

# Private Pilot (ASEL) Ground School Course

Lesson 21 | Sectional Charts and Associated Publication

Chester County  
Aviation



# Lesson Overview

## Lesson Objectives:

- Develop knowledge of the publications available to pilots regarding navigation and airport operations.
- Develop an understanding of how to read and utilize charts and other publications.

## Lesson Completion Standards:

- Student demonstrates satisfactory knowledge of sectional chart and associated publications by answering questions and actively participating in classroom discussions.

# VFR Sectional Charts

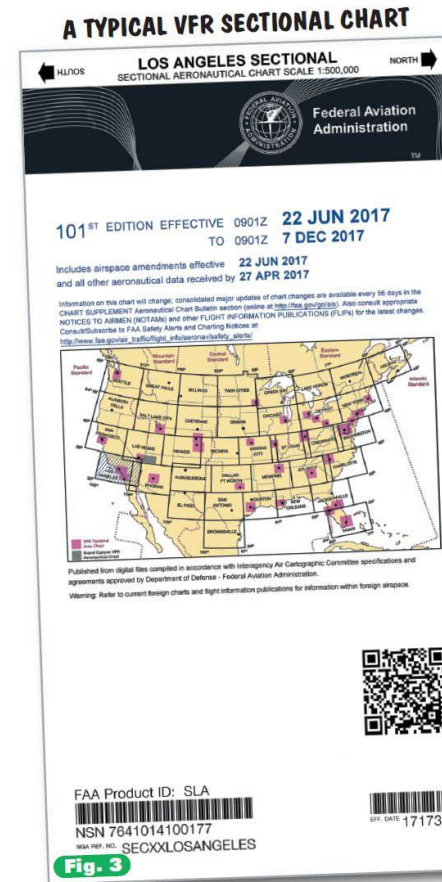
Sectional Charts and Associated Publications

# Charts

- Maps are representations of the earth's surface and its topographic features
- Show mountains and lakes, hills and valleys, deserts and forests
- Aviation maps include information about manmade features such as cities, towns, roads, railroad tracks, etc

# Aeronautical Sectional Chart

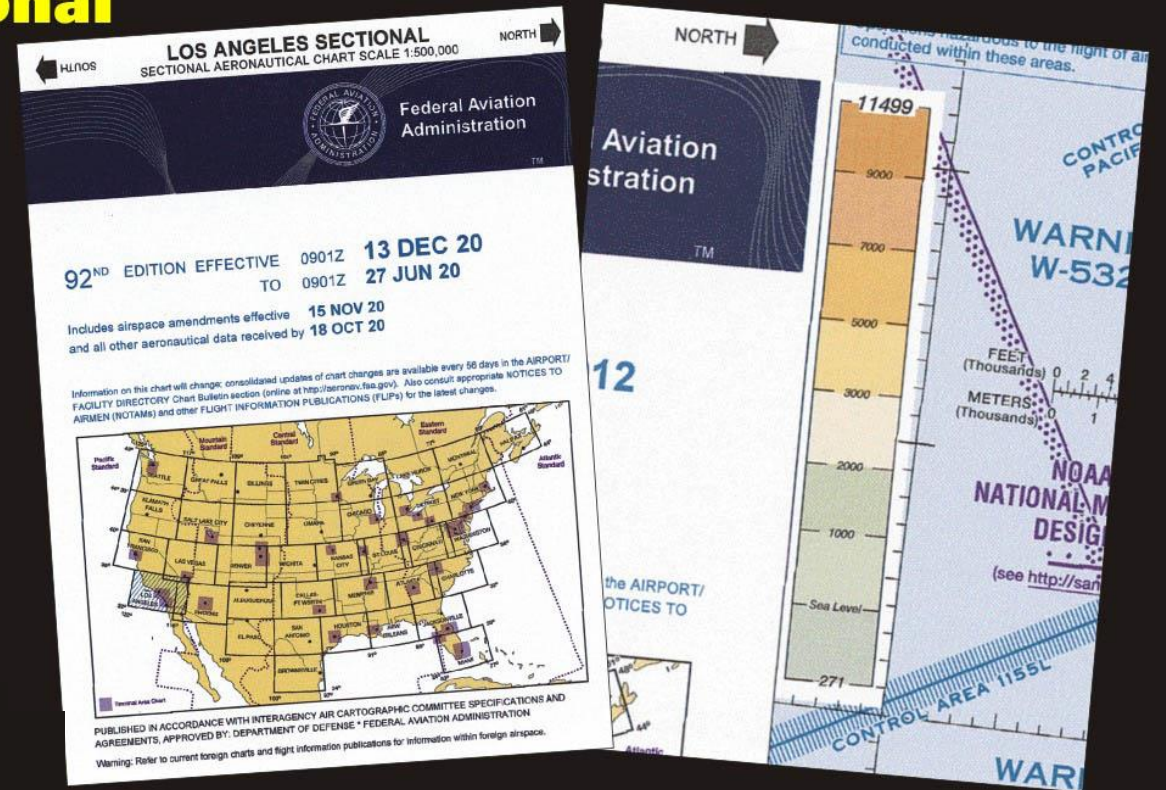
- Pilot's most common tool for VFR navigation
- Typical sectional chart is one of 37 charts covering the entire continental US
- Issued with an effective date and an expiration date
- Are good for 56 days and then reissued



# Aeronautical Sectional Chart

- Never use an outdated chart
- Airports, obstructions, navigational aids, and airspace can change

## The Sectional Chart





# Detroit Sectional Legend

- Know *each* symbol

HLNOS
DETROIT LEGEND
NORTH

Airports having Control Towers are shown in blue, all others in Magenta. Consult Chart Supplement for details involving airport lighting, navigation aids, and services. All times are local. For additional symbol information refer to the Chart User's Guide.

### AIRPORTS

- Other than hard-surfaced runways
- Hard-surfaced runways 1500 ft. to 8069 ft. in length
- Hard-surfaced runways greater than 8069 ft. or some multiple runways less than 8069 ft.
- Open dot with hard-surfaced runway configuration indicates appropriate VOR, VOR-DME, DME or VORTAC location.
- All recognizable hard-surfaced runways, including those closed, are shown for visual identification. Airports may be public or private.

### ADDITIONAL AIRPORT INFORMATION

- Private "Pvt" - Non-public use having emergency or landmark value
- Military - Other than hard-surfaced; all military airports are identified by abbreviations AFB, NAS, AAF, etc.
- Helipad Selected
- Unsurfaced
- Abandoned - paved having landmark value, 3000 ft. or greater
- Lighting Flight Mark Selected

Fuel availability indicated by use of tick marks around basic airport symbol. Consult Supplement for details and availability at airports with hard-surfaced runways greater than 8069 ft.

Rotating airport beacon in operation Sunset to Sunrise

OBJECTIONABLE - Airport may adversely affect airspace use.

### AIRPORT DATA

Box indicates FAR 93, FAR 91, Special Av Traffic Rules & Airport Traffic Patterns, Runways with Right Traffic, Patterns (public use), \*RP Special conditions exist - see Supplement, FSS - Flight Service Station, NO SVFR - Fixed-wing special VFR flight is prohibited, CT - 118.3 - Control Tower (CT) - primary frequency, \* - Star indicates operation part-time. See tower frequency tabulation for hours of operation.

Ⓢ - Follows the Common Traffic Advisory Frequency (CTAF)

ATIS 123.8 - Automatic Terminal Information Service  
 AFIS 135.2 - Automatic Flight Information Service (AFIS)  
 ASOS/AWOS 135.42 - Automated Surface Weather Observing Systems (shown where full-time ATIS not available). Some ASOS/AWOS facilities may not be located at airports.  
 UNICOM - Aeronautical advisory station  
 VFR Advisy - VFR Advisory Service shown where full-time ATIS not available and frequency is other than primary CT frequency.

2885 - Elevation in feet  
 L - Lighting in operation Sunset to Sunrise  
 \*L - Lighting limitations exist; refer to Supplement.  
 72 - Length of longest runway in hundreds of feet; usable length may be less.

When information is lacking, the respective character is replaced by a dash. Lighting codes refer to runway edge lights and may not represent the longest runway or full length lighting.

### AIRPORT TRAFFIC SERVICE AND AIRSPACE INFORMATION

Only the controlled and reserved airspace effective below 18,000 ft. MSL are shown.

- Class B Airspace
- Class C Airspace (Mode C - see FAR 91.215(A)(4))
- Class D Airspace
- Class E (40) Airspace
- Class E Airspace with floor 700 ft. above surface that laterally abuts Class G Airspace.
- Class E Airspace with floor 700 ft. above surface that laterally abuts Class E Airspace.
- Class E Airspace with floor 1200 ft. or higher above surface.
- Class E Airspace with floor 1200 ft. or greater above surface that laterally abuts Class G Airspace.

2400 MSL Differentiates floors of Class E Airspace greater than 700 ft. above surface.

4500 MSL Class E Airspace exists at 1200' AGL unless otherwise designated as shown above.

Class E Airspace low altitude Federal Airways and RNAV 2 Routes are indicated by center line intersection - Arrows are directed towards facilities which establish intersection.

132° - Total mileage between - 169 - V 69

T 318 - T 319 - Helicopter Only - Prohibited, Restricted, and Warning Areas, Cautionary Areas, Dangers, and Restricted Areas. \*Alert Areas do not extend into Class A, B, C and D airspace, or Class E airport surface areas.

Special Airport Traffic Area (See FAR 93 for details.)  
 National Defense Airspace  
 Temporary Flight Restriction Area  
 ADIZ - Air Defense Identification Zone  
 MODE C (See FAR 91.215(A)(4))  
 National Security Area  
 Terminal Radar Service Area (TRSA)  
 MTR - Military Training Route

### COMMUNICATION BOXES

122.1R 122.8 123.8 OAKDALE 382\* 238.8 OAK 122.6 CHICAGO CHI

Underline indicates no voice on frequency.  
 Crosshatch indicates Shutdown status.  
 \* Operates less than continuous or On-Request.  
 A - ASOS/AWOS

Heavy line box indicates Flight Service Station (FSS). Frequencies 122.2 and 251.4 (Continuous U.S.), 121.5, 122.2, 243.0 and 251.4 (Alaska), and 121.5, 128.7, and 243.0 (Canada) are available at many FSSs and are not shown above boxes. All other frequencies are shown.

R - Receive only

FSS radio providing voice communication - MIAMI

Frequencies above thin line box are remote to NAVD85. Other FSS frequencies providing voice communication may be available as determined by altitude and terrain. Consult Supplement for complete information.

### RADIO AIDS TO NAVIGATION

- VHF OMNI RANGE (VOR)
- VOR-DME
- DME
- Non-Directional Radio Beacon (NDB)
- NDB - DME

### OBSTRUCTIONS

1000 ft and higher AGL

Above 200 ft & below 1000 ft AGL (above 200 ft AGL if urban areas)

Winc Turbine

Group Obstruction

Obstruction with high-intensity lights; may operate part-time

Wind Turbine Pans

Elevation of the top above mean sea level

Height above ground

Under construction or reported position and elevation unverified

NOTICE: Guy wires may extend outward from structures.

