Advice

- Use common sense
- When in doubt pick the most conservative answer
- There will likely be some questions that you don’t know
- Study!!
- Use the sectional chart key at the front of the book
- Take your time

** = definitely will be on the test
Basics

- Computerized
- 60 questions in 2 hours
- $150
- Took me about 1.5 hours
Regulations

https://www.faasafety.gov/

Online course

https://3dr.com/faa/study-guides/regulations-cheatsheet/
Crew Roles

- Remote Pilot in Command
  - Holds Remote Pilot Certificate with sUAS rating
  - Responsible for operation and safety of UAS
- Person manipulating controls
  - Controlling UAS under direct supervision of the Remote PIC
- Visual Observer
  - Not necessary but helpful to look for objects
Some rules you should know**

- Cannot fly 30 mins before sunrise or after sunset unless you have anti-collision lights
- No higher than 400 ft (above ground or obstacle) or faster than 100 mph
- 10 days to report an accident
- 90 days to request a Part 107 waiver
- No more than 500 ft below a cloud or 2000 ft adjacent
Some rules you should know cont.**

- Within **24 months** you need to take recurrent training requirements
- sUAS must be <55 pounds NOT <=55 pounds
- Part 107 apply to commercial operations not public
- Owner cannot register UAS if under 13 YOA
- Have to be 16 YO to fall under Part 107 rules
- You must report any deviation of Part 107 to FAA **upon request**
- You don’t have to submit an accident report if the injury didn’t cause an overnight hospital stay
Most effective method for scanning for another aircraft**

- Series of short regularly spaced eye movements to search each 10 degrees sector
Weather - TAFs (future) and METARs (current)**
Aviation Digital Data Service (ADDS)

Output produced by METARs form (2024 UTC 17 December 2015) found at http://www.aviationweather.gov/adds/metars/

KSLE 171956Z 18016G21KT 2SM -RA BR BKN010 OVC021 11/09 A2976 RMK AO2 SLP079 P0004 T01110094

KSLE 171739Z 1718/1818 18017G24KT 6SM -RA BR BKN015
  FM172200 18012G19KT 2SM -RA BKN015
  FM180000 17010KT 5SM -RA BR OVC009
  FM180400 18018G27KT 3SM RA BR OVC019 WS020/19055KT
  FM181100 18014G22KT 6SM -RA OVC019
  FM181200 19013KT 6SM -RA OVC015
#KFN  312215Z AUTO 08005KT
10SM CLR 27/06 A3005 RMK AO1

Things to remember**:

- **Wind** directions are reported in *true heading.* as opposed to magnetic
- **Cloud** heights are reported in hundreds of feet above ground level.**
- A cloud **ceiling** is a **broken or overcast** cloud layer.
- TAFs last for 30 hours and are updated daily 4 times
### Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Front)

**TAF** KPTT 0917Z02Z 0918/1024 15005KT 55M HZ FEW020 W5010/31022KT
FM 091930 300/5G25KT 35SM SHRA OVC015
TEMPO 0920 0922 1/2SM =TSRA OVC008CB
FM 101019 27000KT 35SM SHRA BKN020 OVC040
PROB 0804 1007 1SM +RA BBR
FM 101015 18000KT 35SM SHRA OVC020
BECMG 1013/1015 35SM -SN 200SM SFC

**NOTE:** Users are cautioned to confirm DATE and TIME of the TAF. For example FM100000 is 000Z on the 10th. Do not confuse with 1000Z!

**METAR** KPTT 091955Z C0R 22015G25KT 3/4SM R28L/26000FT TSRA OVC010CB 18/16 A2992 RMK

<table>
<thead>
<tr>
<th>Forecast</th>
<th>Explanation</th>
<th>Report</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TAF</strong></td>
<td>Message type: TAF—routine or TAF AMD—amended forecast, METAR—hourly, SPECI—special or TSST—non-commissioned ASOS report.</td>
<td>METAR</td>
</tr>
<tr>
<td><strong>KPTT</strong></td>
<td>ICAO beacon indicator</td>
<td>KPTT</td>
</tr>
<tr>
<td>091730Z</td>
<td>Issuance time: ALL times in UTC “Z”, 2-digit date, 4-digit time</td>
<td>091955Z</td>
</tr>
<tr>
<td>0918/1024</td>
<td>Valid period, either 24 hours or 30 hours. The first two digits of EACH four digit number indicate the date of the valid period, the final two digits indicate the time (valid from 18Z on the 9th to 24Z on the 10th).</td>
<td></td>
</tr>
</tbody>
</table>

