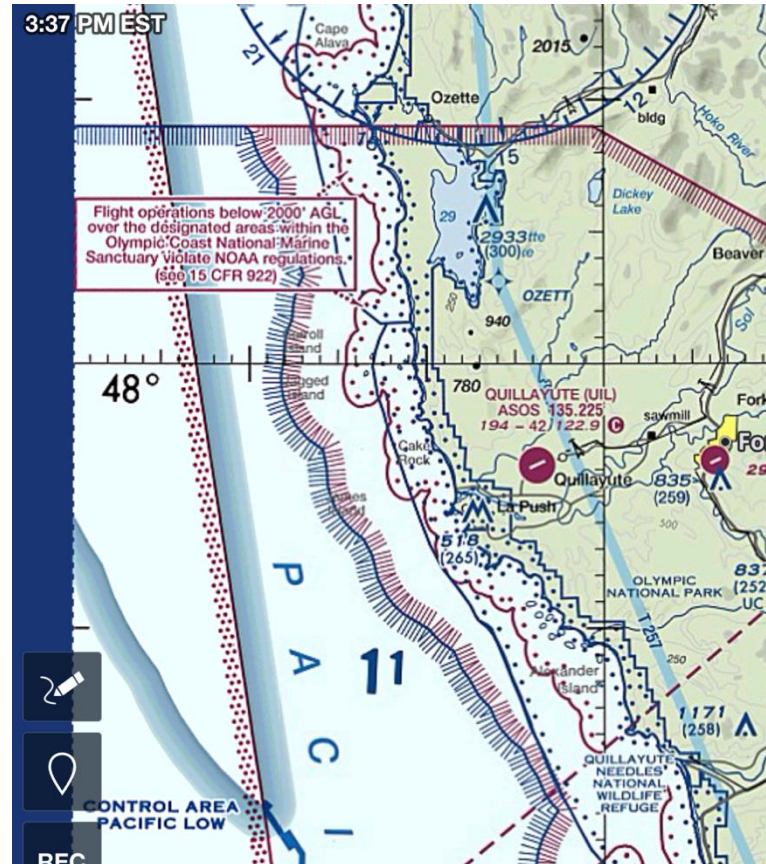
South West Texas



# Teaching Airspace - A Systematic Approach

Examples:

West of Vancouver

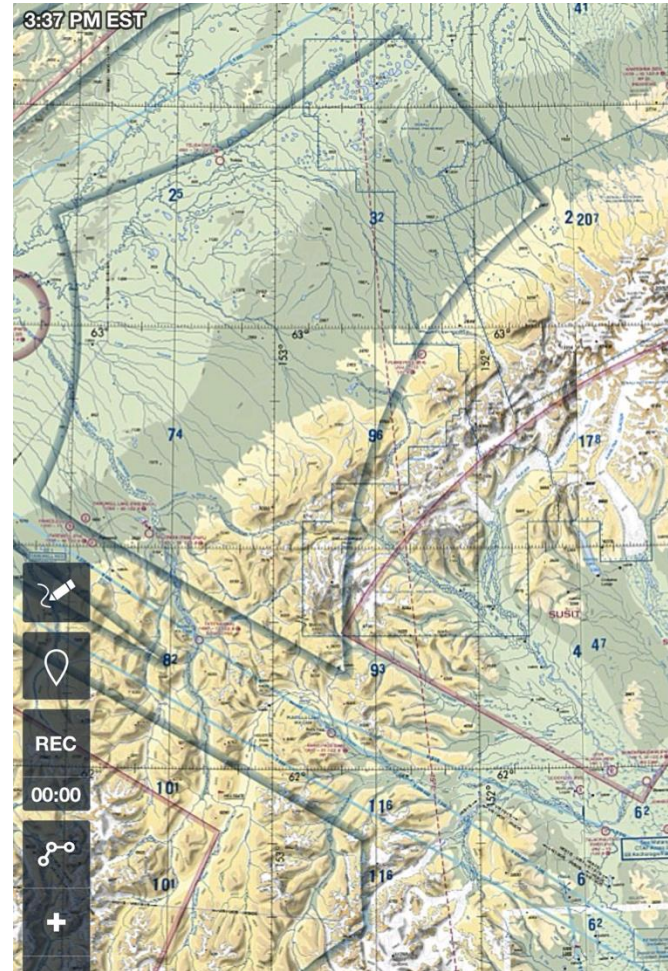




# Teaching Airspace - A Systematic Approach

Examples:

Alaska

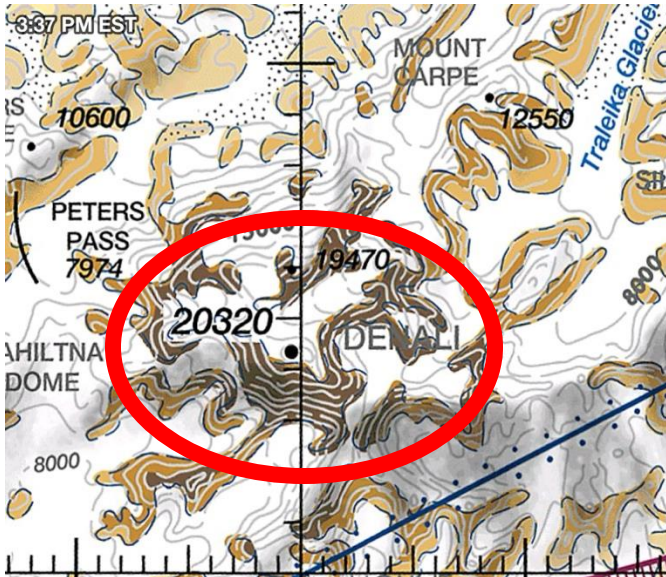




## Teaching Airspace - A Systematic Approach

Class E airspace above 18,000 MSL?

Around the highest point in Alaska. Within 2000 AGL it's still Class E even if it's above 18,000 MSL



## Teaching Airspace - A Systematic Approach

No Class A above 18,000 MSL?

In the Aleutian Islands from 160W, Westward - no Class A



# Teaching Airspace - A Systematic Approach

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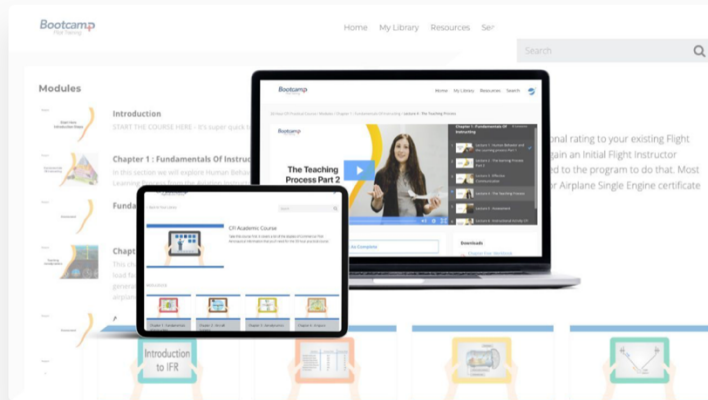
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