### MISCELLANEOUS

- A - Aerobatic Practice Area (See Supplement.)
- G - Glider Operations
- H - Hang Glider Activity
- U - Ultralight Activity
- UA - Unmanned Aircraft Activity
- Parachute Jumping Area (See Supplement.)
- STADIUM Intermitter TFR site (within 3 NM, up to & incl 3000' AGL)
- Marine Light
- VPXYZ - VFR Waypoints
- Space Launch Activity Area
- Isogonic Line (3030 VALUE)
- NAME (VPXYZ)

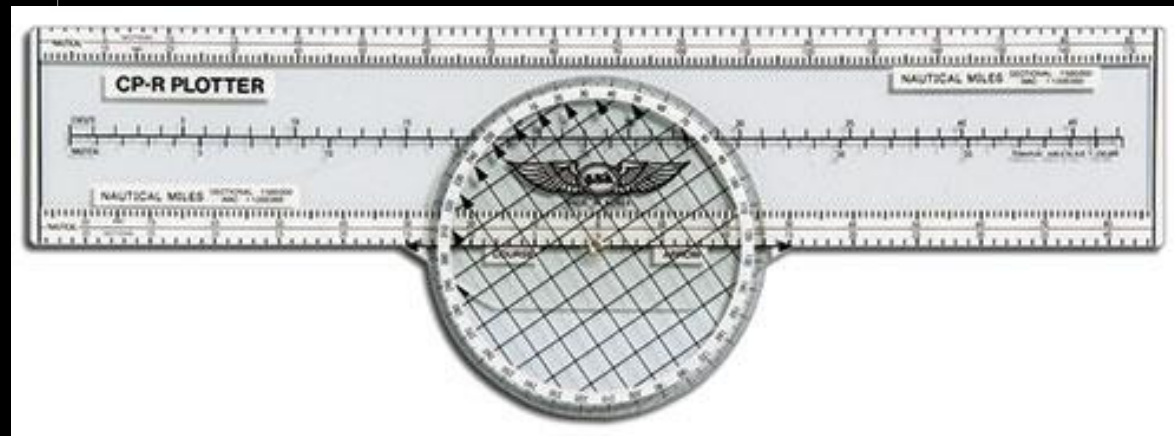
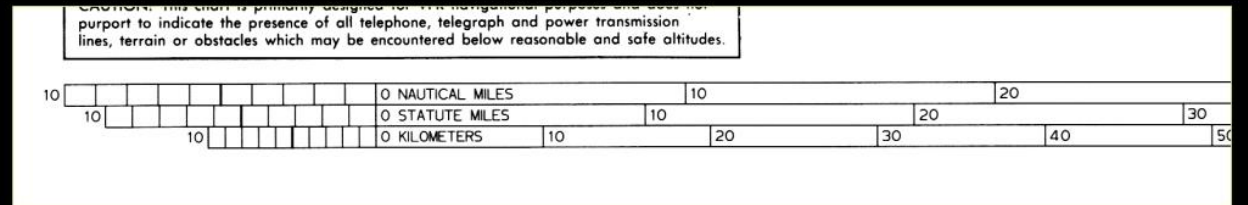
### TOPOGRAPHIC INFORMATION

- Power Transmission Line
- Aerial Cable
 Mountain Pass
- 11823 (Elevation of Pass)
- Pass symbol does not indicate a recommended route or direction of flight and pass elevation does not indicate a recommended clearance altitude. Hazardous flight conditions may exist within and near mountain passes.
- Locust Tower
- 619 (Elevation Base of Tower)

# Sectional Chart Mileage Scale

- Sectional chart has a scale of 1 to 500,000
- Each inch on a sectional chart represents 500,000 inches on the actual earth
- Sectional charts have their own mileage scale
- Your plotter corresponds to this scale

## Sectional Chart Mileage Scale



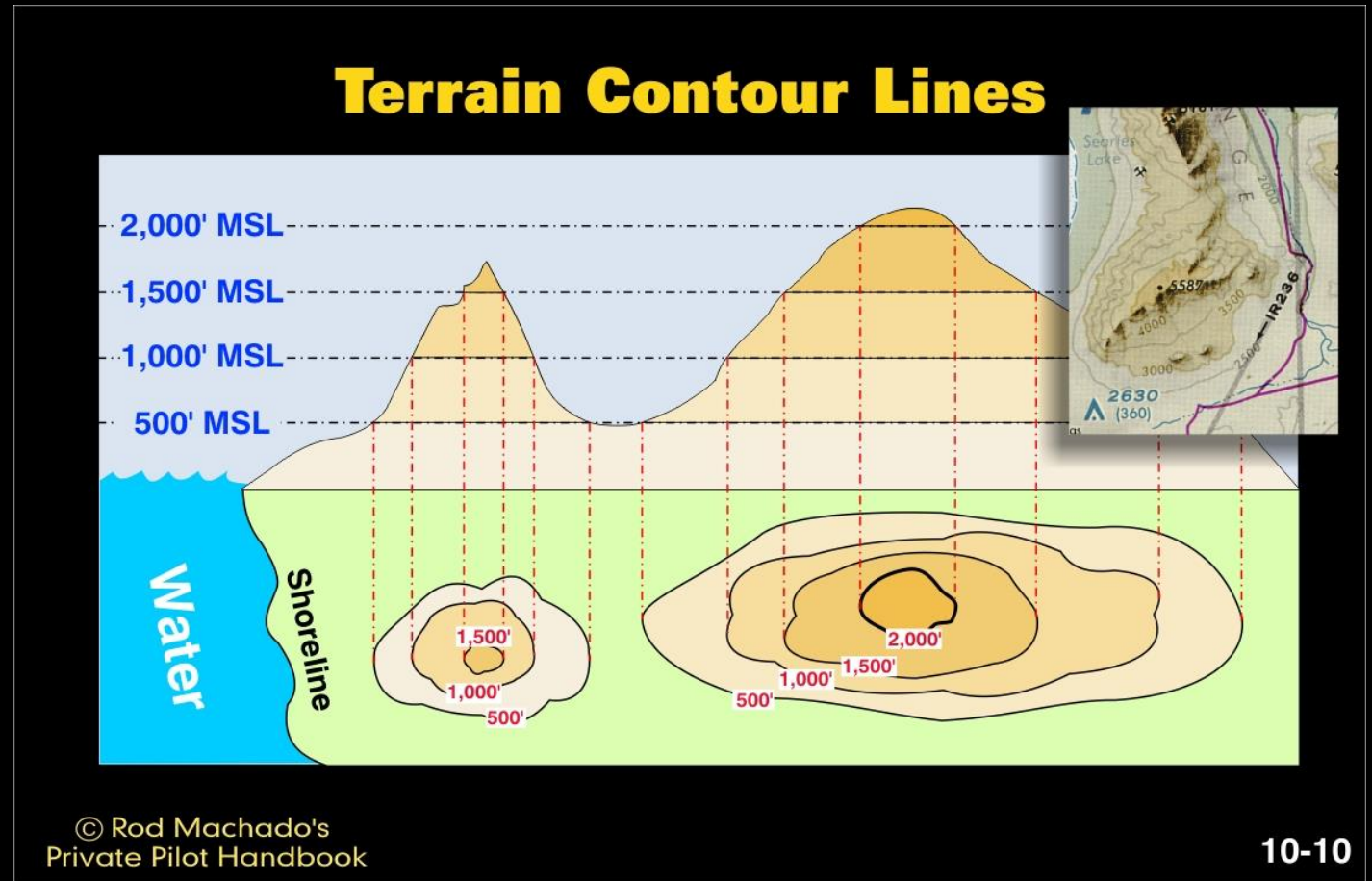


# Topographical Information On a Sectional Chart

- Pilotage is mostly accomplished by use of the sectional chart
- Translating the shadings and markings on the chart into a mental picture and match it up with what's outside is a learned skill
- Not all features on the ground are shown on the chart
- What's shown on the chart is almost always found on the surface

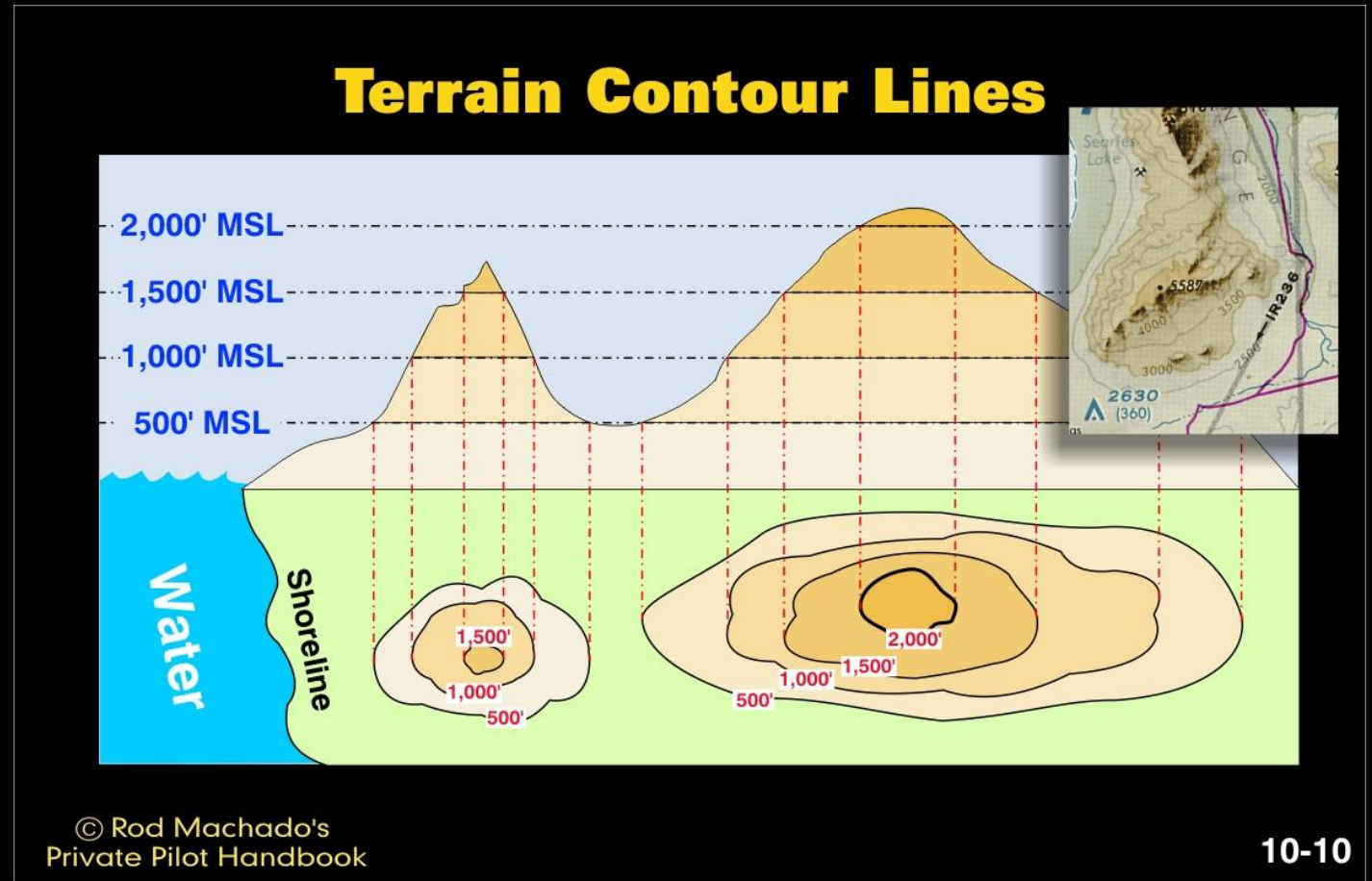
# Terrain Contour Lines

- Depicting 3-D hilly and mountainous terrain on a 2-D chart presents some difficulty
- Mapmakers use contours to depict terrain elevations
- Contours are lines joining areas of equal elevation