In U.S. METAR: CORected of; or AUTOMATIC is for automated report with no human intervention; omitted when observer logs on. |
| 15005KT | Wind: 3 digit true north direction, nearest 5 degrees (or Valid 000); next 2-3 digits for speed and unit, KT (KMPH or MPS), as needed, Gust and maximum speed; 00000KT for calm; for METAR, if direction varies 60 degrees or more, Variability appended, e.g., 15025G260 | 22015G25KT |
| SSM | Prevailing visibility, in U.S. Statute Miles & fractions; above 6 miles in TAF Plus65M, (Or-4-digit minimum visibility in meters as required, lowest value with direction) | 3/4SM |
| HZ | Significant present, forecast and recent weather: see table (on back) | TSRA |
| FEW020 | Cloud amount, height and type: SKY Clear 0/8; FEW 0-8/2-8; SC/1-10/4-8; BKN 5-7/3-8; OVC/8-10/0-8; 3-digit height in hundreds of ft; Towering Clouds or Cumulonimbus in METAR, in TAF, only CB, Vertical Visibility for obscured sky and height "VV064". More than 1 layer may be reported or forecast. In automated METAR reports only, CLEAR for "clear below 12,000 feet" | OVC 010CB |
| | Temperature: degrees Celsius; first 2 digits, temperature "C"; last 2 digits, dew-point temperature; Minus for below zero; e.g., 05/21 | 18/16 |
| | Altimeter setting: indicator and 4 digits; in U.S., 4-inches and hundredths; (Q-berths in Pascal, e.g., 1013) | A2992 |
| W5010/31022KT | In U.S. TAF, non-convective low-level (52,000 ft) Wind Shear: 3-digit height (hundreds of ft); "S", 3-digit wind direction and 2-3 digit wind speed above the indicated height, and units, KT | |
Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Back)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM001930</td>
<td>FroSL: changes are expected at 2-digit date, 2-digit hour, and 2-digit minute beginning time. Indicates significant change. Each FM starts on a new line, indented 5 spaces.</td>
</tr>
<tr>
<td>TEMPO 0920/0922</td>
<td>TEMPCHE: changes expected for &lt;1 hour and in total, &lt; half of the period between the 2-digit date and 2-digit hour beginning, and 2-digit date and 2-digit hour ending time.</td>
</tr>
<tr>
<td>PROH30 1004/1007</td>
<td>PROHL: and 2-digit percent (30 or 40): probable condition in the period between the 2-digit date &amp; 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time.</td>
</tr>
<tr>
<td>BECMG 1013/1015</td>
<td>BECMG: change expected in the period between the 2-digit date and 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time.</td>
</tr>
</tbody>
</table>

Table of Significant Present, Forecast and Recent Weather - Grouped in categories and used in the order listed below, or as needed in TAF. No Significant Weather.

**Qualifiers**

<table>
<thead>
<tr>
<th>Intensity or Proximity</th>
<th><strong>Light</strong></th>
<th><strong>Moderate</strong></th>
<th><strong>Heavy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;m&quot;</td>
<td>&quot;m&quot;</td>
<td>&quot;m&quot;</td>
<td>&quot;m&quot;</td>
</tr>
<tr>
<td>&quot;vC&quot;</td>
<td>&quot;vC&quot;</td>
<td>&quot;vC&quot;</td>
<td>&quot;vC&quot;</td>
</tr>
</tbody>
</table>

- "vC" = Vicinity, but not at aerodrome. In the US METAR, 5 to 10 SM from the point of observation. In the US TAF, 5 to 10 SM from the center of the runway complex. Elsewhere, within 8000m.

