

List of Key Terms

1: Aviation Basics

International Civil Aviation Organization (ICAO)



Federal Aviation Administration (FAA)



License



Temporary License



Airplane Flight Manual



Helicopter



Major Airline



High Performance Airplane



Regional Airline



Corporate Flying



2: Aircraft Components

Fuselage



Flaps



Wings



Empennage



Ailerons

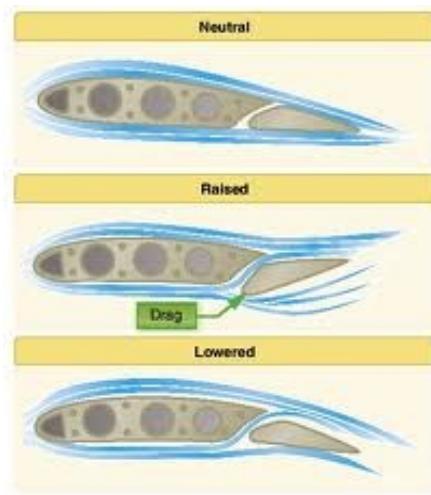


Figure 5-7. Frise-type ailerons.

Stabilizers

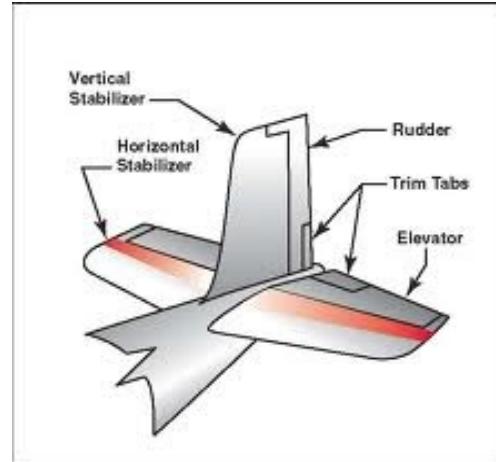
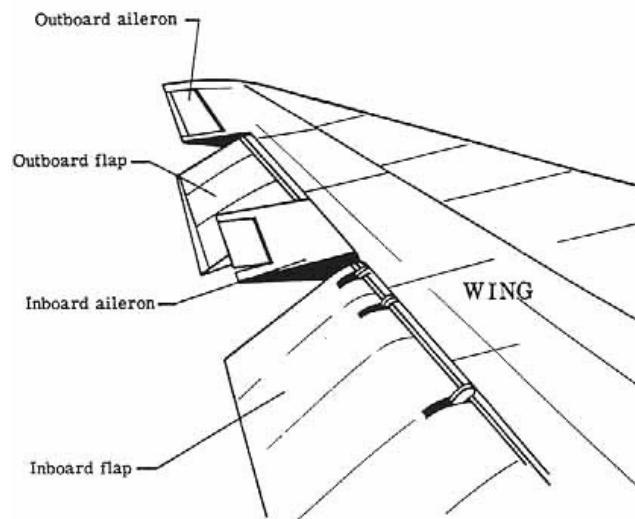


Figure 1-7. Empennage components.