# Terrain Contour Lines

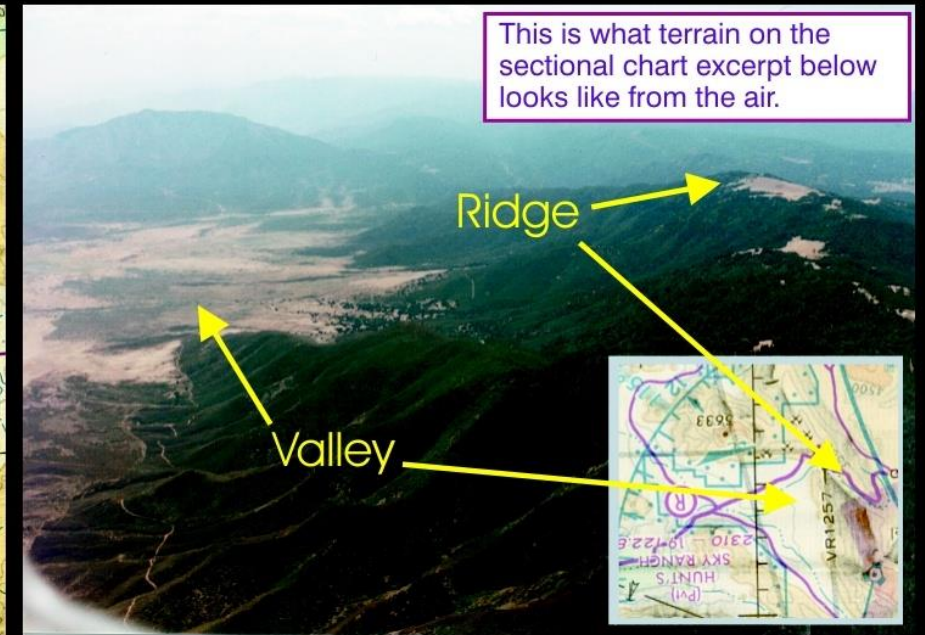
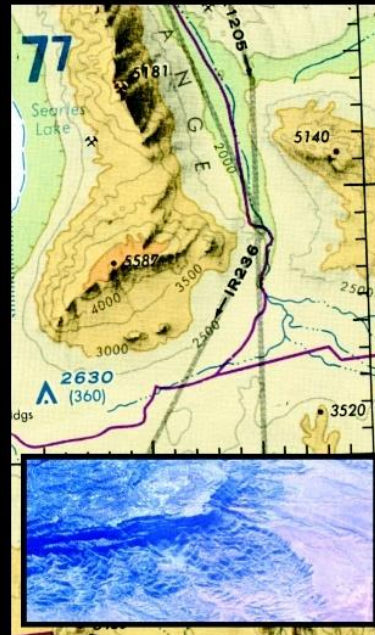
- Contour lines are spaced at 500' intervals
- Occasionally, contours may be shown at 250', 100', or 50' levels in areas of relatively low relief (slope)
- Slope of the terrain determined by examining the spacing between the contour lines



# Terrain Contours

- Closely-spaced contour levels indicate rapidly rising terrain
- Contours spaced farther apart indicate less precipitous terrain

## Terrain Contour Comparisons

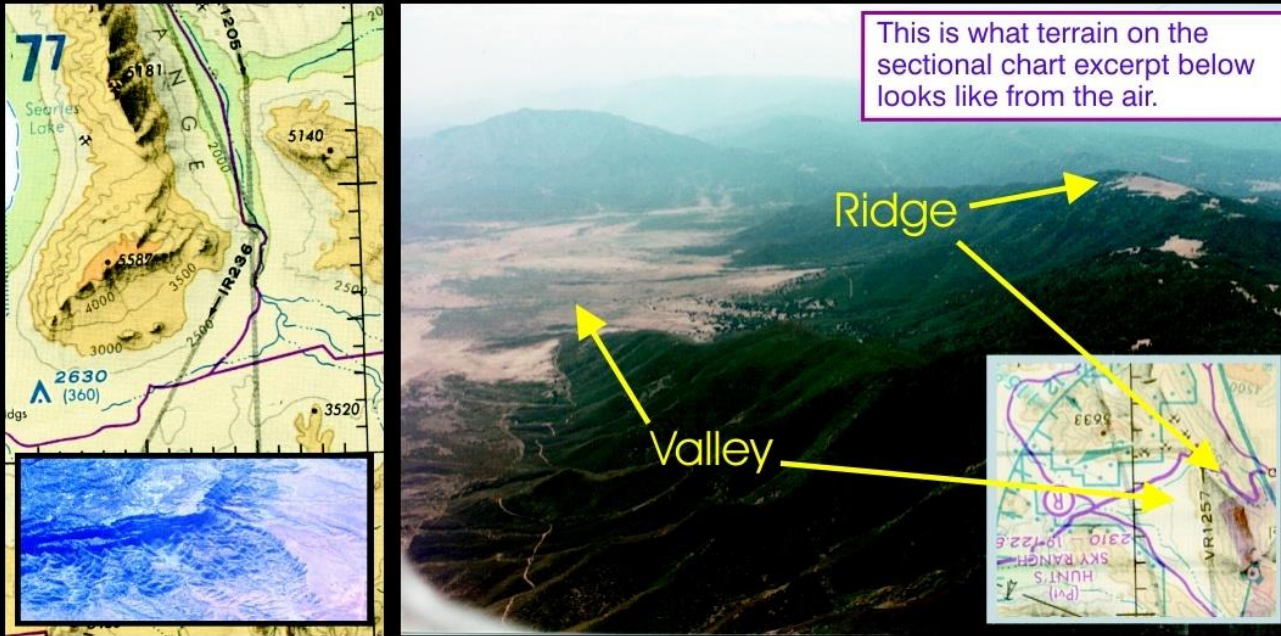




# Terrain Contours

- Ridge and valley contours depict terrain elevation

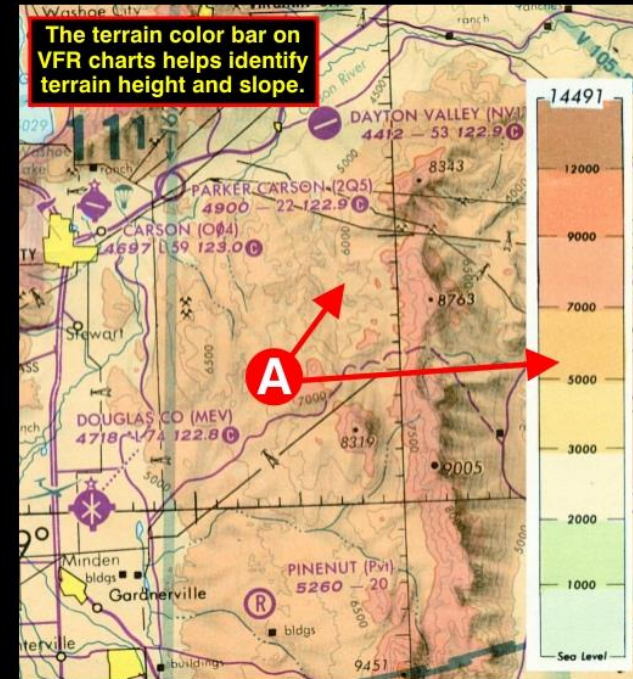
## Terrain Contour Comparisons



# Terrain Color Bar Legend

- Color is used to determine height and slope of terrain
- Sectional charts have a terrain color bar on the front side
- Specific colors represent the maximum and minimum elevations of terrain
- Colors range from light green for the lowest elevation to dark brown for higher elevations

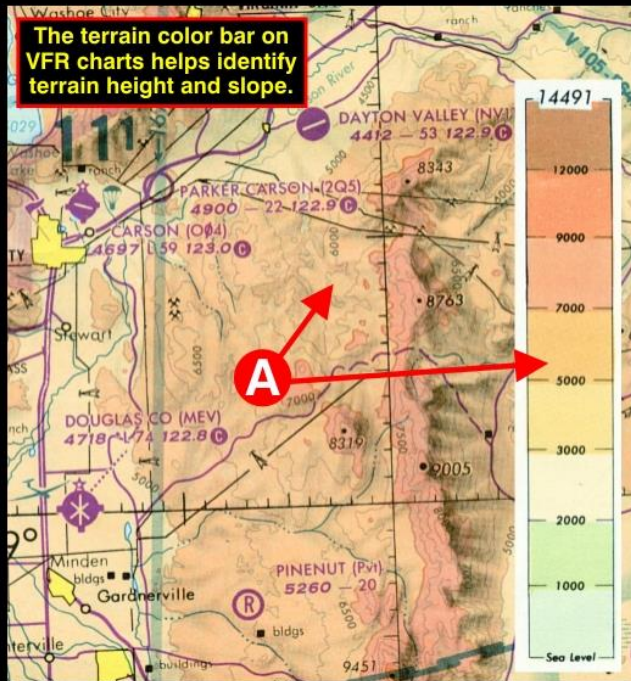
## Sectional Chart's Terrain Color Bar





# Terrain Color Bar Legend

## Sectional Chart's Terrain Color Bar



- The dark yellowish color shown (A) represents terrain rising between 5,000 and 7,000 feet above sea level
- A specific color doesn't precisely indicate the height of terrain
- It indicates a range of altitudes (i.e., 5,000' to 7,000') through which terrain can be found in those areas

# Spot Elevation Symbols

- More precise indications of terrain are identified by spot elevations
- Small black dots indicate the high point on a particular mountain range or ridge
- Next to the dot is the elevation of that spot above sea level

## Spot Elevations

A spot elevation identifies high points on a mountain range or ridge.

Same terrain from previous figure as seen from the air.

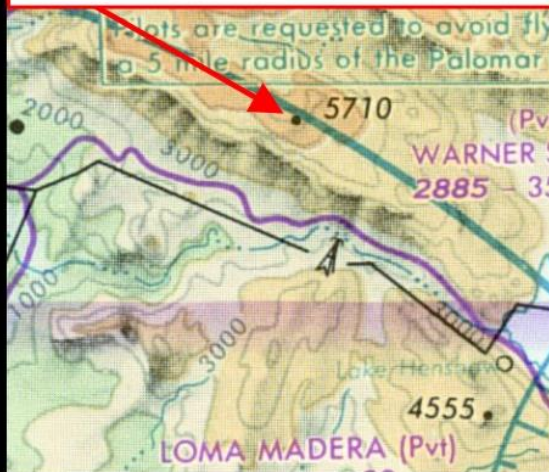
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10-13

# Spot Elevation Symbols

## Spot Elevations

A spot elevation identifies high points on a mountain range or ridge.



Same terrain from previous figure as seen from the air.