**Descriptor**

<table>
<thead>
<tr>
<th>BC</th>
<th>BLS</th>
<th>DR</th>
<th>FZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patches</td>
<td>Blowing</td>
<td>Drifting</td>
<td>Freezing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ML</th>
<th>PR</th>
<th>SH</th>
<th>TS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shallow</td>
<td>Partial</td>
<td>Showers</td>
<td>Thunderstorm</td>
</tr>
</tbody>
</table>

**Weather Phenomena**

**Precipitation**

<table>
<thead>
<tr>
<th>DZ</th>
<th>GR</th>
<th>GS</th>
<th>IC</th>
<th>PL</th>
<th>RA</th>
<th>SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drizzle</td>
<td>Hail</td>
<td>Small Hail/Snow Pellets</td>
<td>Ice Crystals</td>
<td>Ice Pellets</td>
<td>Rain</td>
<td>Snow Grains</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SN</th>
<th>UP</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Snow</td>
<td>Unknown Precipitation in automated observations</td>
<td></td>
</tr>
</tbody>
</table>

**Obscuration**

<table>
<thead>
<tr>
<th>BR</th>
<th>DU</th>
<th>FG</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mist (&lt;5/8SM)</td>
<td>Widespread Dust</td>
<td>Fog (&lt;5/8SM)</td>
<td>Smoke</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HZ</th>
<th>PY</th>
<th>SA</th>
<th>VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haze</td>
<td>Spray</td>
<td>Sand</td>
<td>Volcanic Ash</td>
</tr>
</tbody>
</table>

**Other**

<table>
<thead>
<tr>
<th>DS</th>
<th>FC</th>
<th>FO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust Storm</td>
<td>Funnel Cloud</td>
<td>Well developed dust or sand whirls</td>
</tr>
</tbody>
</table>

- Explanations in parentheses (")" indicate different worldwide practices.
- Ceiling is not specified, defined as the lowest broken or overcast layer, or the vertical visibility.
- NWS TAFS exclude BECMG groups and temperature forecasts. NWS TAFs do not use PROB in the first 9 hours of a TAF. NWS METARs exclude trend forecasts. US Military TAFs exclude Turbulence and icing groups.
Other weather sources:

Doppler radar, ASOS (automated)
4 Types of Aviation Weather Services

- Surface (METARs, ASOS, AWOSS, ARTCCs)
- Upper Air
- Radar
- Satellite

https://www.aviationweather.gov/

Types of Briefings

Standard, Abbreviated and Outlook
Standard Briefing - The most exhaustive**

1800-WX-brief.com

1) Adverse conditions
2) VFR not recommended
3) Synopsis, fronts and major weather systems affecting the area
4) Current conditions
5) Enroute forecast
6) Destination forecast
7) Winds and Temps
8) NOTAMs
9) ATC delats
10) Other
Outlook briefing

- When a planned departure is >6 hrs away
Weather theory
stuff
Four types of boundaries btwn 2 air masses**

1) Warm fronts
2) Cold fronts
3) Stationary fronts
4) Occluded fronts
3 Stages of a Thunderstorm**

1) **Cumulus**
   a) Continuous updrafts

2) **Mature**
   a) Both updrafts and downdrafts
   b) Indicated by start in precipitation

3) **Dissipating**
   a) Downdrafts
Thunderstorms Cont.**

- Thunderstorms produce wind shear turbulence
- **Squall line** - narrow band of storms ahead of a cold front
- Should avoid a T-storm by 20 nm
Frost

- Is the direct sublimation of water vapor into ice crystals
Radiation Fog (Shallow Fog)

- Occurs in a clear sky, little or no wind and a small temp/dew point spread
To calculate the base of a cloud

- Divide the temp/dew difference by 4.4 F and multiply by 1000
Lapse rate

- Decrease in temp with increase in altitude
- The higher the lapse rate the more unstable
Temperature Inversions**

- Result in a stable layer of air
- Caused by terrestrial radiation
- Develops on the ground and cool nights when wind is light
- Smooth air with limited visibility below
Lenticular clouds

- May contain winds of 50 kt or more
Density Altitude Stuff**

- Flying in dense air is ideal.
- Density Altitude is a measure of air density.
- **In standard conditions, true altitude (above sea level) = density altitude.**
- In standard atmospheric conditions (ISA), the density altitude at the beach in San Diego (sea level) is 0 feet, while the density altitude in Denver is 5500 feet.
Density Altitude Stuff Cont.**