Flight Controls



Main Wheels



Conventional Landing Gear



Nosewheel



Tricycle Gear



Fixed Gear



Retractable Gear



Engine



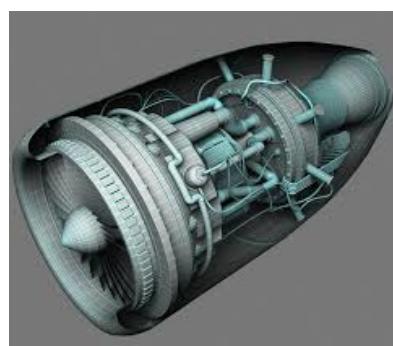
Propeller



Firewall



Turbine Engine



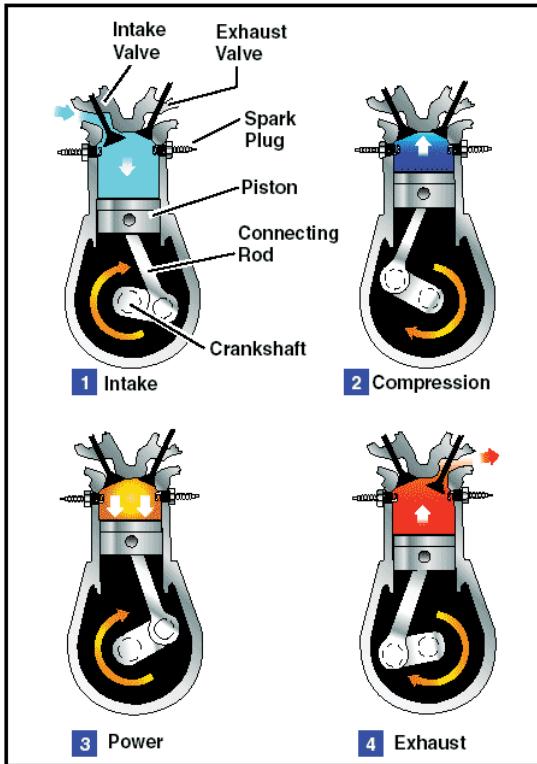
Engine Radial



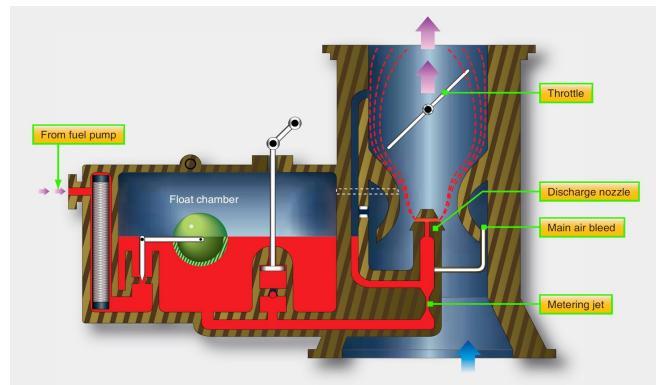
Reciprocating Engine



Four-Stroke Operating Cycle



Carburetor



Carburetor Ice

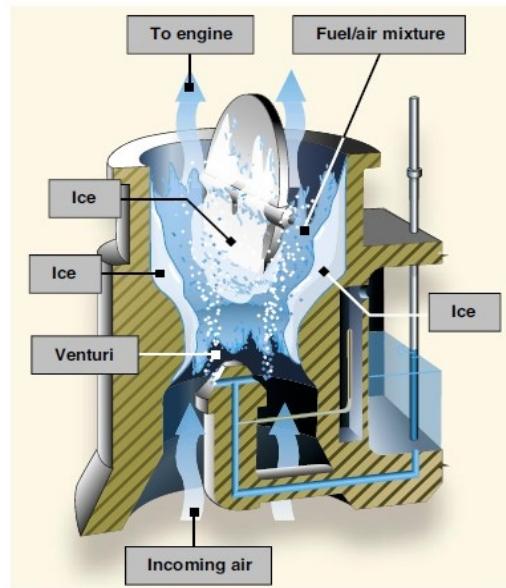
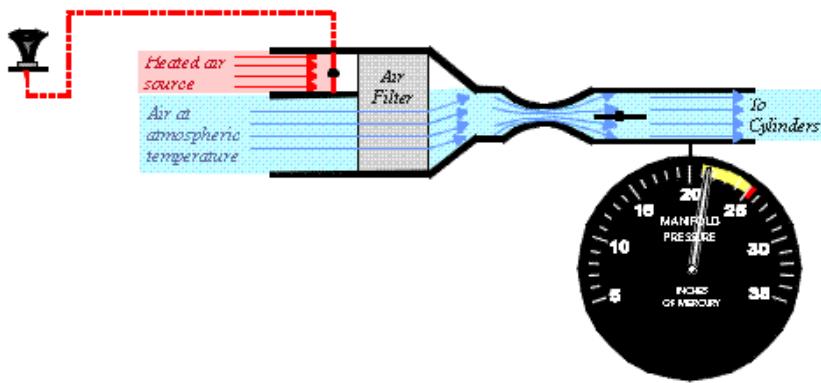


Figure 6-11. The formation of carburetor ice may reduce or block fuel/air flow to the engine.

