

# VFR CHART SYMBOLOGY

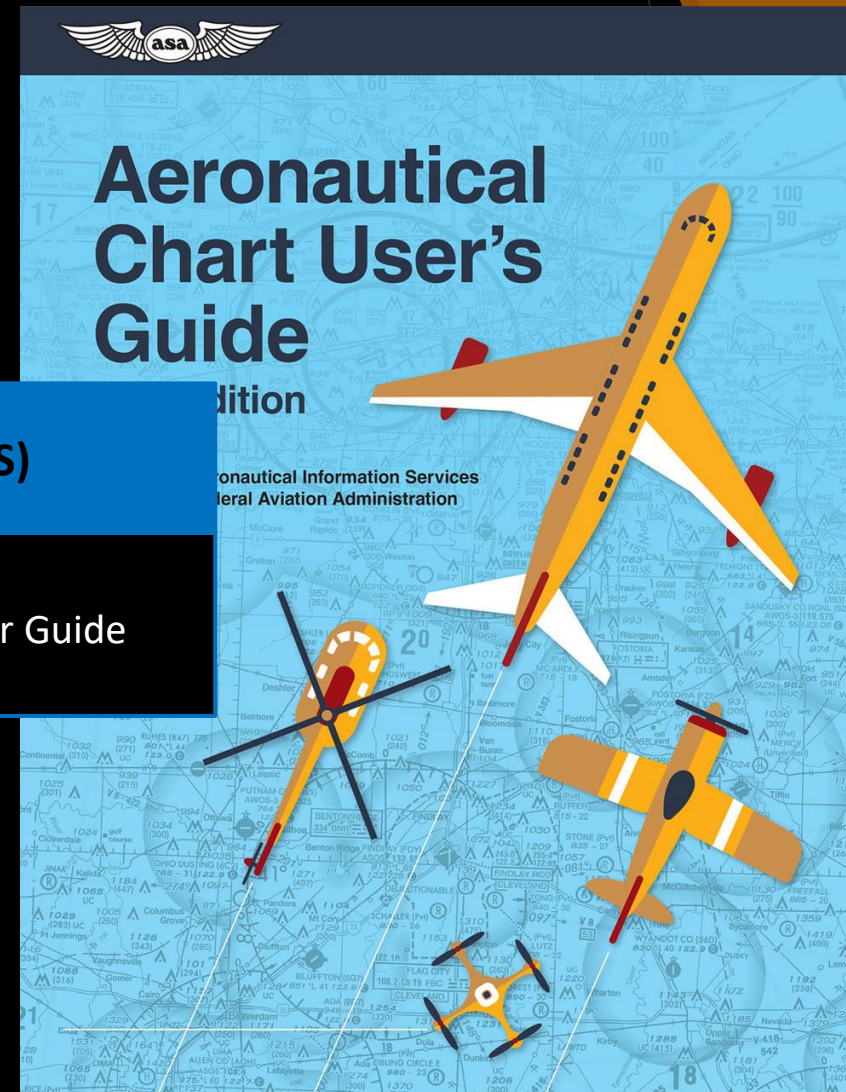
# Lesson Outline

## LESSON OBJECTIVE

To determine that the student exhibits proficient knowledge of the elements related to VFR Sectional and Terminal Area Chart Symbolology by describing the elements on the following slide.

## LESSON SOURCE(S)

Aeronautical Chart User Guide



# Lesson Outline

## LESSON ELEMENTS

VFR Sectional and Terminal Area Chart  
Symbology  
Airports  
Radio Aids to Navigation  
Airspace Information  
Navigational Information

## TIMEFRAME

**25 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.

# VFR Chart Symbology

## General Information

The symbols shown in this lesson illustrate those that appear in the Sectional Aeronautical Charts (Sectionals) and Terminal Area Charts (TACs). The same symbology is utilized in VFR Flyway Planning Charts, however the scale of the symbols may be different due to the particular chart scales. Where symbology is distinctive to a given chart, examples and explanations are given in the additional examples.