- However, **if temperature increases, humidity increases or air pressure decreases from standard, the density altitude goes up** (the air becomes less dense).
- **Hot + Humid + Low Pressure = High Density altitude**
- For example on a hot summer day in Denver, with high humidity and a temperature over 100° F, the density altitude would be over 10,000 feet even though the true altitude of 5500 feet is unchanged. The aircraft "feels" as if it was at 10,000 feet and its performance will be decreased.
High density altitude means low density, high temperature, high humidity, low pressure.
Convective Currents

- Cause turbulence
- Caused by uneven heating of air
- Updrafts produced by: plowed ground, rocks, sand and barrenland
  - Give off heat
- Downdrafts produced by: vegetation and water
  - Retain heat
- Particularly noticeable where an ocean is nearby
Stable air vs. Unstable air**

- **Stable air characteristics**
  - Stratiform clouds and fog
  - Smooth air
  - Continuous (steady) precipitation
  - Fair-to-poor visibility in haze and smoke

- **Unstable air characteristics**
  - Cumuliform clouds
  - Turbulent air
  - Showery precipitation
  - Good visibility
High vs. Low pressure systems**

High pressure

- Moves clockwise
- Dry stable descending air
- Good weather

Low pressure moves counterclockwise

- Counterclockwise
- Unstable, increase cloudyness, precip
Loading/Performance
FIGURE 3

ANGLE OF ATTACK

DIRECTION OF RELATIVE WIND

Figure 5.—Angle of attack is the angle between the relative wind line and the chord line.

Lift

Drag

Resultant Force

Center of Pressure

Chord Line

Angle of Attack

Relative Wind
Critical angle of attack**

- Angle between relative windline and chord line
- Faster the airplane and higher the angle of attack the more lift occurs
- After critical angle of attached is reached lift decreases and stall occurs
- Design of wing can also affect the amount of lift that can occur
  - Plan form (shape of wing when viewed from above)
  - Camber (curvature / how symmetrical)
  - Aspect Ratio (width to length)
    - Higher ratio more efficient lift is
  - Total wing surface area
Lift is limited by

- Airfoil design
- Angle of attack
- Air speed
- Air density
When airplane is in flight it is affected by 4 forces:

1) Lift
2) Weight
3) Thrust
4) Drag
High G-Load Maneuvers

- Turns, stalls, spins
- High speed stalls
- Chandells
- Lazy 8
- Rough air
### Load Factor Chart

<table>
<thead>
<tr>
<th>Angle of bank $\phi$</th>
<th>Load factor $n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>1.0</td>
</tr>
<tr>
<td>10°</td>
<td>1.015</td>
</tr>
<tr>
<td>30°</td>
<td>1.154</td>
</tr>
<tr>
<td>45°</td>
<td>1.414</td>
</tr>
<tr>
<td>60°</td>
<td>2.000</td>
</tr>
<tr>
<td>70°</td>
<td>2.923</td>
</tr>
<tr>
<td>80°</td>
<td>5.747</td>
</tr>
<tr>
<td>85°</td>
<td>11.473</td>
</tr>
<tr>
<td>90°</td>
<td>$\infty$</td>
</tr>
</tbody>
</table>

**Figure 2.**—Load Factor Chart.
Operations: Airport procedures
What is the CTAF for?

Airports without control tower
Types of airports
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 within hard-surfaced runway configuration indicates approximate VOR, VOR-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**

- **R** Private "(Pvt)" - Non-public use having emergency or landmark value
- **H** Heliport Selected
- **U** Unverified
- **A** Abandoned - paved having landmark value, 3000 ft. or greater
- **F** Ultralight Flight Park Selected

Fuel - available Mon thru Fri 10:00 A.M. to 4:00 P.M. depicted by use of ticks around basic airport symbol. Consult Supplement for details and for 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 Special Air Traffic Rules & Airport Traffic Patterns.**
- **CT - 118.3** Control Tower (CT) - primary frequency
- **ATIS 123.8** Automatic Terminal Information Service
- **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

**Unobstructed** - VFR Advisory Service shown where full-time ATIS not available and frequency is other than primary CT frequency.