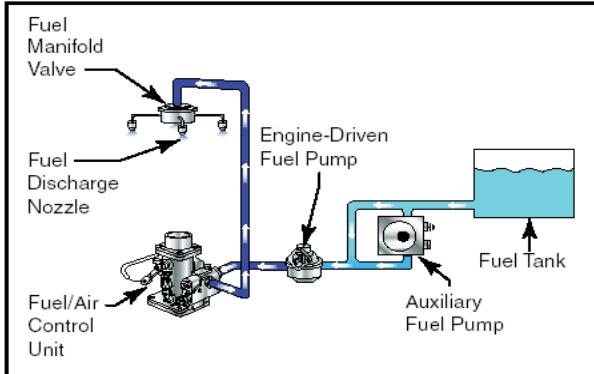
Power Quadrant



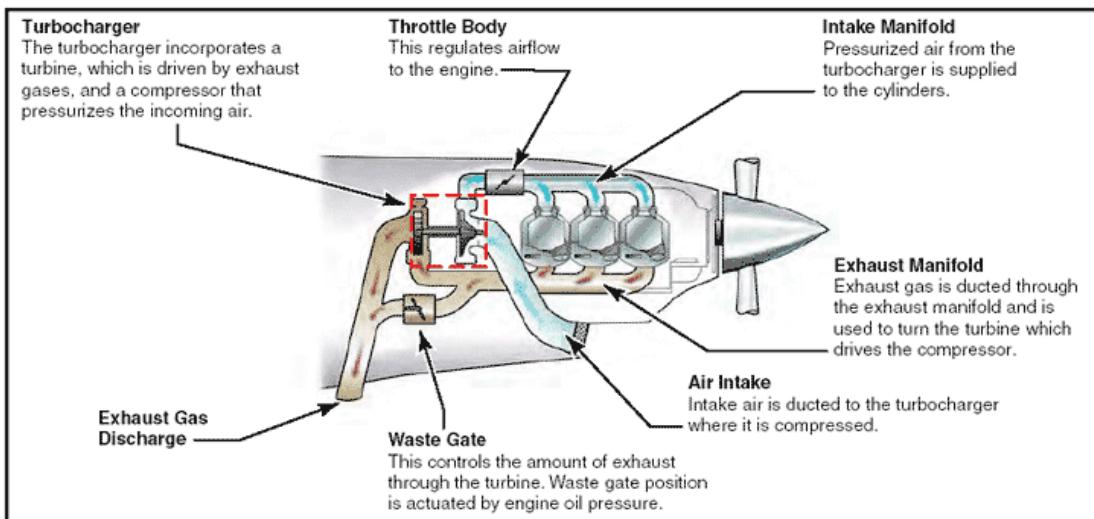
Carburetor Heat



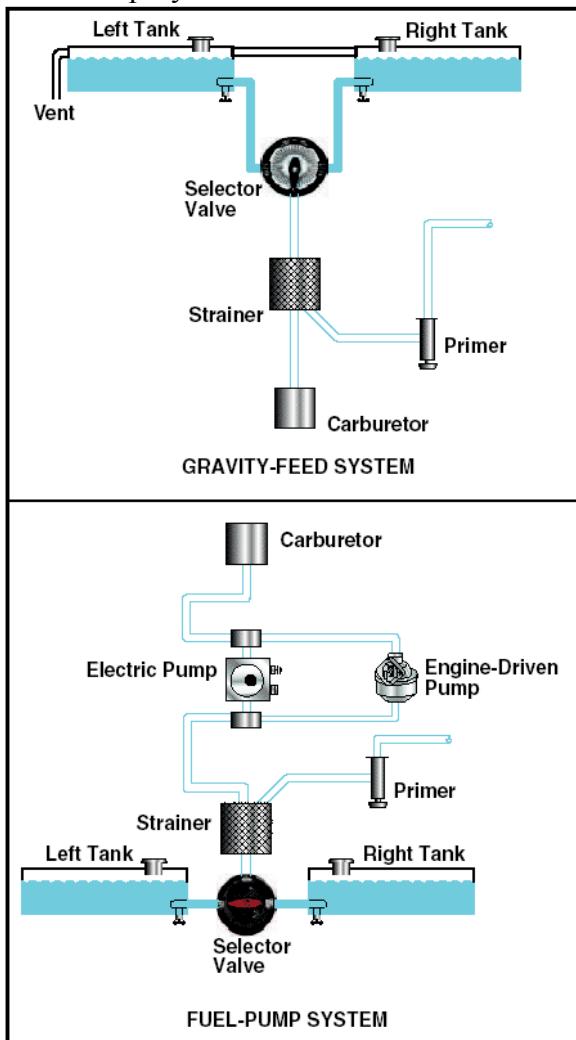
Fuel Injection



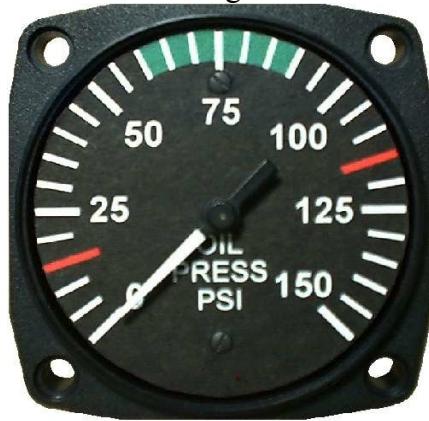
Turbocharger



Fuel-Pump System



Oil Pressure Gauge



Oil Temperature Gauge



AircraftSpruce.com
PN 3070-62

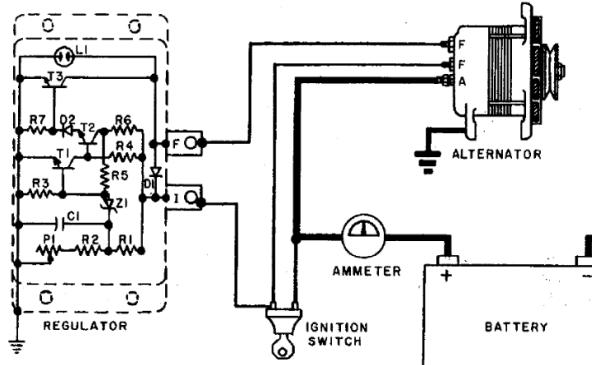
Cylinder Head Temperature Gauge



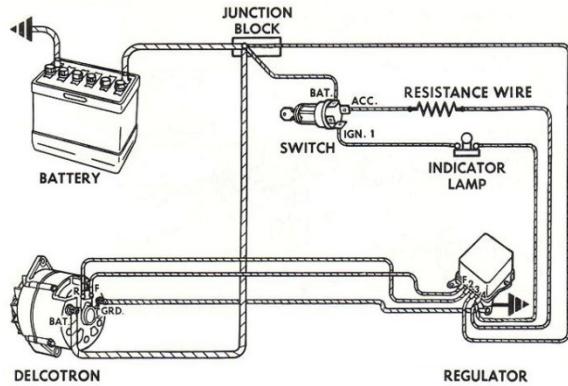
Fuel Pressure Gauge



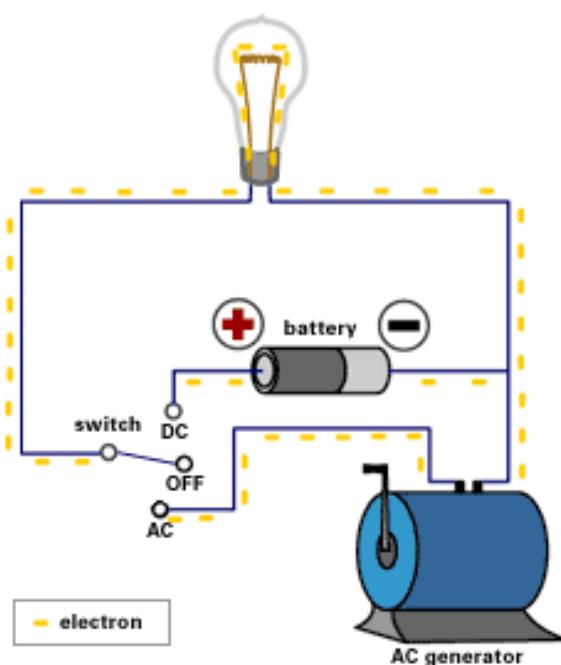
Alternator



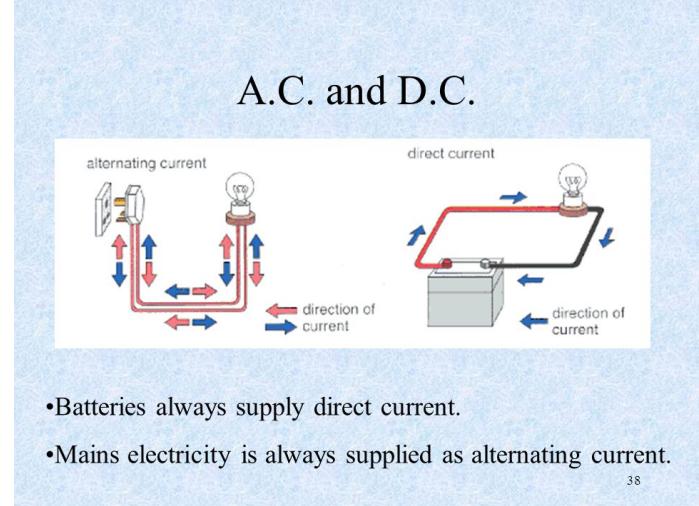
Delcotron



Alternating Current (AC)



Direct Current (DC)