## General Information







This lesson will not illustrate every single VFR Chart symbol. However, we have done our best to highlight and explain the more common and important ones. You can always see more by reading the FAA Aeronautical Chart User Guide on the FAA's website.

Additionally, we will not be covering Airspace in great detail in this lesson. We have a full length lesson dedicated to that topic. Simply go watch/study the "National Airspace System" lesson for more information.

# Airports

## Civilian Landplane

- Airports depicted in blue have control towers. All others are shown in magenta.
- Tick marks indicate fuel availability.
- All recognizable runways (including some that may be closed) are shown for visual identification purposes.
- Runway patterns will be depicted at airports with at least one hard-surfaced runway that is 1500' or longer in length.

Non-Towered	Towered
	
	
	

# Airports

## Civil-Military Landplane



## Military Landplane



## Heliport and Civil Seaplane



Refueling and repair facilities not indicated.

# Airports

**Public Use**



Soft or hard surfaced runway less than 1,500' in length. Fuel not available.

**Restricted or Private**



Soft or hard surfaced runway less than 1,500' in length. Non-public use but has landmark value.

**Objectionable**



OBJECTIONABLE

An airport that has an airspace determination based upon a number of factors including conflicting traffic patterns with another airport, hazardous runway conditions, or natural or man-made obstacles in close proximity to the landing area.

**Unverified**



A landing area available but warranting more than ordinary precaution due to: lack of current information on field conditions and/or available information indicates peculiar operating limitations.



# Airports

Abandoned



Depicted for landmark value or to prevent confusion with an adjacent usable landing area (normally at least 3,000' paved).

Ultralight Flight Park



Depicted for ultralight aircraft.

Foreign Airport



Airports outside the U.S. Flight Information Region are shown with this standard symbol. Only the airport names and ICAO identifiers are shown.

Seaplanes



Facility without fuel.



Facility with fuel. Non-towered and towered.

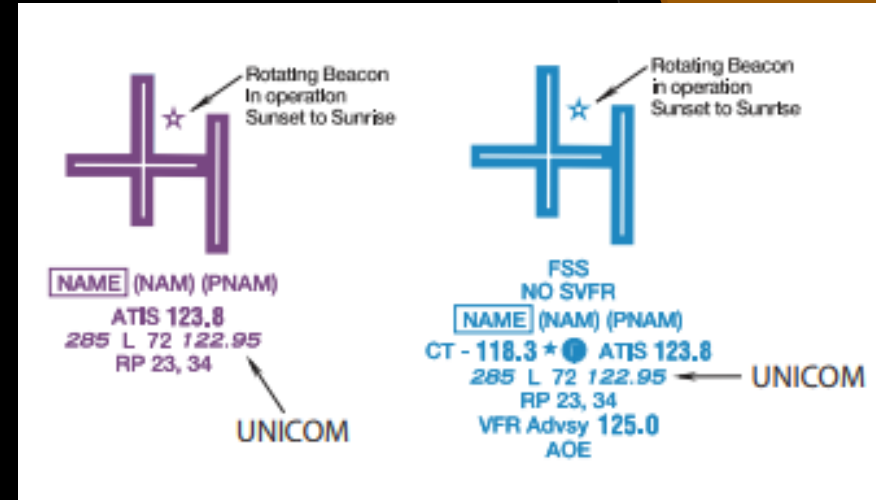


Facility with runway and waterway.

# Airports

## Airport Data Grouping

FSS	Flight Service Station on the field.
NO SVFR	No Special VFR operations allowed.
<span style="border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span>	Special Traffic Rules established.
(NAM) / (PNAM)	Location or ICAO Location identifier.
CT – 118.3	Control Tower primary frequency.



Indicates part-time operations.



Common Traffic Advisory Frequency.

ATIS 123.8

ATIS frequency for the field.

# Airports

## Airport Data Grouping

ASOS/AWOS 135.42

ASOS/AWOS frequencies for the field.