- **285** 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.
Most comprehensive info on an airport comes from:

- A/FD airport/facility directory
- While the most current comes from NOTAMs
Runway stuff
Runway Stuff Cont.
Runway Stuff Cont.
Runway Stuff Cont.
Runway Stuff Cont.

14R
14L
32R
32L
Standard traffic patterns are left hand turns at 1000 ft unless otherwise stated.
Sample Question

While monitoring the Cooperstown CTAF you hear an aircraft announce that they are midfield left downwind to RWY 13.

Where would the aircraft be relative to the runway?

A. The aircraft is East.
B. The aircraft is South.
C. The aircraft is West.
Sample Question

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Where would the aircraft be relative to the runway?

A. The aircraft is East.

B. The aircraft is South.

C. The aircraft is West
Answer is A, to the east
Sending a message to ATC**

1) Who are you talking to
2) Who are you
3) Where are you (AGL)
4) What are you doing?
Aeronautical Decision Making
Risk checklist - PAVE

- Pilot-in-command
- Aircraft
- EnVironment
- External
Stress Management

- Environmental
- Physiological
- Psychological
Crew Resource Management**

- Effective use of all available resources, human, hardware and information
- Improve decision making
- Useful prior and during flight
SRM is Single Resource Management (5 Ps checklist)

The Plan

The Plane

The Pilot

The Passenger

The Programming
Steps for decision making

1) Learning behavior mod techniques
2) Learning how to recognize and cope with stress
3) Developing risk assessment skills
4) Using all resources
5) Evaluating effectiveness of one ADM skills
OODA Loop

Observe -> Act -> Decide -> Orient
Pilot’s assessment of hazard is RISK**

5 hazardous attitudes:

1) Anti-authority
   a) “Don’t tell me”

2) Impulsivity
   a) “Do it quickly”

3) Invulnerability
   a) “It won’t happen to me”

4) Macho
   a) “I can do it”

5) Resignation
   a) “What’s the use?”
IMSAFE

I - Illness
M - Medication
S - Stress
A - Alcohol
F - Fatigue
E - Emotion
Sectional Charts

https://cessnachick.com/525-2/
https://skyvector.com/
Main components:

- Identifying type of airspace
- Identifying height of airspace and obstacles (both MSL and ASL)
- Locating airports and obstacles Lat and Long
- Questions like: “If you are flying as high as you are allowed to under Part 107 over the tower located at some Lat and Long, what airspace are you in?”
Airspace Basics
Class G is unrestricted

Class A, B, C, D, E you must obtain permission from Air Traffic Control (ATC) **BEFORE** flying.

A - Altitude

B - Big

C - Crowded

D - Dialogue

E - Elsewhere that is controlled

G - Go for it! (uncontrolled)
## Classes of Airspace

<table>
<thead>
<tr>
<th>Airspace</th>
<th>Think</th>
<th>Airport Traffic Control Permission</th>
<th>Symbol on a map (Don't forget there's a legend in your supplemental material!)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>High Up</td>
<td>Prohibited</td>
<td>Not shown (Over 18,000 feet)</td>
</tr>
<tr>
<td>Class B</td>
<td>Biggest Airports</td>
<td>Yes (Check for altitude notation)</td>
<td>Solid Blue Line</td>
</tr>
<tr>
<td>Class C</td>
<td>Large Airports</td>
<td>Yes (Check for altitude notation)</td>
<td>Solid Magenta Line</td>
</tr>
<tr>
<td>Class D</td>
<td>Medium Airport</td>
<td>Yes (Always starts at the surface)</td>
<td>Dashed Blue Line</td>
</tr>
<tr>
<td>Class E with an airport</td>
<td>Small Airport</td>
<td>Yes (Check for altitude symbol)</td>
<td>Dashed Magenta Line</td>
</tr>
<tr>
<td>Class E without an airport</td>
<td>Almost everywhere but at the surface</td>
<td>No</td>
<td>Gradient Blue or Magenta Line</td>
</tr>
<tr>
<td>Class G</td>
<td>Good to Go!</td>
<td>No (ATC doesn't exist!)</td>
<td>Everywhere else.</td>
</tr>
</tbody>
</table>
# Special Use Airspace (SUA)