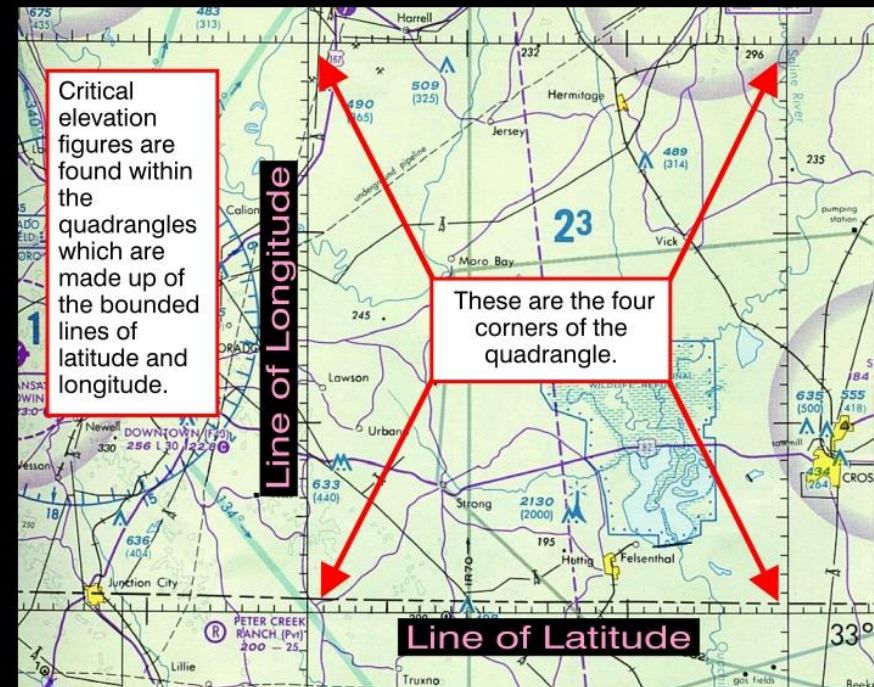
- There can be several spot elevations in a local area
- These spot elevations show heights of local peaks and don't always represent the highest terrain in that area



# Critical Elevation Location

- Quadrangles are the rectangular areas bounded by printed lines of longitude and latitude
- Within each quadrangle there is a single large black dot

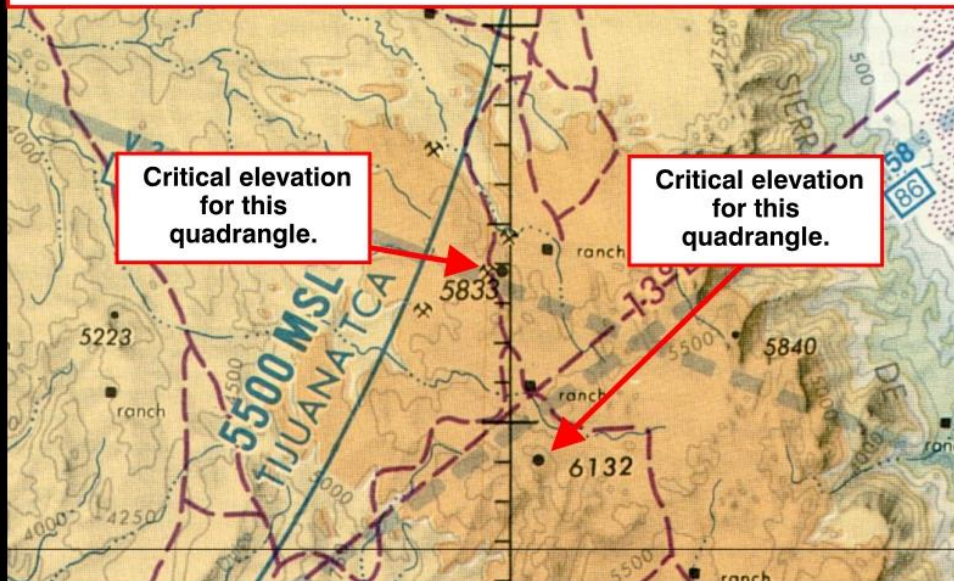
## Critical Elevation Location



# Critical Elevation Symbols

## Critical Elevation Symbols

The critical elevation figure is identified by a slightly larger black circle and numbers within the quadrangle.

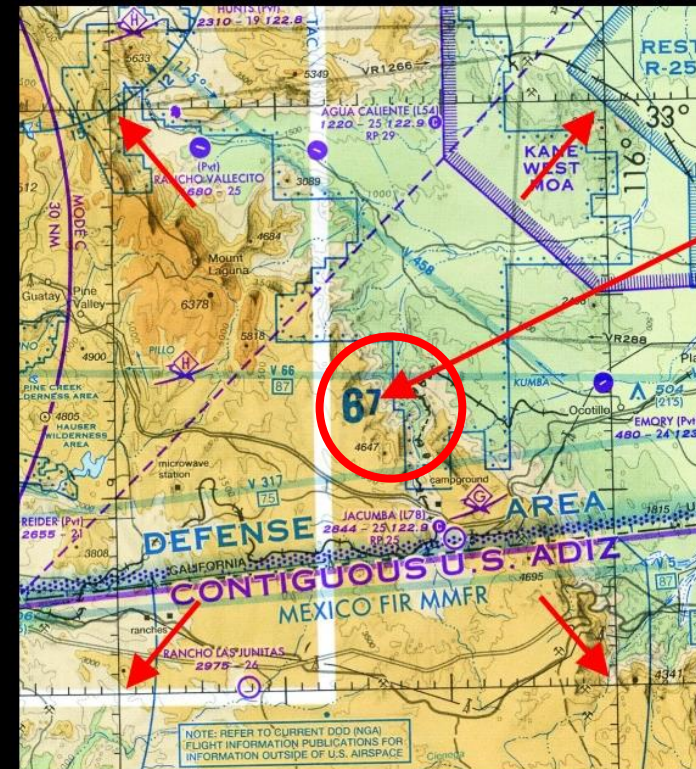


- Dot is a special spot elevation figure locating the highest terrain within that area showing its height above SL
- While there may be several spot elevation figures (small black dots) within a quadrangle, there will only be one represented by a larger black dot

# Maximum Elevation Figure

- Represent the highest elevation of terrain and other obstacles within a quadrangle
- Two-digit number represents the MEF value in hundreds of feet with the last two zeros missing
- MEF value of 6,700 in quadrangle containing the spot elevation of 6,378

## The Maximum Elevation Figure



The dark blue numbers in the center of the quadrangle is the Maximum Elevation Figure (MEF).



# Maximum Elevation Figure

- The MEF is not the minimum altitude you should fly within a quadrangle
- You should be at least a minimum of 1,000 to 2,000 feet higher (or more) than any MEF value shown along your route
- Especially important at night when it's difficult to see terrain or obstacles

## The Maximum Elevation Figure



The dark blue numbers in the center of the quadrangle is the Maximum Elevation Figure (MEF).

# How is an MEF Calculated?

- When a man-made obstacle is more than 200' above the highest terrain within the quadrant:
  - Determine the elevation of the top of the obstacle above MSL.
  - Add the possible vertical error of the source material to the above figure (100' or 1/2 contour interval when interval on source exceeds 200'. U.S. Geological Survey Quadrangle Maps with contour intervals as small as 10' are normally used).
  - Round the resultant figure up to the next higher hundred-foot level.

# How is an MEF Calculated?

- When a natural terrain feature or natural vertical obstacle (e.g. a tree) is the highest feature within the quadrangle:
  - Determine the elevation of the feature.
  - Add the possible vertical error of the source to the above figure (100' or 1/2 the contour interval when interval on source exceeds 200').
  - Add a 200' allowance for uncharted natural or manmade obstacles. Chart specifications don't require the portrayal of obstacles below minimum height.
  - Round the figure up to the next higher hundred-foot level.

# How is an MEF Calculated?

- Elevation of obstacle top (MSL) 13161
- Possible vertical error +100
- Obstacle Allowance +200
- =13461
- Raise to the following 100' level 13500
- Maximum Elevation Figure (MEF) is 13<sup>5</sup>

# How is an MEF Calculated?


- Elevation of obstacle top (MSL) 2649
  - Possible obstacle error +10
  - =2749
  - Raise to the following 100' level 2800
- Maximum Elevation Figure (MEF) 2<sup>8</sup>

# Obstacles

- Symbol represents obstacles standing less than 1,000 feet AGL
- Bold number represents the height of the top of the obstacle above SL
- Number within the parentheses is the height the obstacle stands above ground level (AGL)
- To find the height of the base of the obstacle above SL subtract the obstacle's AGL height from its height above SL


## Obstructions

This symbol represents an obstacle standing less than 1,000' AGL.



10-17A&18  
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Symbols that look like large tepees are obstacles standing 1,000' or more AGL.



LANG (Pvt) 114 - 29  
LESTER (Pvt) 115 - 30423



# Obstacles

## Obstructions

This symbol represents an obstacle standing less than 1,000' AGL.



Symbols that look like large tepees are obstacles standing 1,000' or more AGL.



- Obstacles standing 1,000 feet and higher AGL are portrayed by a more elongated obstruction symbol
- The bold numbers and those within parentheses represent heights MSL and AGL, respectively

# Obstacles

- Some obstacles have light-ray symbols emanating from the top of the obstruction symbol
- Indicates the obstacle has a high intensity strobe lighting system
- An obstacle with the letters "UC" next to it means the obstacle is under construction
- If the eventual height above ground the obstacle will stand is known it will be shown in parentheses

## Obstructions

Light-rays emanating from an obstacle indicates the presence of high intensity strobe lights.



"UC" next to an obstacle indicates it is under construction.



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# Roads

- Relatively easy to identify from the air
- VFR charts often distinguish between single and multi-lane roads
- Some major interstates have their route numbers listed on the sectional chart

## Roads

Roads are excellent visual checkpoints for navigation by pilotage.

The same road shown in Figure 21A.



10-21A&21B

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# Railroad Tracks

- Often relatively easy to identify from the air at low altitudes

## Railroad Tracks

Railroad tracks can make good checkpoints.



Railroad tracks from Figure 22A as seen from the air.

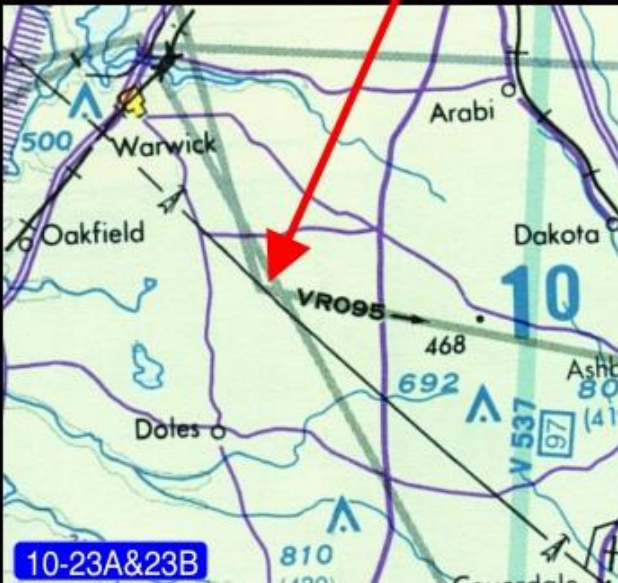




# Power Lines

## Power Lines

Power transmission lines are sometimes difficult to see from the air.



Power lines similar to those seen in Figure 23A.



- Power transmission lines are depicted on charts as shown
- Not very wide and they tend to blend in with the terrain below
- Easy to spot if right of way has been cleared in forests

# Shorelines, Wharves, Piers

- Very easy to identify

## Shorelines, Wharves & Piers

Shorelines, wharves and piers are excellent checkpoints.