285

Field elevation in feet.

L/\*L

Lighting operations/lighting limitations.

72

Length of the longest runway.

122.95

UNICOM frequency for the field.

RP 23, 34

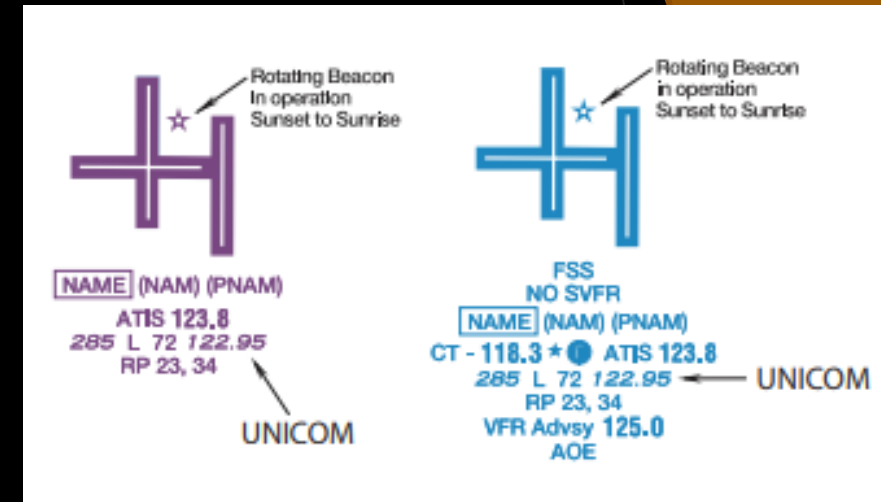
Runways with right traffic patterns.

VFR ADVSY 125.0

Advisory for when ATIS is not available.

AOE

Airport of Entry.



# Radio Aids to Navigation

VOR



Very High Frequency Omnidirectional Range.

DME



Distance Measure Equipment.

VOR/DME



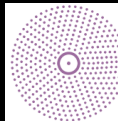
VOR combined with DME.

VORTAC



VOR combined with TACAN.

NDB



Non-Directional Beacon.

NDB/DME



NDB combined with DME.