Battery



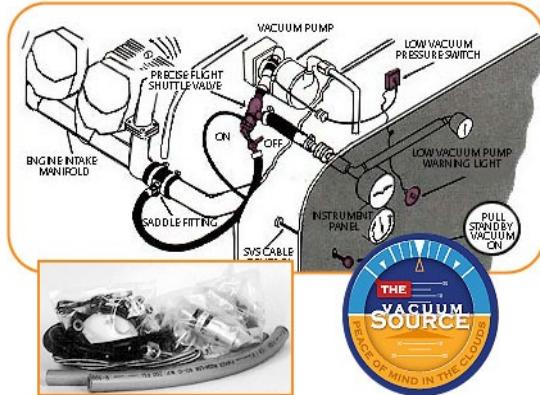
Fuse Panel



Pitot Tube



Vacuum System



Static Port



Vertical Speed Indicator



Altimeter



Airspeed Indicator



Turn Coordinator



Coordinated Turn

Heading Indicator



Altitude Indicator



Radios

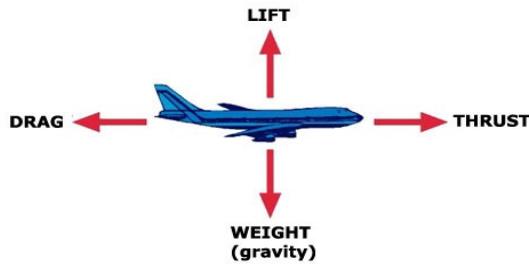


Transponder

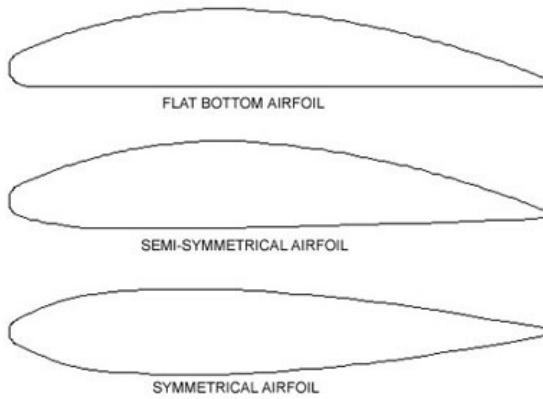


3: Performance Principles

Aerodynamic Forces

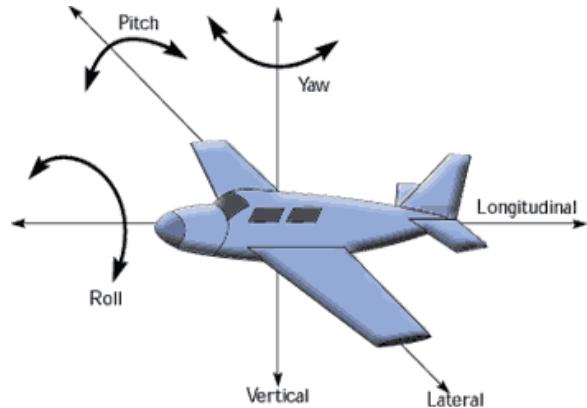


Airfoil

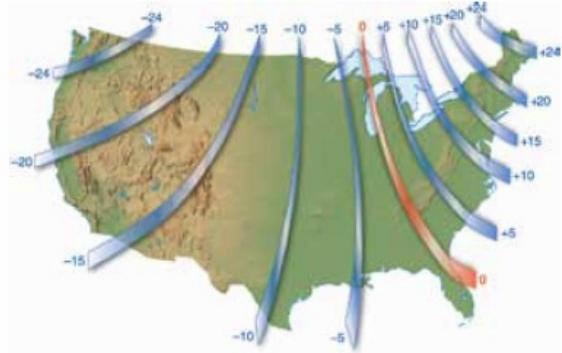


Control Axes

(Vertical, Horizontal, & Longitudinal Axes)



Magnetic Variation



Ground Effect



Figure 4-13. Ground effect changes airflow.

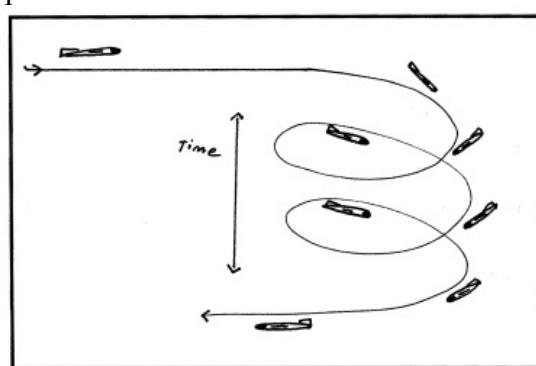
Wingtip Vortices



Power-On Stall



Spin



Accelerated Stall

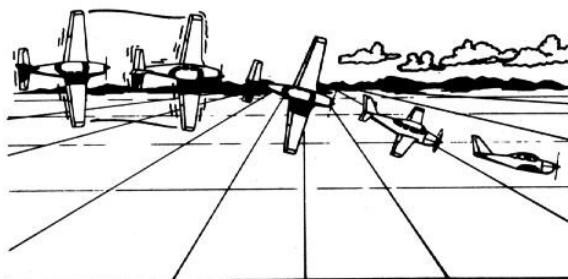
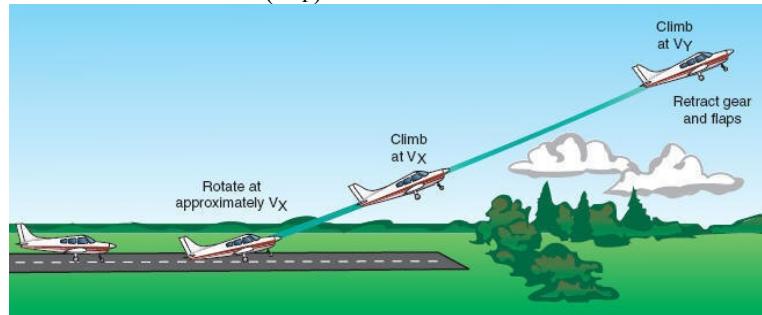
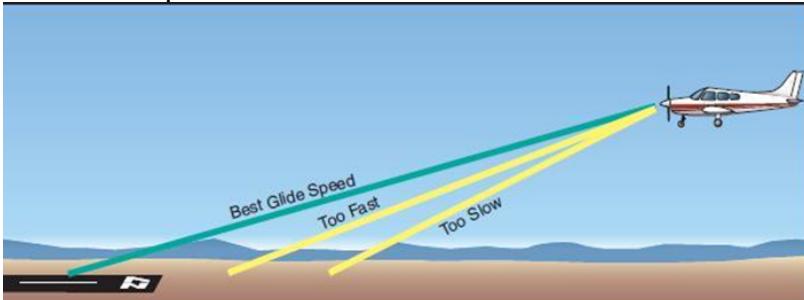