Shoreline from Figure 24A as seen from the air.



10-24A&24B

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# Bodies of Water

- More difficult to recognize streams and small rivers
- Better to use larger bodies of water, roads or other references for VFR checkpoints

Large bodies of water can make excellent checkpoints.

## Large Bodies of Water

The same large body of water as seen from the air.



10-25A&25B

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# Populated Areas

- Populated areas in the form of cities and large towns are outlined in yellow

## Populated Areas

Populated areas (shown in yellow) are good reference points although their borders may not reflect the actual shape of the area.

This is the populated area in Figure 27A as seen from the air. At night, city lights can make these areas easily identifiable from the air.



10-27A&27B

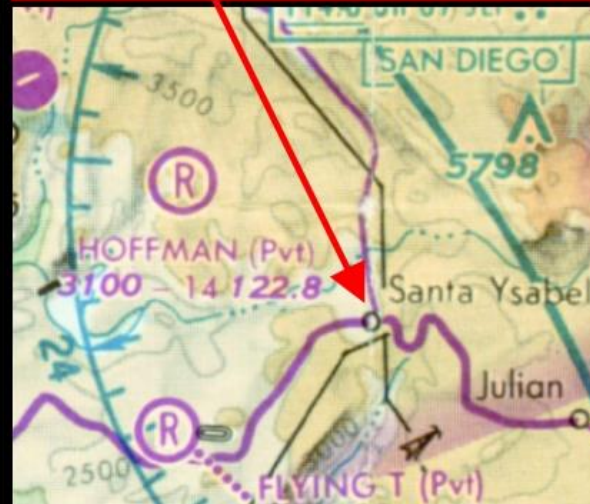
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# Towns and Villages

- Smaller towns and villages are shown by an empty circle making them useful VFR landmarks
- More useful at night where their lights provide extremely helpful landmarks

## Towns & Villages

Small towns and villages are shown by white circles with along with the town's name.



10-28A&28B

The same small town in Figure 28A as seen from the air. At night the light clusters from these towns make good checkpoints.



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# Airport Symbols

- Best VFR reporting points
- Magenta colored airports don't have an air traffic control tower (ATCT)
- Airports in blue have a tower (may not operate 24 hours a day)
- All recognizable runways are shown within the airport symbol for visual identification

## Airport Symbols

Airports colored in magenta don't have air traffic control towers.

Airports (magenta or blue) with hard surface runways longer than 8,000' take on a more realistic look.

Airports colored in blue have air traffic control towers.



10-29,30,31

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# Airport Symbols

## Airport Symbols

Airports colored in magenta don't have air traffic control towers.

Airports (magenta or blue) with hard surface runways longer than 8,000' take on a more realistic look.

Airports colored in blue have air traffic control towers.



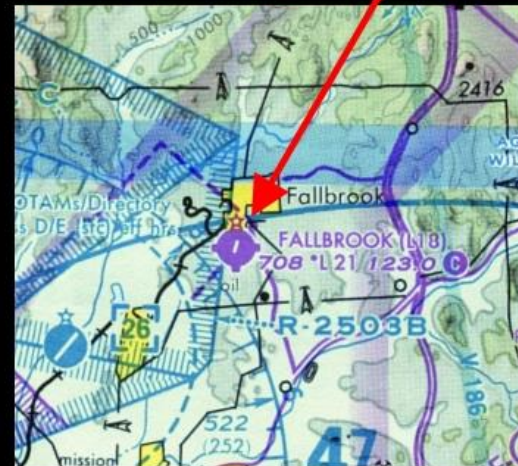
- Both magenta and blue airport symbols are circles unless the airport has a hard surfaced runway greater than 8,069 feet
- In that case the actual runway layout is shown

# Runway Surfaces

- Any airport having a darkened circle, with the runways in reverse-bold white, has a hard surface runway between 1,500 and 8,069 feet in length

## Runway Surfaces

Airports with a dark circle have at least a 1,500' to 8,000' hard surface runway.



10-32A&32B

This is the same hard surface runway as seen from the air.



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# Runway Surfaces

- Airports with soft surface runways (grass, dirt, etc.) or with hard surfaces less than 1,500 feet long are shown by an open symbol without the runway(s)

## Runway Surfaces

Airports having other than hard surfaces at least 1,500' long or soft surfaces are shown by an open symbol.



This is a typical soft surface runway seen from the air.



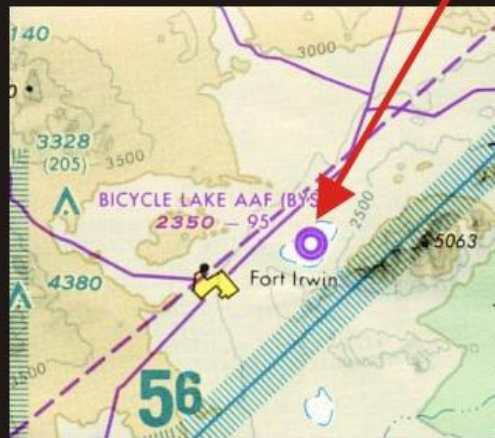


# Airport Symbols

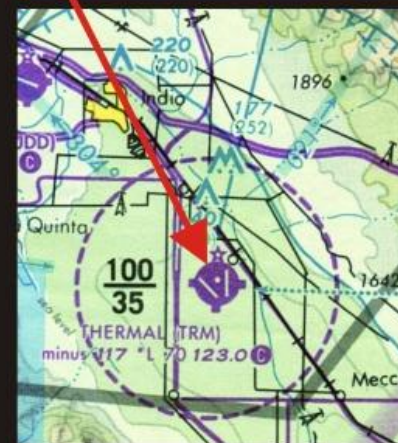
- Military airports shown by a double circle
- An open dot within a hard-surfaced runway configuration indicates the approximate position of a VOR located on the field
- Airport symbols having four square protrusions around the airport indicate fuel services are available during normal working hours (Mon-Fri, 10 to 4 pm local time)

## Airport Symbols

Military airports with other than hard surface runways are shown by a double circle.



An open dot within a hard-surface runway configuration indicates the position of a VOR on the airport. Square protrusions indicate fuel services are available during normal business hours.



Restricted airports (not open to the public) are shown with an "R" in the airport circle or by a "PVT" above the airport name.



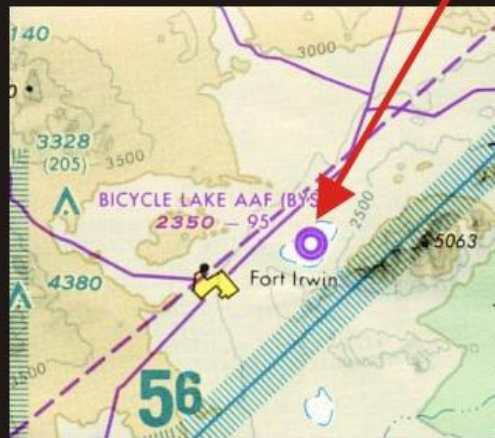


# Airport Symbols

- Some airports are restricted to emergencies or by special authorization
- Identified by the airport symbol containing the letter "R" if they have soft surface runways or hard surfaced runways less than 1,500 in length
- The letters "PVT" shown if they are not for public use

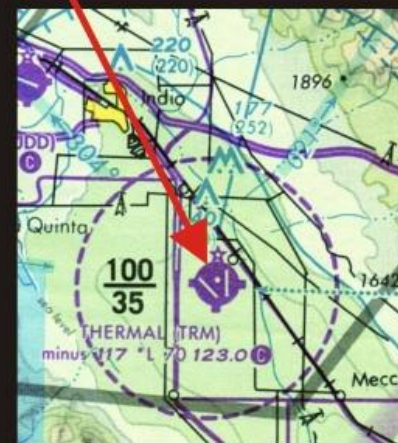
## Airport Symbols

Military airports with other than hard surface runways are shown by a double circle.



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An open dot within a hard-surface runway configuration indicates the position of a VOR on the airport. Square protrusions indicate fuel services are available during normal business hours.



Restricted airports (not open to the public) are shown with an "R" in the airport circle or by a "PVT" above the airport name.



10-34,35,36

# Airport Data

- Official airport name is above the control tower frequency (CT), with airport ID
- Some airports have more than one control tower frequency used by aircraft approaching from different directions, or using different parallel runways
- ATIS frequency is listed
- Some airports have AWOS or ASOS that provide a repeating, 1-minute recording of the local airport weather

## Airport Data Information

This figure shows typical airport data for a tower controlled airport. Next to the airport symbol you'll find airport data.





# Airport Data

- Last line starts with the airport's elevation in dark bold numbers
- An "L" means lighting is available from sunset to sunrise
- Next is the length of the longest runway, in hundreds of feet and the unicom frequency

## Airport Data Information

This figure shows typical airport data for a tower controlled airport. Next to the airport symbol you'll find airport data.



# Airport Data

- The letters "RP" followed by a number indicate the runway(s) that have a non-standard right hand traffic pattern
- Unicom stations at tower controlled airports usually provide fuel service while those at nontowered airports usually provide traffic information (may also provide fuel service)

## Airport Data Information

This figure shows typical airport data for a tower controlled airport. Next to the airport symbol you'll find airport data.





# Airport Data

- Typical airport data for a nontowered airport
- Letter "\*L" has an asterisk next to it meaning airport lighting limitations exist
- Runway lights for night landings may be available part time or on request
- Refer to the d-CS to find out more about the airport's lighting