# Radio Aids to Navigation

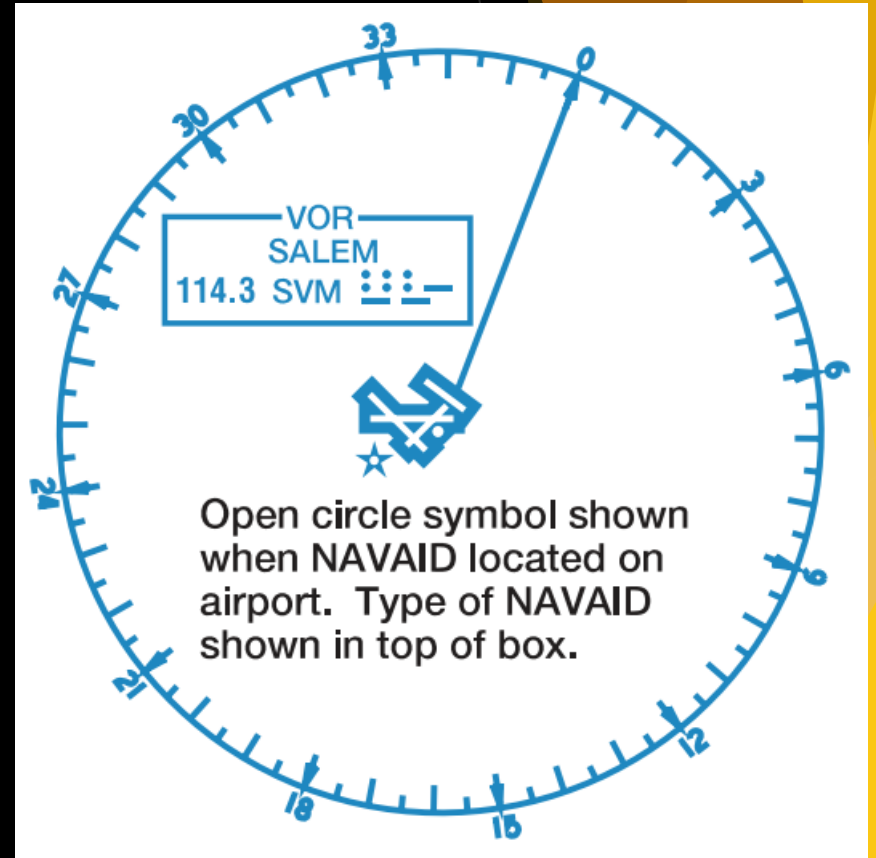
## Compass Rose

The Compass Rose is “reference” oriented to magnetic north.

## VOR Information Box

**SALEM** = Name of the VOR  
**114.3** = Navigation Frequency  
**SVM** = VOR Identifier  
**Dots and Dashes** = Morse Code (SVM)

Reference the “Navigation Aids: VOR” and “Navigation Aids: DME” lessons on [wifiCFI](#) for much more information.



# Airspace

## Class B

- Only the airspace effective below 18,000' MSL are shown.
- All mileages are nautical (NM).
- All radials are magnetic.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

Sectional

LAS VEGAS CLASS B



TAC

LAS VEGAS CLASS B

LAS 20 NM

LAS 002°

CTC LAS VEGAS APP  
ON 121.1 OR 257.8

# Airspace

## Class C

- 48 = Ceiling of Class C in hundreds of feet MSL.
- 30 = Floor of Class C in hundreds of feet MSL.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

## BURBANK CLASS C

See NOTAMs/Directory  
for Class C eff hrs

48  
—  
30

CTC BURBANK APP WITHIN  
20 NM ON 124.6 395.9

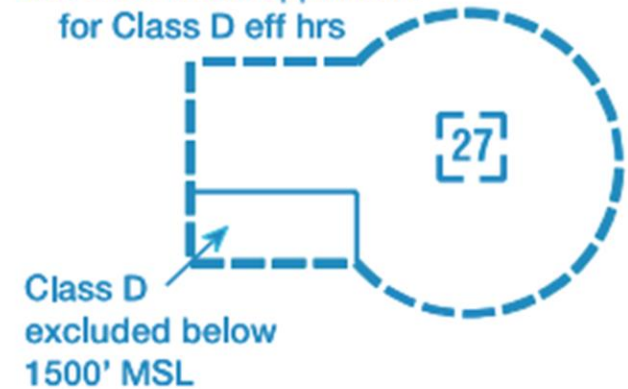
# Airspace

## Class D

- Altitudes are in hundreds of feet MSL.
- A minus in front of the figure is used to indicate “from the surface up to but not including...”

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

See NOTAMs/Supplement  
for Class D eff hrs



See NOTAMs/Supplement for  
Class D/E (sfc) eff hrs





# Airspace

## Class E

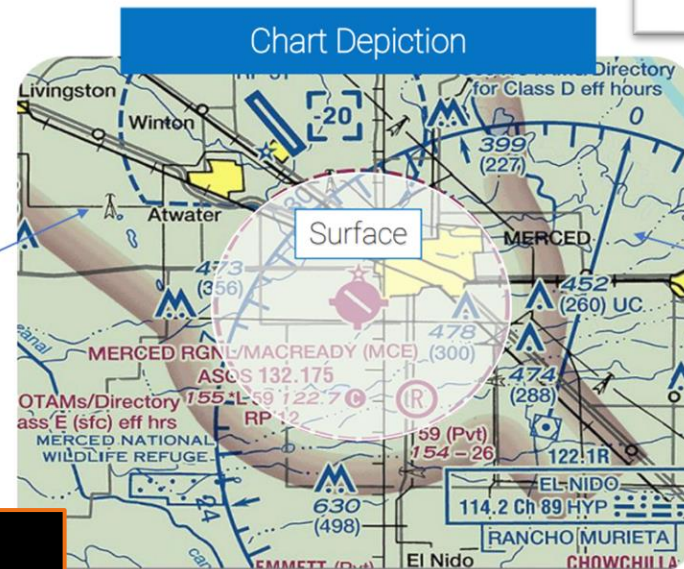
Class E Airspace can have 1 of 3 different floors:

1. Stitched Magenta = Surface
2. Feathered Side of Magenta Line = 700' AGL
3. Solid Side of Magenta Line = 1,200' AGL

Its dimensions can also be defined by a blue zippered line.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

700' AGL



CEILING  
14,000 MSL

8000 AGL

# Airspace

## Class G

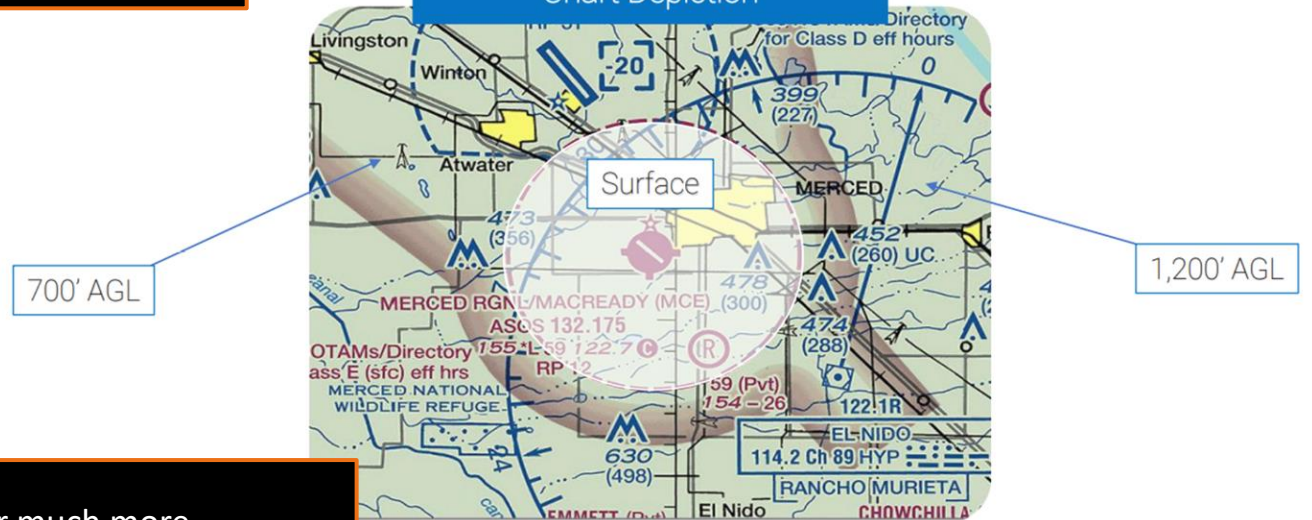
Class G Airspace is basically just the airspace that is located beneath Class E.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

CEILING  
14,000 MSL

8000 AGL

### Chart Depiction



# Airspace

## Special Conservation Areas

National parks, wildlife refuges, primitive and wilderness areas, etc.



Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

# Airspace

## SFRA/TFR National Security

Example: Washington, DC. Appropriate notes as required may be shown.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

TFR

SFRA

WASHINGTON DC  
TROPOLITAN AREA SFRA

Washington DC Metropolitan Area Special  
Flight Rules Area/Flight Restricted Zone  
(DC SFRA & DC FRZ) (See description in  
Atlantic Ocean).