Figure 11-24 Accelerated (High Speed) Stall

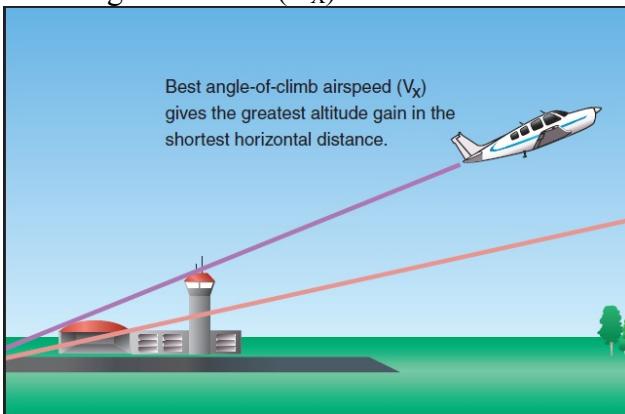
Best Rate of Climb (V_Y)



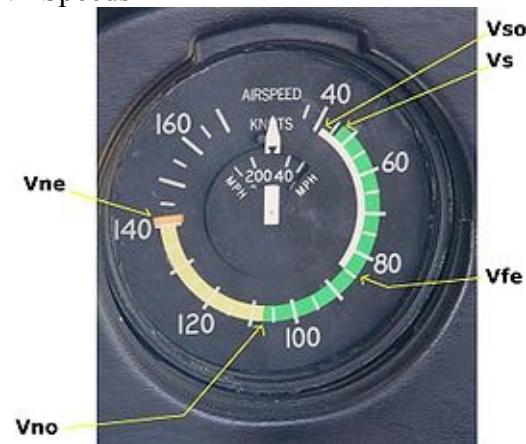
Best Glide Speed



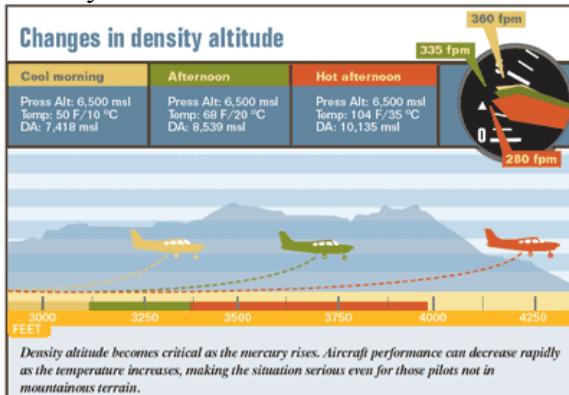
Best Angle of Climb (V_X)