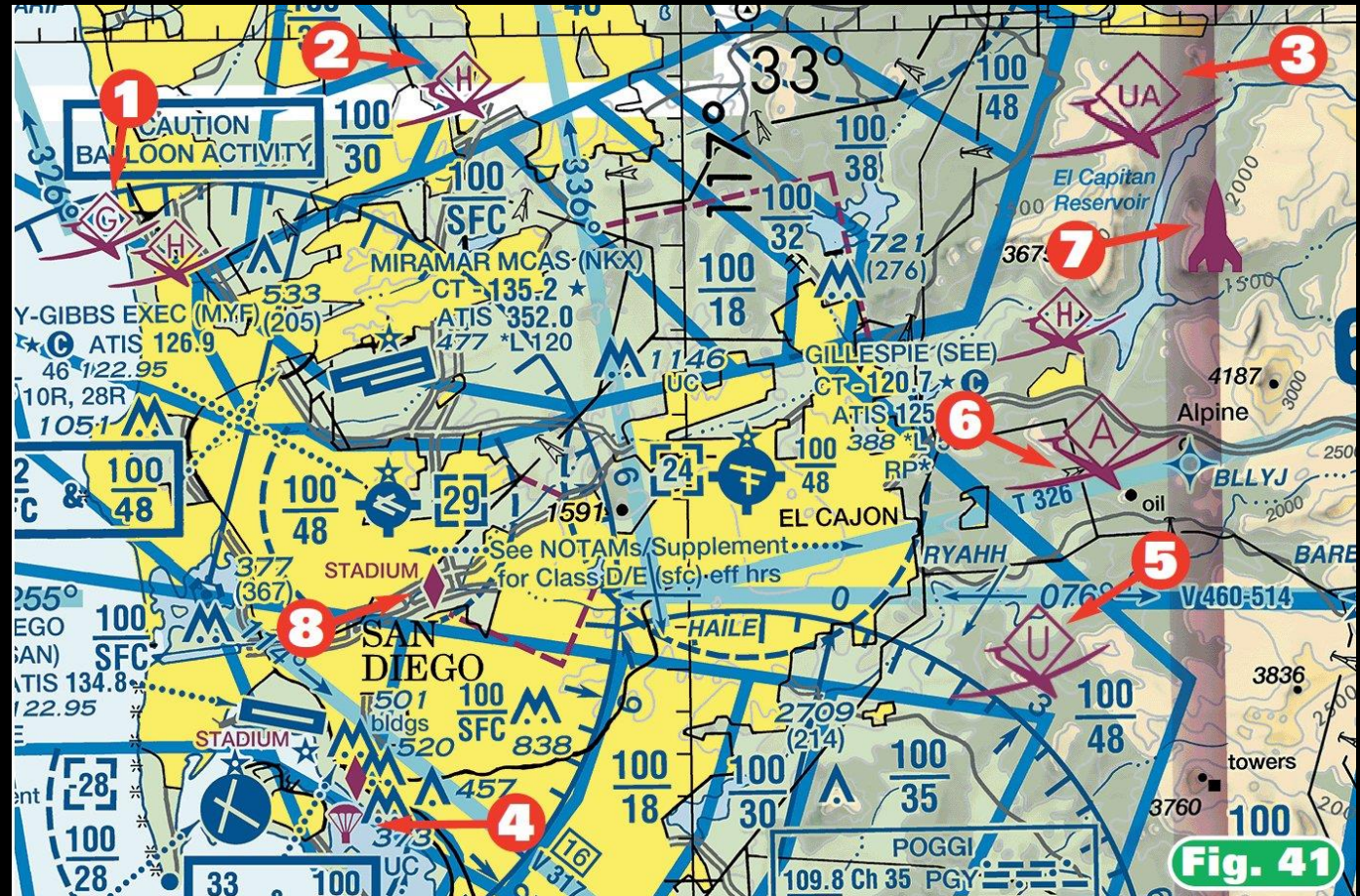
This figure shows typical airport data for a nontowered airport. The letter "\*L" with the asterisk indicates that runway lighting is available from sunset to sunrise, part time or on request.





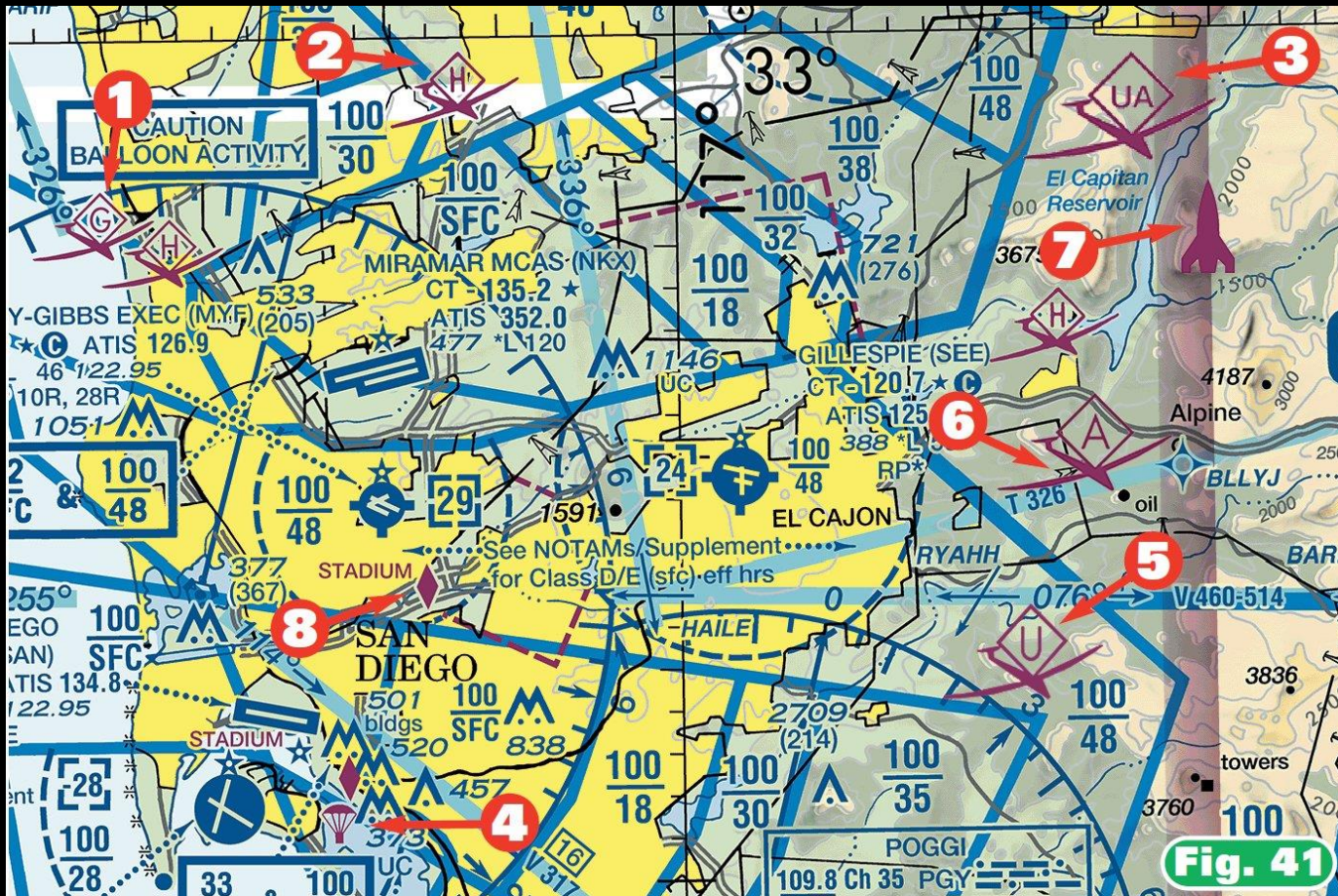
# Victor Airways

- Airways depicted on sectional charts beginning with "V"
- Typically extends from one VOR to the next and identified by its own unique number
- A square box with a number inside shows the airway distance in NM between VOR stations





# Airborne Vehicle Symbols



1. Glider
2. Hang glider
3. Unmanned aerial vehicles
4. Parachute areas
5. Ultralights
6. Aerobatic practice areas
7. Space launch activity areas
8. Intermittent stadium TFR prohibiting all aircraft and parachute operations at or below 3,000 feet AGL within 3 nm radius of any stadium with a seating capacity of 30,000 people or more when a major sport event is occurring

Fig. 41

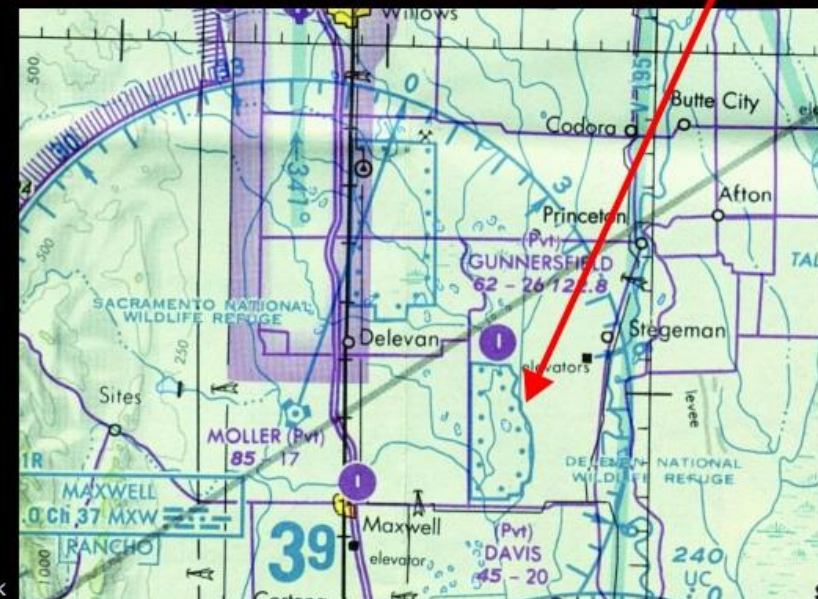


# Park, Wildlife, Forest, Wilderness and Primitive Areas

- Aircraft operating within one of these areas are often requested to maintain a minimum altitude of 2,000 feet AGL within these areas (unless the chart specifically notes a different altitude)

## Park, Wildlife, Forest Wilderness & Primitive Areas

The boundaries of a National Park service area, U.S. Fish and Wildlife Service area and U.S. Forest Service areas are shown by a solid blue line bordered by dashes. Pilots are requested to maintain at least 2,000' above the surface of these areas.





# VFR Checkpoints

- Shown on sectional and terminal charts by a magenta flag
- Their names are underlined and in bold capital letters
- These are prominent landmarks visible from the air
- ATC may ask you to report your position in reference to these landmarks when contacting them for landing

## GPS Identified VFR Checkpoints

GPS identified VFR checkpoints are identified by a magenta flag, the full checkpoint name as well as a five letter identifier. You can dial the five letter identifier into your GPS and navigate with reference to that checkpoint.



# GPS Identified VFR Checkpoints

- Some VFR checkpoints are collocated with GPS waypoints
- Name of the checkpoint is listed above its five letter GPS identification
- To navigate to these collocated checkpoints, load the five letter identifier into the GPS and proceed direct to the waypoint