CAUTION  
CONTACT FLIGHT SERVICE FOR  
LATEST FLIGHT RESTRICTION  
STATUS AND NOTAMS ASSOCIATED  
WITH P-40 AND R-4009

# Airspace

## Special Use Airspace

- Include: Prohibited, Restricted, Warning, Alert, and Military Operations Areas (MOA).
- Only the airspace effective below 18,000' MSL is shown.
- The type of area shall be spelled out in large areas if space permits.
- Alert Areas do not extend into Class A, B, C, and D airspace, or Class E airport surface areas.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

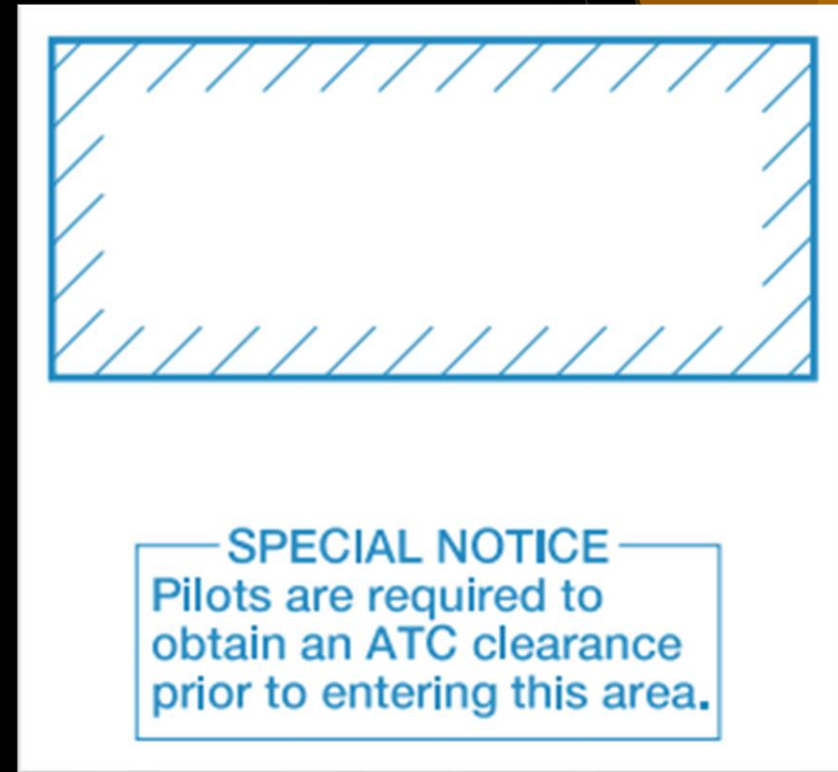


# Airspace

## Special Air Traffic Rules

Appropriate boxed note as required will be shown adjacent to the area.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.



# Airspace

## National Security Area

Appropriate boxed note may be shown adjacent to the area.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.



# Airspace

## Mode C Veil

Appropriate notes as required may be shown.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.



MODE C & ADS-B OUT  
30 NM

The diagram shows a white rectangular box containing a purple arc. The text "MODE C & ADS-B OUT" is written in purple above the arc, and "30 NM" is written in purple below the arc. The arc represents the 30 NM Mode C and ADS-B OUT veil.



# Airspace

## ADIZ

Stands for “Air Defense Identification Zone.” Delimiting line is not shown when it coincides with an international boundary.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

CONTIGUOUS  
U.S. ADIZ

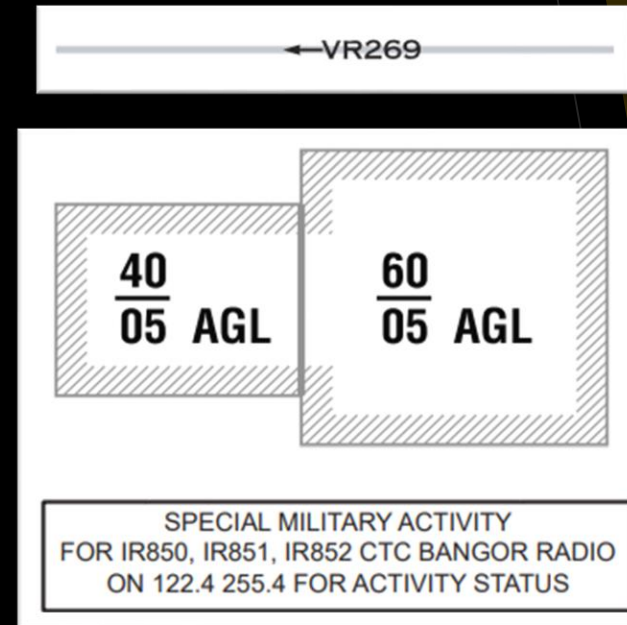


# Airspace

## MTR and SMAR

Stands for “Military Training Routes” and “Special Military Activity Routes”. Boxed notes shown adjacent to route.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.