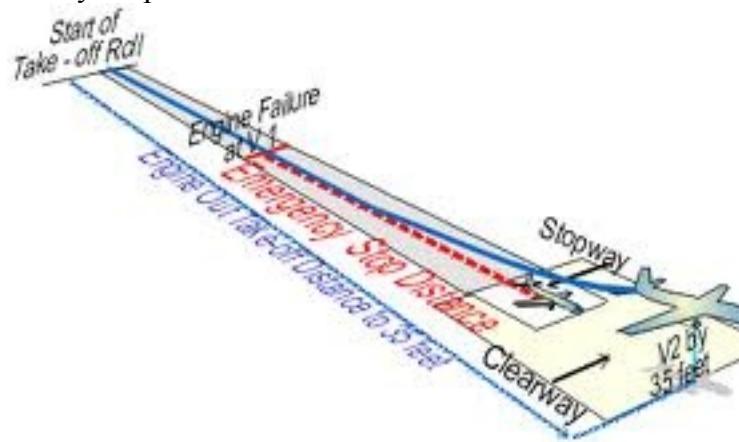
V- Speeds



Density Altitude



Runway Slope



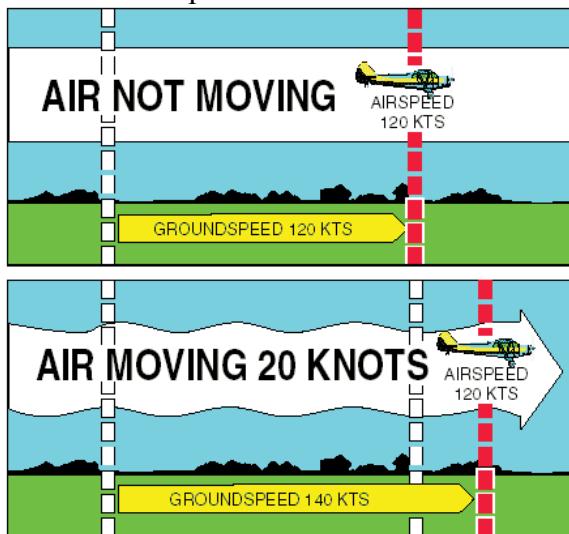
Crosswind Component



Hydroplaning



Tailwind Component



Accident



Incident



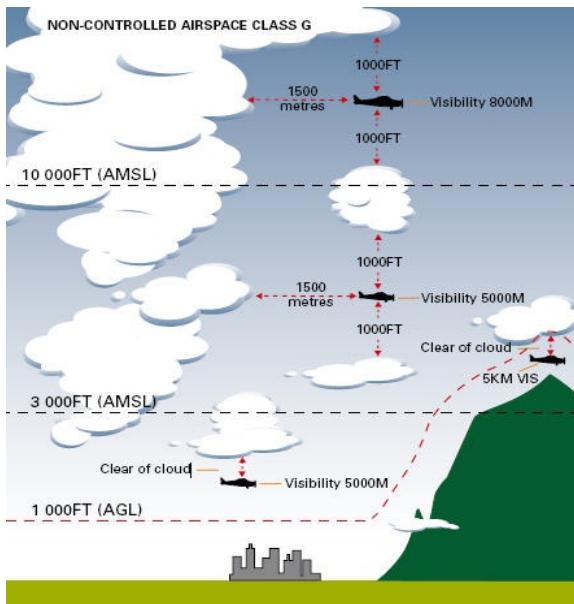
VFR Cruising Altitudes

4: Air Traffic Standards

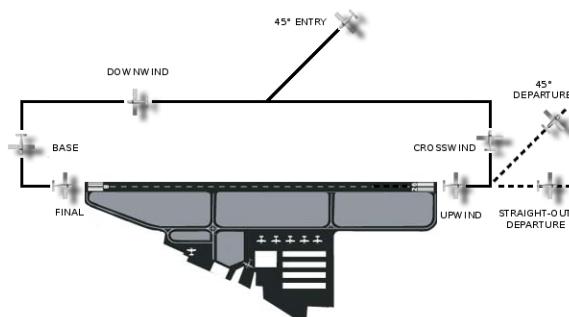
Collision Avoidance



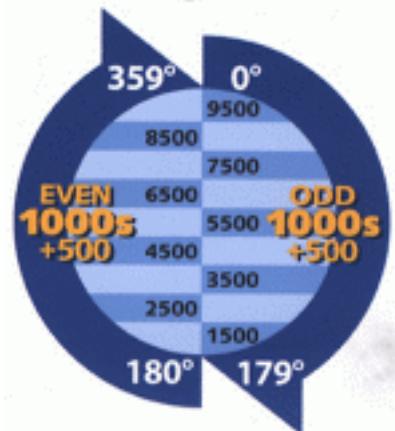
VFR Minimums



Traffic Pattern



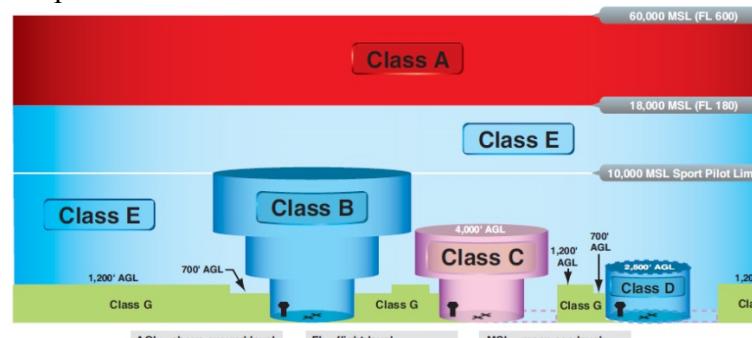
Cruising Altitude



Controlled Airport



Airspace

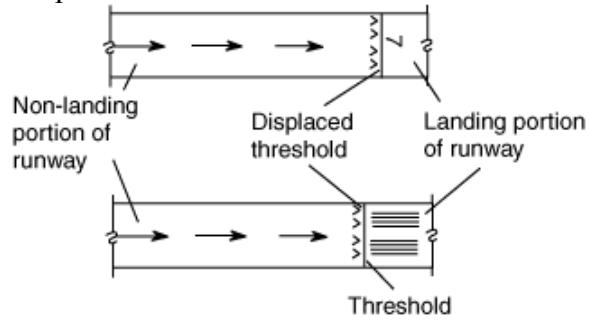


5: Airport Environment

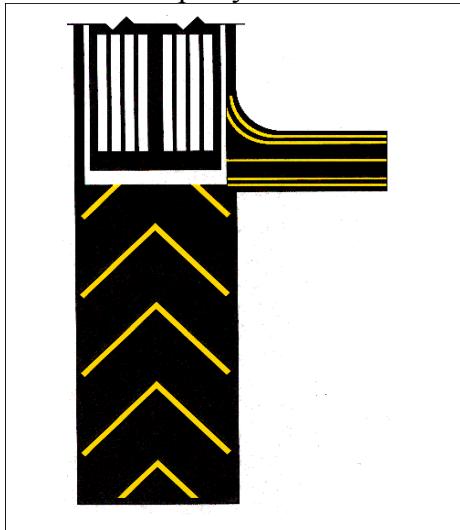
Runways



Displaced Threshold



Blast Pad/Stopway Area



Taxiways



Hold Lines



Airport Beacons

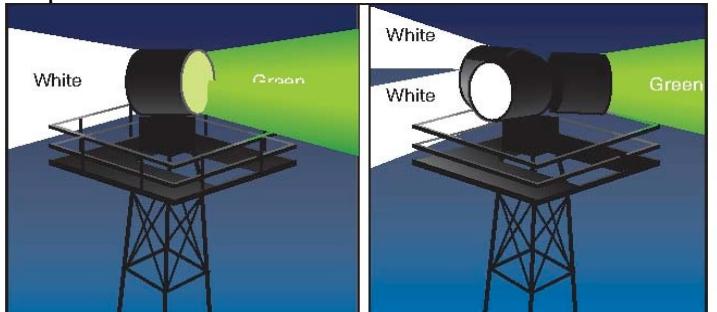


Figure 12-5. Airport rotating beacons.