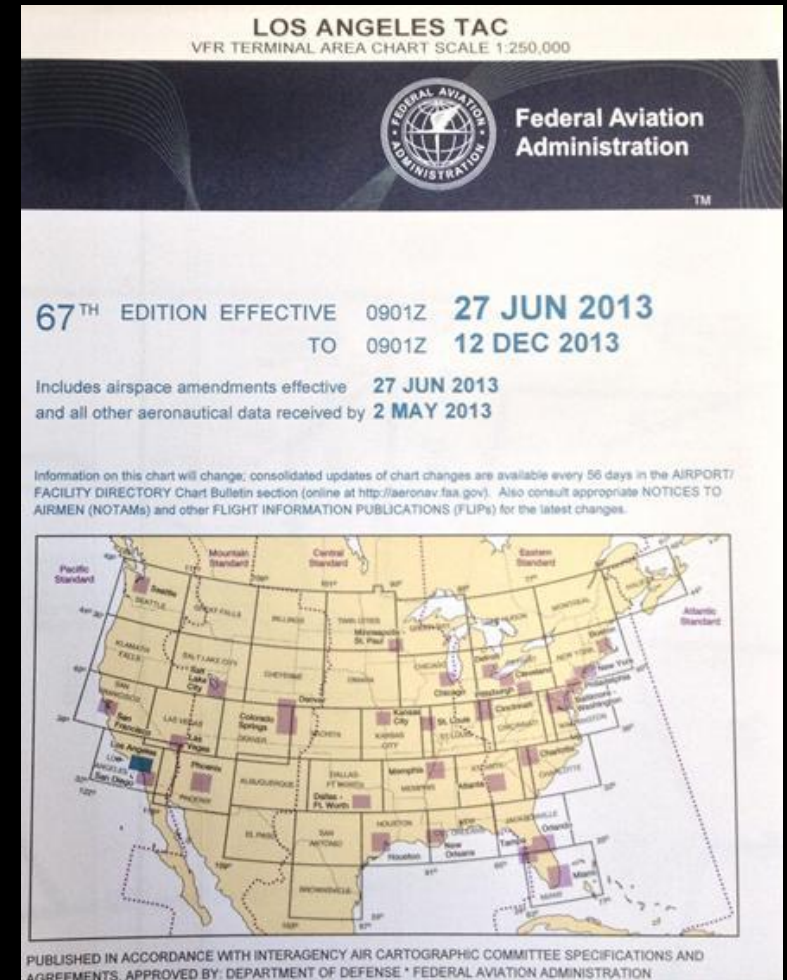
# Terminal Area Charts

Sectional Charts and Associated Publications



# VFR Terminal Area Chart

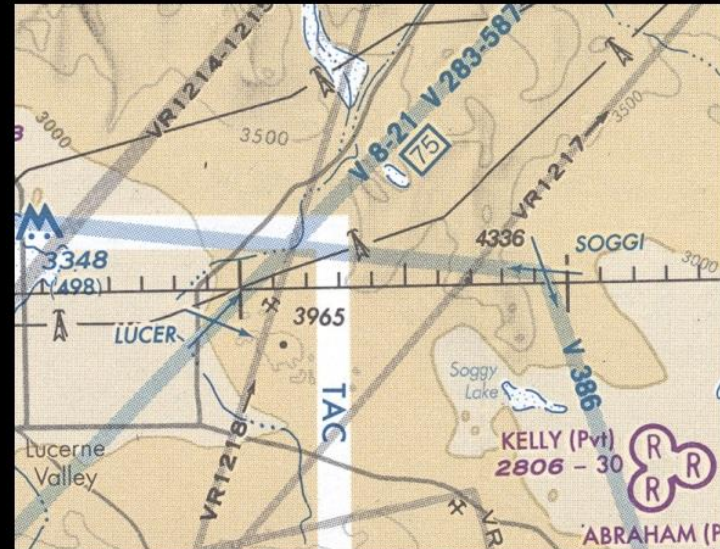
- Terminal areas are places with busy (such as Class B) airspace
- Many of these areas have a VFR terminal area chart associated with them



# VFR Terminal Area Chart Boundaries

- Area covered by the VFR terminal area chart is indicated by a white bordering rectangular line on a sectional chart

## VFR Terminal Area Chart Boundaries



# Chart Scale Comparisons

- TACs are exceptionally detailed with a scale of 1 to 250,000
- Provides much more detail than sectional charts
- Useful for pilots operating from airports within or near a major terminal area

## Sectional Chart Scale Comparisons

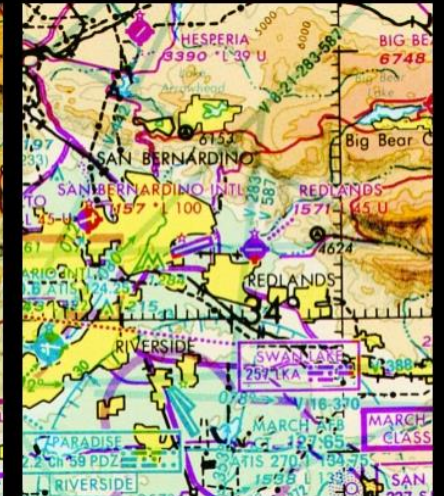
VFR Terminal Chart  
1:250,000



Sectional Chart  
1:500,000



WAC Chart  
1:1,000,000





# Chart Supplement

Sectional Charts and Associated Publications

# Digital Chart Supplement

- Chart information can change within the 56-day publishing cycle
- NOTAMs are the source for any changes in sectional charts between revision cycles
- Check the Chart Supplement to ensure sectional chart is up to date

**The Digital Chart Supplement lists changes that affect aeronautical sectional charts.**

**LOS ANGELES SECTIONAL**  
101st Edition, 22 Jun 2017

**OBSTRUCTIONS**  
22 Jun 2017 –17 Aug 2017 No Major Changes.

**AIRPORTS**  
22 Jun 2017 No Major Changes.  
17 Aug 2017 Delete BELRIDGE arpt, 35°28'05"N, 119°43'19"W.  
Delete REIDER arpt, 32°38'17"N, 116°38'21"W.  
Delete LLOYDS arpt, 34°54'20"N, 118°18'06"W.

**NAVAIDs**  
22 Jun 2017 No Major Changes.  
17 Aug 2017 Shutdown PRIEST VOR, 36°08'25"N, 120,deg>39'54"W.

**AIRSPACE**  
22 Jun 2017 –17 Aug 2017 No Major Changes.

**SPECIAL USE AIRSPACE**  
22 Jun 2017 –17 Aug 2017 No Major Changes.

**MILITARY TRAINING ROUTES**

**Fig. 5**

# Chart Supplement

- Airport is Watertown International
  - Identifier is "KART"
- Airport is located 5 miles west of the town
- Time is UTC-5 or UTC-4 during daylight savings
- Airport latitude and longitude coordinates

**WATERTOWN INTL** (ART)(KART) 5 W UTC-5(-4DT) N43°59.51' W76°01.17'

NEW YORK

331 B AOE LRA ARFF Index—See Remarks NOTAM FILE ART MON Airport

H-11C, 12K, L-32F

**RWY 10-28:** H7001X150 (ASPH-GRVD) S-109, D-154, 2D-254

PCN 43 F/C/X/T MIRL 0.3% up E

**RWY 10:** PAPI(P4L)—GA 3.0° TCH 47'. Trees.

**RWY 28:** REIL. PAPI(P4L)—GA 3.0° TCH 45'. Trees.

**RWY 07-25:** H4999X150 (ASPH-GRVD) S-105, D-147, 2D-244

PCN 41 F/C/X/T HIRL 0.3% up NE

**RWY 07:** MALSR. PAPI(P4L)—GA 3.0° TCH 52'. Trees.

**RWY 25:** PAPI(P4L)—GA 3.0° TCH 44'. Trees.

#### RUNWAY DECLARED DISTANCE INFORMATION

**RWY 07:** TORA-4999 TODA-4999 ASDA-4784 LDA-4784

**RWY 10:** TORA-7001 TODA-7001 ASDA-7001 LDA-7001

**RWY 25:** TORA-4999 TODA-4999 ASDA-4999 LDA-4999

**RWY 28:** TORA-7001 TODA-7001 ASDA-7001 LDA-7001

**SERVICE:** S4 FUEL 100LL, JET A LGT Actvt MALSR Rwy 07; REIL

Rwy 28; PAPI Rwy 10 and 28; HIRL Rwy 07-25; MIRL Rwy

10-28; twy lgts—CTAF.

**AIRPORT REMARKS:** Attended Oct-Apr 1100-2300Z†, May-Sept

1000-0000Z†. Deer and birds on and invof arpt. For fuel after hrs

call 315-816-2331 or 315-816-2334. PPR for use of

unimproved sfcs on arpt ctc arpt manager 315-786-6002.

Caution ngt vision device ops periodically conducted in arpt traffic

pattern area. Twy lgts not vsb under ngt vision goggles. Military helicopters training on and invof arpt. RC model acft act

located 4 NM north of Watertown Intl Arpt blo 400' at 44.05 N-76.05 W. Class 1, ARFF Index A. PPR 2 hrs for

unscheduled ops with more than 30 passenger seats call 315-466-6741 or 315-447-6405. Index B coverage is avbl

on req. Rwy/Twy conditions not monitored outside of normal attendance hrs. Acft de/anti icing avbl, ctc FBO

315-786-6001. Ldg fee for acft over 6000 lbs gross weight. 2 hrs advance notice to U.S. CSTMS by pilot rqrd, call

315-482-2261. User fee arpt.

**AIRPORT MANAGER:** 315-786-6002

**WEATHER DATA SOURCES:** ASOS 132.325 (315) 639-4002.

**COMMUNICATIONS:** CTAF/UNICOM 123.0

RCO 122.2 (BURLINGTON RADIO)

RCO 122.1R 109.8T (BURLINGTON RADIO)

® WHEELER-SACK APP/DEP CON 124.875

CLNC DEL 120.8

**AIRSPACE:** CLASS E.

**RADIO AIDS TO NAVIGATION:** NOTAM FILE ART.

(L) (L) VORTAC 109.8 ART Chan 35 N43°57.13' W76°03.88' 051° 3.1 NM to fld. 374/12W.

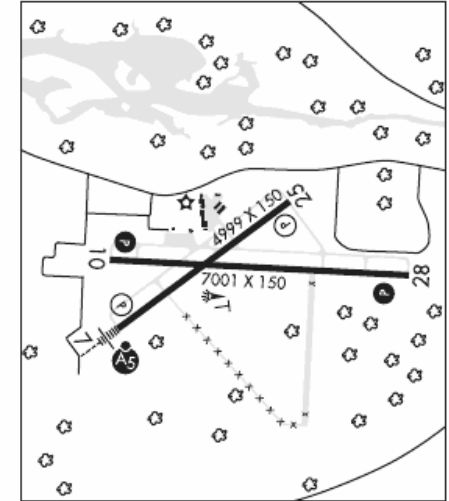
VOR unusable:

090°-111° byd 15 NM

112°-150°

151°-175° byd 20 NM

ILS 111.1 I-ART Rwy 07. Class ID.





# Chart Supplement

- 331' is airport field elevation
- AOE labels this and an Airport of Entry
- MON Airport labels this as a minimum operations network airport

**WATERTOWN INTL** (ART)(KART) 5 W UTC-5(-4DT) N43°59.51' W76°01.17'

**NEW YORK**  
H-11C, 12K, L-32F  
IAP, AD

331 B AOE LRA ARFF Index—See Remarks NOTAM FILE ART MON Airport

**RWY 10-28:** H7001X150 (ASPH-GRVD) S-109, D-154, 2D-254

PCN 43 F/C/X/T MIRL 0.3% up E

**RWY 10:** PAPI(P4L)—GA 3.0° TCH 47'. Trees.

**RWY 28:** REIL. PAPI(P4L)—GA 3.0° TCH 45'. Trees.

**RWY 07-25:** H4999X150 (ASPH-GRVD) S-105, D-147, 2D-244

PCN 41 F/C/X/T HIRL 0.3% up NE

**RWY 07:** MALSR. PAPI(P4L)—GA 3.0° TCH 52'. Trees.

**RWY 25:** PAPI(P4L)—GA 3.0° TCH 44'. Trees.

#### RUNWAY DECLARED DISTANCE INFORMATION

**RWY 07:** TORA-4999 TODA-4999 ASDA-4784 LDA-4784

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**RWY 28:** TORA-7001 TODA-7001 ASDA-7001 LDA-7001

**SERVICE:** S4 FUEL 100LL, JET A LGT Actvt MALSR Rws 07; REIL

Rwy 28; PAPI Rws 10 and 28; HIRL Rwy 07-25; MIRL Rwy

10-28; twy lgts—CTAF.

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Caution ngt vision device ops periodically conducted in arpt traffic

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located 4 NM north of Watertown Intl Arpt blo 400' at 44.05 N-76.05 W. Class 1, ARFF Index A. PPR 2 hrs for

unscheduled ops with more than 30 passenger seats call 315-466-6741 or 315-447-6405. Index B coverage is avbl

on req. Rwy/Twy conditions not monitored outside of normal attendance hrs. Acft de/anti icing avbl, ctc FBO

315-786-6001. Ldg fee for acft over 6000 lbs gross weight. 2 hrs advance notice to U.S. CSTMS by pilot rqrd, call

315-482-2261. User fee arpt.