# Airspace

**Aerobatic Practice Area**



**Glider Operations**



**Hang Glider Activity**



**Ultralight Activity**



**Unmanned Aircraft**



**Parachute Jump Area**



**Space Launch Area**



Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

# Airspace

## VFR Transition Routes

Appropriate notes as required may be shown. Routes can be uni-directional or bi-directional.

Uni-Directional



Bi-Directional



Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

VFR TRANSITION ROUTE  
ATC CLEARANCE REQUIRED  
SEE SHOWBOAT GRAPHIC  
ON SIDE PANEL



# Airspace

## TRSA

Stands for “Terminal Radar Service Area.” Will include the TRSA Name, boundaries, sectors, ceilings and floors, and other appropriate notes.

Reference the “National Airspace System” lesson on [wifiCFI](#) for much more information.

## HARRISBURG TRSA



**80** - Ceiling of TRSA in hundreds of feet MSL  
**40** - Floor of TRSA In hundreds of feet MSL

SEE TWR FREQ TAB

# Navigational Information

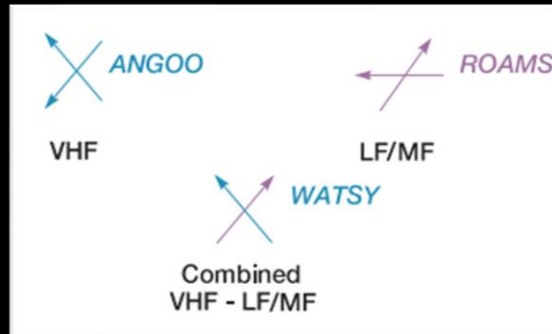
## Isogonic Lines

Isogonic lines and values shall be based on the five year epoch magnetic variation model.



## Intersection

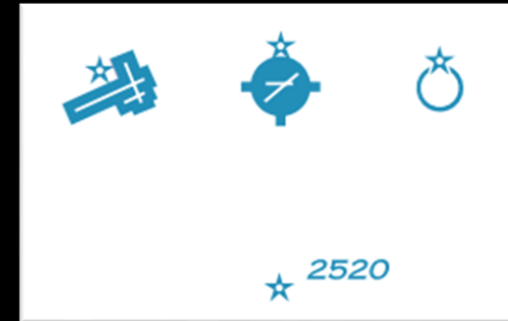
Named intersections used as reporting points. The arrows point toward the facilities that establish the intersection.



# Navigational Information

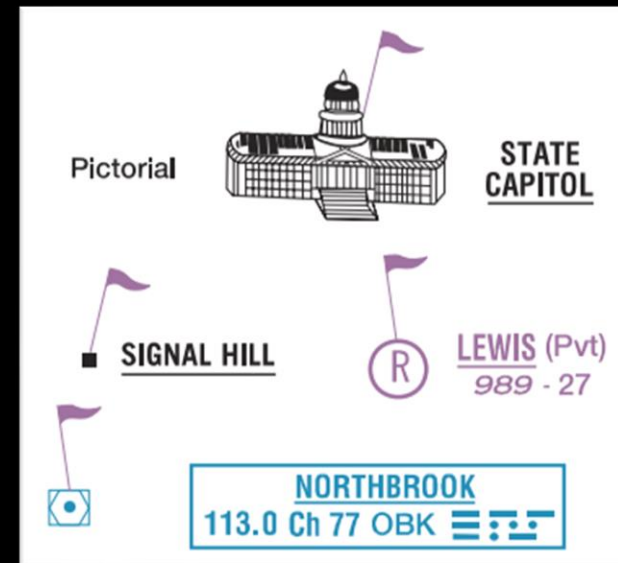
## Airport Beacons

Beacons can be represented as rotating or flashing at airports or as stand-alone isolated locations.