Visual Approach Slope Indicator (VASI)

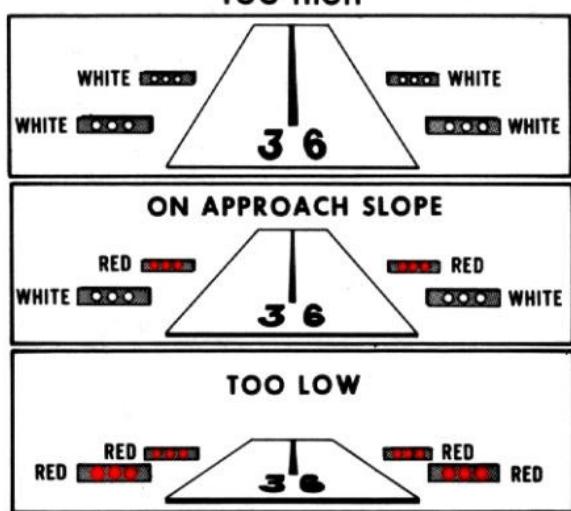
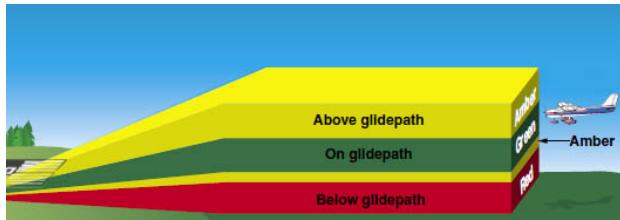
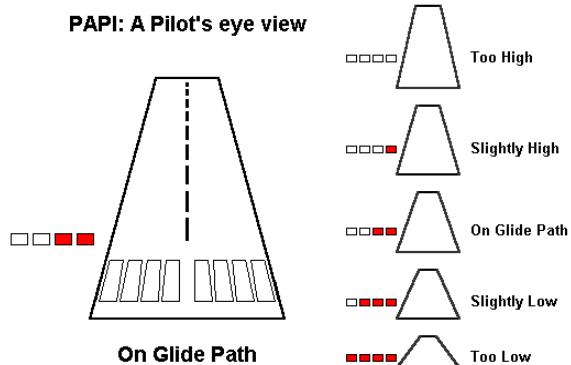


Figure 7-9 Using VASI on Landing Approach

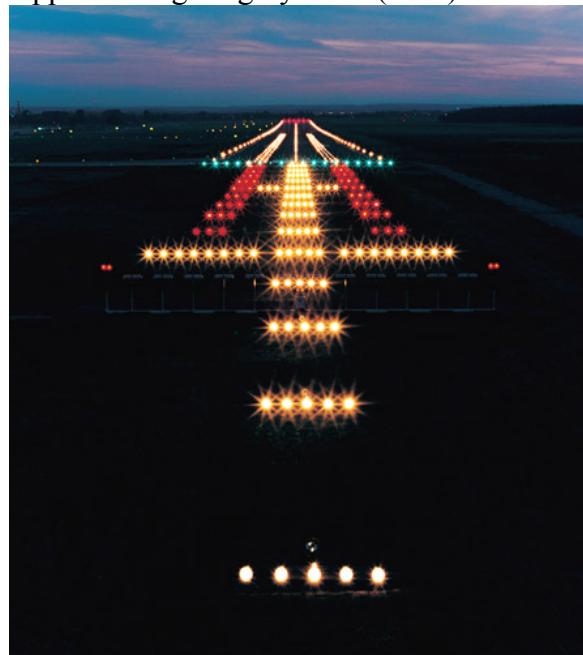
Tri-Color VASI



Precision Approach Path Indicator (PAPI)



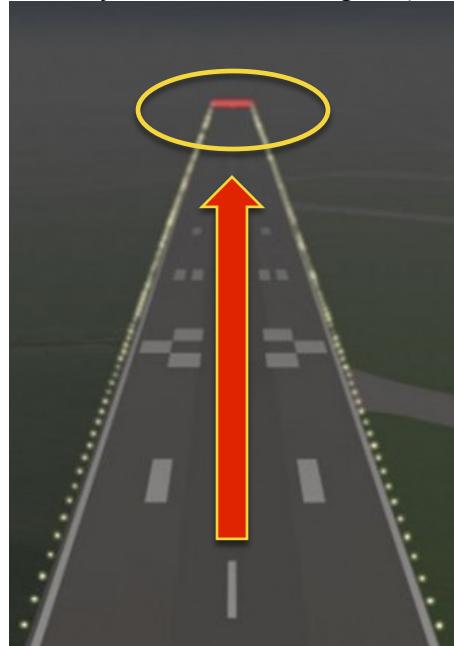
Approach Lighting Systems (ALS)



Runway Edge Lights

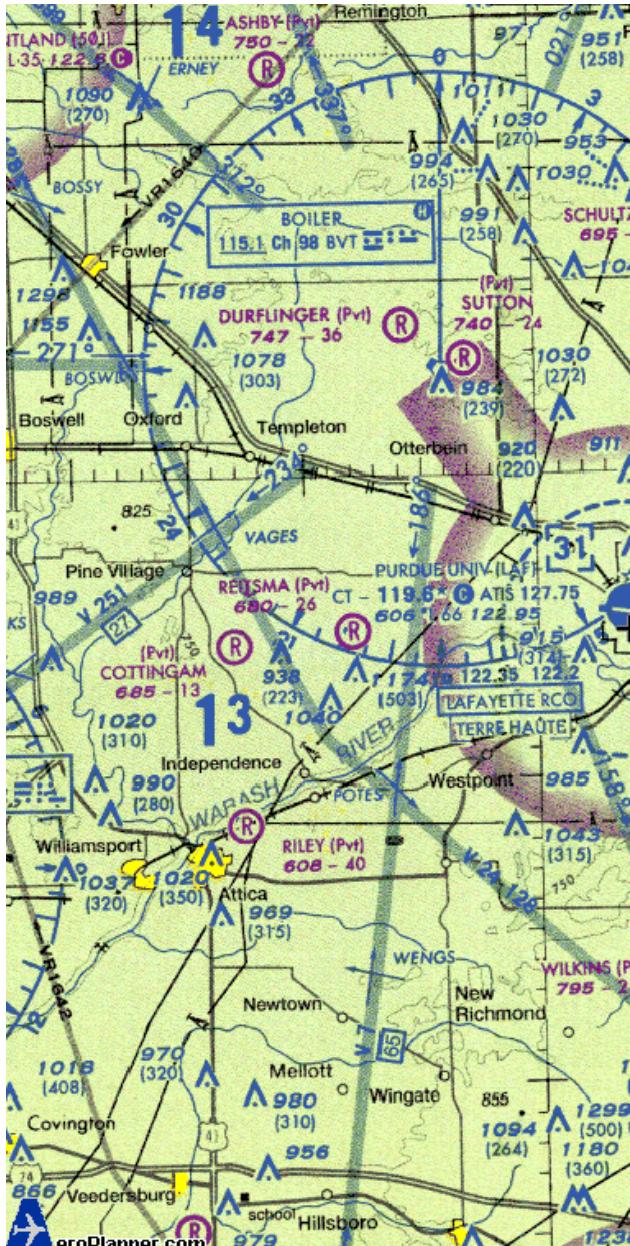


Runway End Identifier Lights (REILs)