<table>
<thead>
<tr>
<th>Type</th>
<th>Legend</th>
<th>Flight Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prohibited</td>
<td>Blue hatched line with name starting with P. Ex. P-49</td>
<td>No</td>
</tr>
<tr>
<td>Restricted</td>
<td>Blue hatched line with name starting with R Ex. R-2079</td>
<td>If active (&quot;hot&quot;), no unless with explicit permission, check legend. If inactive (&quot;cold&quot;), flight is allowed.</td>
</tr>
<tr>
<td>National Security Areas</td>
<td>Purple box with callout</td>
<td>Technically yes, but that is poor judgement.</td>
</tr>
<tr>
<td>Warning areas, Military</td>
<td>Magenta hatched line with name (Alert, MOA) except Warning Area: Blue</td>
<td>Yes, with caution.</td>
</tr>
<tr>
<td>operating areas (MOAs) and</td>
<td>hatched line</td>
<td></td>
</tr>
<tr>
<td>Alert areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military Training Routes</td>
<td>Gray line with name. Below and above 1,500 ft: IR1206, VR1207 Below</td>
<td>Yes, with caution, get a brief @ 1800wxbrief.com or by calling 1800-WX-Brief</td>
</tr>
<tr>
<td>(MTR)</td>
<td>1,500 ft only: IR206, VR207</td>
<td></td>
</tr>
<tr>
<td>ADIZ - Air Defense</td>
<td>Line with dots (border regions)</td>
<td>No</td>
</tr>
<tr>
<td>Identification Zones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary Flight Restrictions</td>
<td>Not on charts! Places with: sporting events Aerial fire fighting air shows rocket launches Presidential movements</td>
<td>No. Check at tfr.faa.gov, 1800wxbrief.com or by calling 1800-WX-Brief</td>
</tr>
</tbody>
</table>

Class A

- For only airplanes with Instrument Flight Rules (IFR)
- 18,000 MSL to 600,000 MSL
- Overwater within 12 Nm of the US
Class D - Controlled

- Always from surface
- Dashed blue
- [-26] would mean up to not including where as [26] means up to and including
Class C - Controlled

- 2 shelves, 5 nm and 10 nm from airport
- Solid magenta
Class B - lots of shelves, looks like upside down wedding cake, solid blue
Class E - shaded magenta and blue

- Magenta vignette denotes starting at 700 ft AGL
- Blue vignette denotes starting at 1200 ft AGL
- Dashed magenta indicates it’s near an airport
- Is controlled but only need permission from ATC if near an airport
- Class E takes over when the Class D Tower is closed.
Restricted

- Blue: General
- Magenta: MOA (military)
MTRs
(Military Training Routes)

- w/ 4#s - doesn’t include greater than 1500 ft AGL
- w/ 3#s - they do
Obstacles

- MSL - mean sea level (AGL) - above ground level
Now let’s go over some sample questions together:

https://3dr.com/faa/drone-practice-tests/
Now what

- Sign up - call: 800-947-4228 (CATS)
- Take 3DR practice test and look at 3DR study guide

https://3dr.com/faa/drone-practice-tests/

- Watch Youtube videos if you are still confused on the material
Some Youtube Videos (There are many more available)

https://www.youtube.com/watch?v=de1JxnfzZNA&list=PLVRVuxlBc2AFJwkB-GoiXrAObY9IPAM4q&index=20
https://www.youtube.com/watch?v=ovlVhBFa6yY&list=PLVRVuxlBc2AFJwkB-GoiXrAObY9IPAM4q&index=24
https://www.youtube.com/watch?v=v2HNTMJMtZg&list=PLVRVuxlBc2AFJwkB-GoiXrAObY9IPAM4q&index=25
https://www.youtube.com/watch?v=93e5k8122qo
https://www.youtube.com/watch?v=ObNZr26Yz48
https://www.youtube.com/watch?v=QkSXec0aEb0
https://www.youtube.com/watch?v=qH4KR_T98Nk
https://www.youtube.com/watch?v=80mGHI_gFo
https://www.youtube.com/watch?v=6ITjUfl80bs
What to bring

● Valid ID
● Calculator (the simple kind!)
● They will provide you with pencil and paper