## VFR Checkpoints

Underlined text indicates the proper name of the VFR Checkpoint.



# Navigational Information

## Waypoints

Waypoints can be shown as RNAV (blue), VFR stand-alone (black), VFR collocated with a checkpoint (flagged).



## Obstructions

Obstructions can be shown with the following criteria:

1. Under Construction
2. Above 200' and Below 1,000' AGL
3. 1,000' AGL and Higher
4. Wind Turbines

1



2



3



4





# Navigational Information

## Group Obstructions

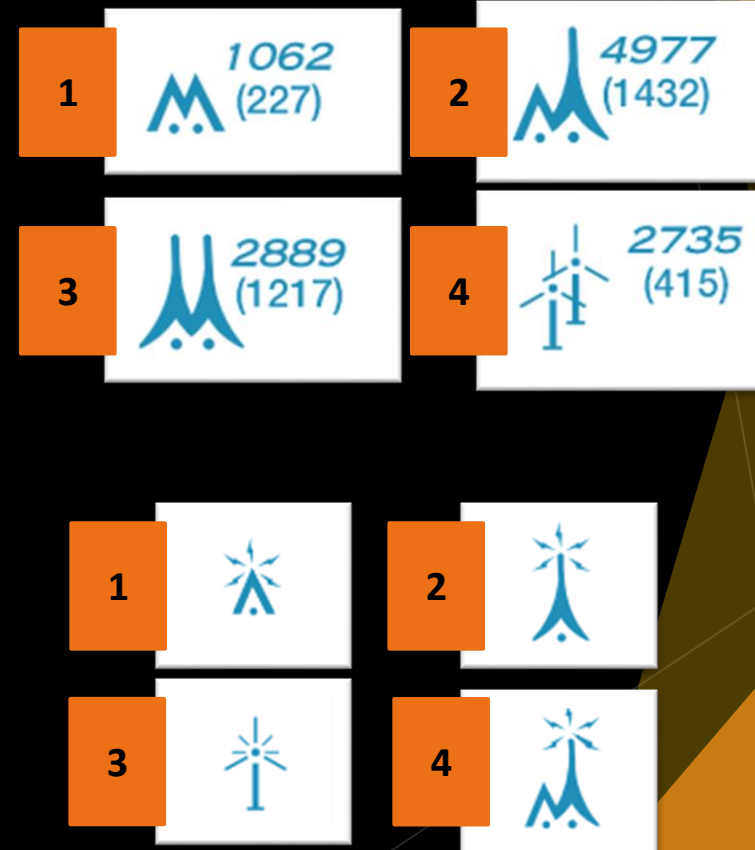
Group obstructions can be shown with the following criteria:

1. Above 200' and Below 1,000' AGL
2. 1,000' AGL and Higher
3. At Least Two in Group 1,000' AGL and Higher
4. Wind Turbines

## High-Intensity Obstruction Lights

Obstructions lights can be shown with the following criteria:

1. Less than 1,000' AGL
2. 1,000' AGL and Higher
3. Wind Turbine
4. Group Obstructions



# Navigational Information

## Maximum Elevation Figure (MEF)

This figure represents the highest elevation within a quadrant, including terrain and other vertical obstacles (towers, trees, etc.) MEF figures are rounded up to the nearest 100' value and the last 2 digits of the number are not shown.

## Populated Areas

Yellow tinted areas indicate populated places.

135



# Lesson Summary

In this lesson we discussed common symbology that is found on VFR Sectional and TAC Charts. There is additional symbology that we did not cover. You can find information on those additional symbols in the FAA Aeronautical Chart User Guide if needed.