**AIRPORT MANAGER:** 315-786-6002

**WEATHER DATA SOURCES:** ASOS 132.325 (315) 639-4002.

**COMMUNICATIONS:** CTAF/UNICOM 123.0

RCO 122.2 (BURLINGTON RADIO)

RCO 122.1R 109.8T (BURLINGTON RADIO)

® WHEELER-SACK APP/DEP CON 124.875

CLNC DEL 120.8

**AIRSPACE:** CLASS E.

**RADIO AIDS TO NAVIGATION:** NOTAM FILE ART.

(L) (L) VORTAC 109.8 ART Chan 35 N43°57.13' W76°03.88' 051° 3.1 NM to fld. 374/12W.

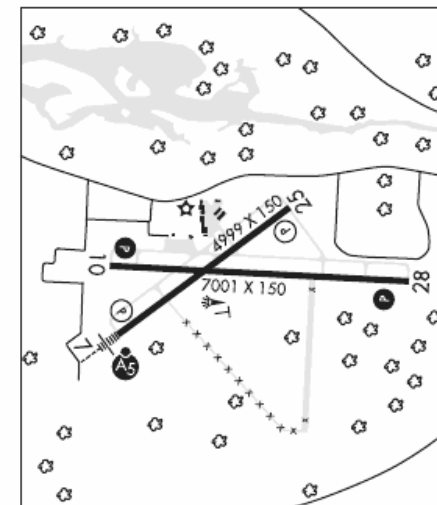
VOR unusable:

090°-111° byd 15 NM

112°-150°

151°-175° byd 20 NM

ILS 111.1 I-ART Rwy 07. Class ID.



# Chart Supplement

- Runway info
- Runway Declared Distance Information
- Service Type
- Airport Remarks
- Airport Manager
- ATC frequencies
- Radios Aids to navigation

**WATERTOWN INTL** (ART)(KART) 5 W UTC-5(-4DT) N43°59.51' W76°01.17'

NEW YORK

331 B AOE LRA ARFF Index—See Remarks NOTAM FILE ART MON Airport

H-11C, 12K, L-32F

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IAP, AD

PCN 43 F/C/X/T MIRL 0.3% up E

**RWY 10:** PAPI(P4L)—GA 3.0° TCH 47'. Trees.

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**RWY 07:** MALSR. PAPI(P4L)—GA 3.0° TCH 52'. Trees.

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**RWY 28:** TORA-7001 TODA-7001 ASDA-7001 LDA-7001

**SERVICE:** S4 FUEL 100LL, JET A LGT Actvt MALSR Rws 07; REIL

Rwy 28; PAPI Rws 10 and 28; HIRL Rwy 07-25; MIRL Rwy 10-28; twy lghts—CTAF.

**AIRPORT REMARKS:** Attended Oct-Apr 1100-2300Z†, May-Sept

1000-0000Z†. Deer and birds on and in vof arpt. For fuel after hrs call 315-816-2331 or 315-816-2334. PPR for use of unimproved fcs on arpt ctc arpt manager 315-786-6002.

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**AIRPORT MANAGER:** 315-786-6002

**WEATHER DATA SOURCES:** ASOS 132.325 (315) 639-4002.

**COMMUNICATIONS:** CTAF/UNICOM 123.0

RCO 122.2 (BURLINGTON RADIO)

RCO 122.1R 109.8T (BURLINGTON RADIO)

Ⓡ WHEELER-SACK APP/DEP CON 124.875

CLNC DEL 120.8

**AIRSPACE:** CLASS E.

**RADIO AIDS TO NAVIGATION:** NOTAM FILE ART.

(L) (L) VORTAC 109.8 ART Chan 35 N43°57.13' W76°03.88' 051° 3.1 NM to fld. 374/12W.

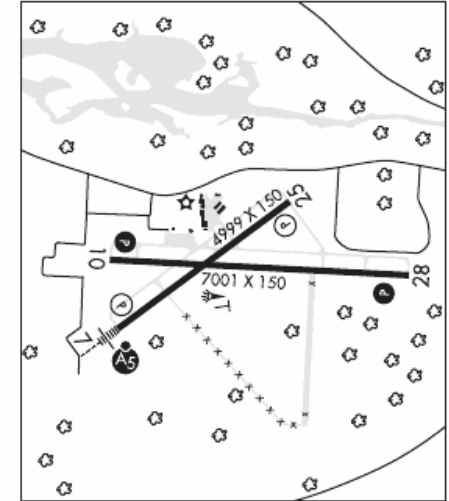
VOR unusable:

090°-111° byd 15 NM

112°-150°

151°-175° byd 20 NM

ILS 111.1 I-ART Rwy 07. Class ID.



# Knowledge Check

What does a “\*RP” mean on a VFR sectional chart?

- A. Right pattern at all times
- B. Right pattern at certain times
- C. Reduced pavement on the runway
- D. Optional right pattern



# Knowledge Check

What does a “\*RP” mean on a VFR sectional chart?

- A. ~~Right pattern at all times~~
- B. Right pattern at certain times
- C. ~~Reduced pavement on the runway~~
- D. ~~Optional right pattern~~

# Knowledge Check

What type of chart give the most detail?

- A. VFR Planning chart (WAC)
- B. VFR Sectional chart
- C. Terminal Area Chart (TAC)
- D. Both A and B

# Knowledge Check

What type of chart give the most detail?

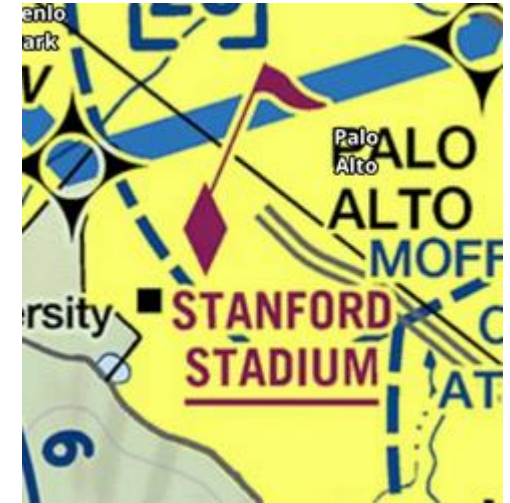
- A. ~~VFR Planning chart (WAC)~~
- B. ~~VFR Sectional chart~~
- C. Terminal Area Chart (TAC)
- D. ~~Both A and B~~



# Knowledge Check

What is the flag-like symbol at Stanford Stadium?

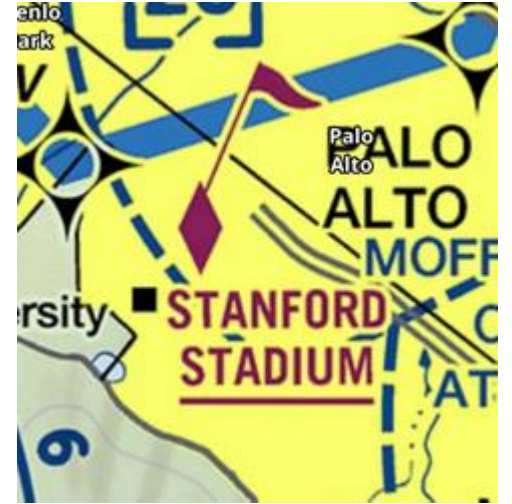
- A. Stadium marker
- B. Obstacle marked by a flag
- C. Large tower
- D. VFR Checkpoint



# Knowledge Check

What is the flag-like symbol at Stanford Stadium?

- A. ~~Stadium marker~~
- B. ~~Obstacle marked by a flag~~
- C. ~~Large tower~~
- D. VFR Checkpoint



# Knowledge Check

How long are sectional chart valid for?

- A. 24 days
- B. 28 days
- C. 56 days
- D. 6 months



# Knowledge Check

How long are sectional chart valid for?

~~A. 24 days~~

~~B. 28 days~~

C. 56 days

~~D. 6 months~~

# Knowledge Check

Where can you find out about an airports type of fuel offered?

- A. VFR Sectional Chart
- B. Terminal Area Chart
- C. Chart Supplement
- D. None of the above

# Knowledge Check

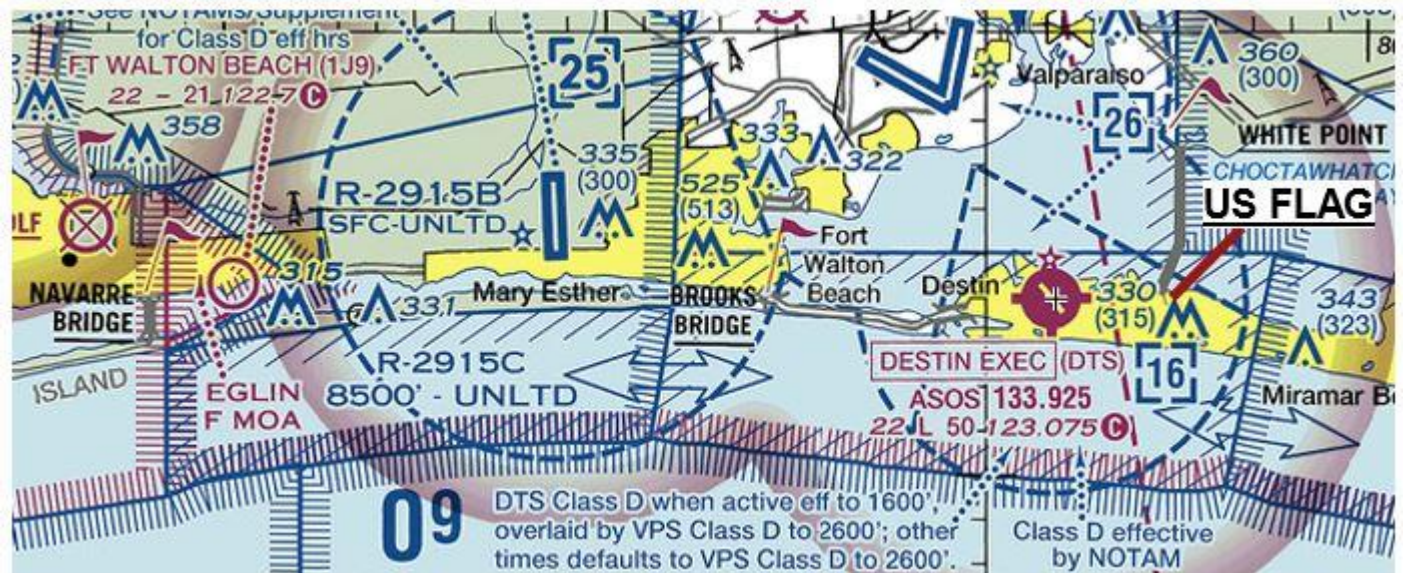
Where can you find out about an airports type of fuel offered?

- A. ~~VFR Sectional Chart~~
- B. ~~Terminal Area Chart~~
- C. **Chart Supplement**
- D. ~~None of the above~~

# Knowledge Check

What's the length of the longest runway at Destin Executive?

- A. 5,000'
- B. 500'
- C. 50'
- D. 2,200'





# Knowledge Check

What's the length of the longest runway at Destin Executive?

- A. 5,000'
- ~~B. 500'~~
- ~~C. 50'~~
- ~~D. 2,200'~~