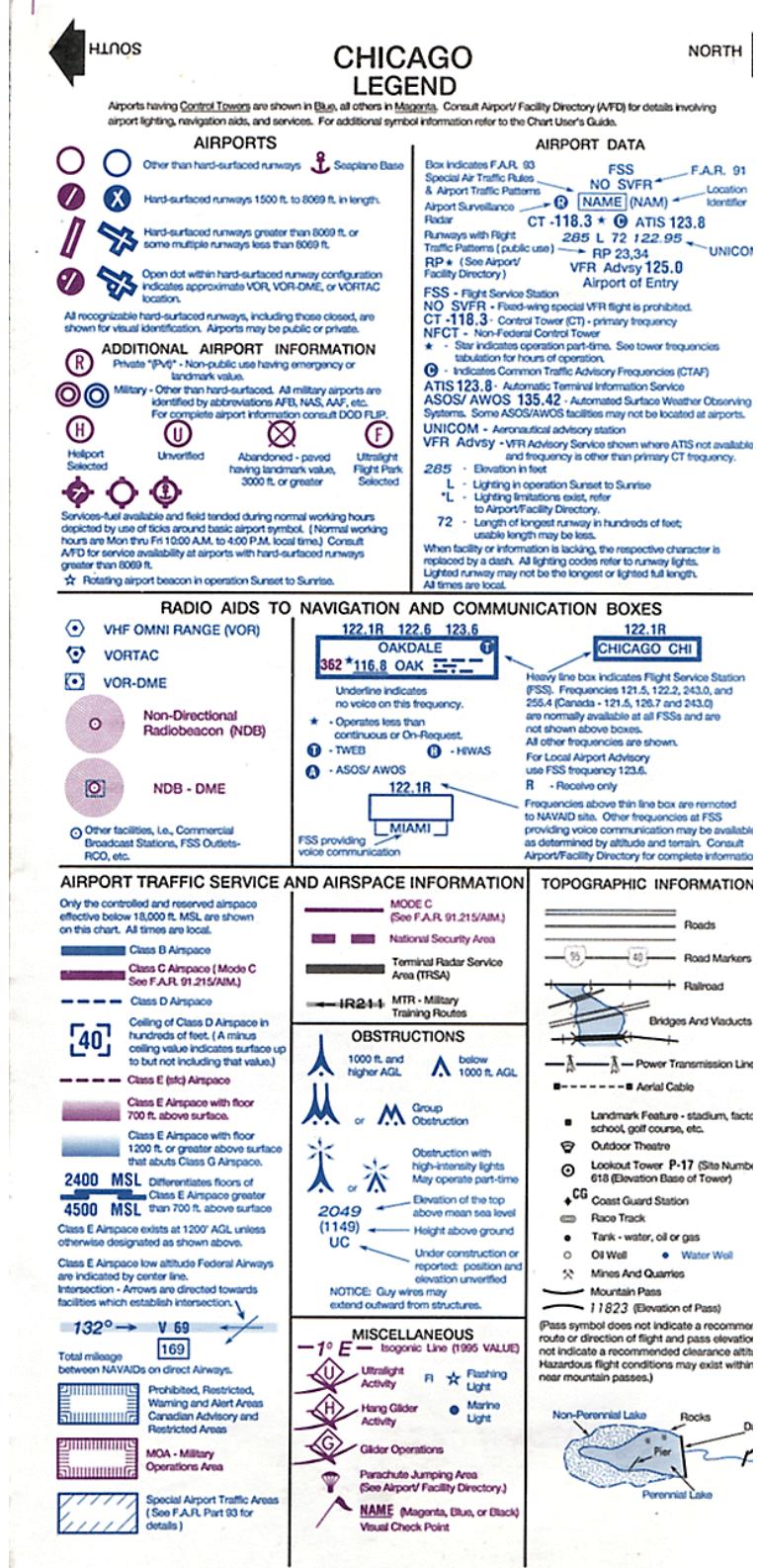


6: Navigation

Sectional Charts



Legend



Distance Measuring Equipment (DME)

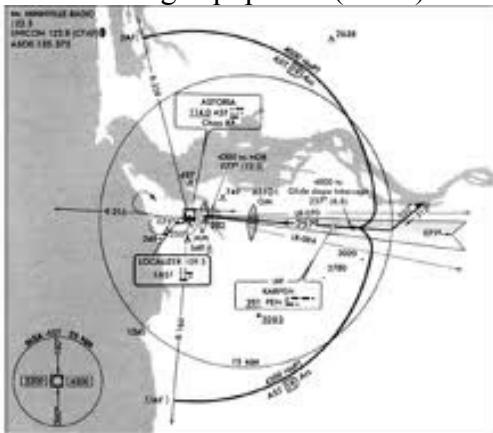


Figure 7-18. Localizer intersection from DME arc.

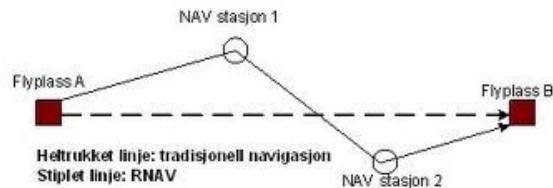
Nondirectional Radio Beacon (NDB)



Antenna

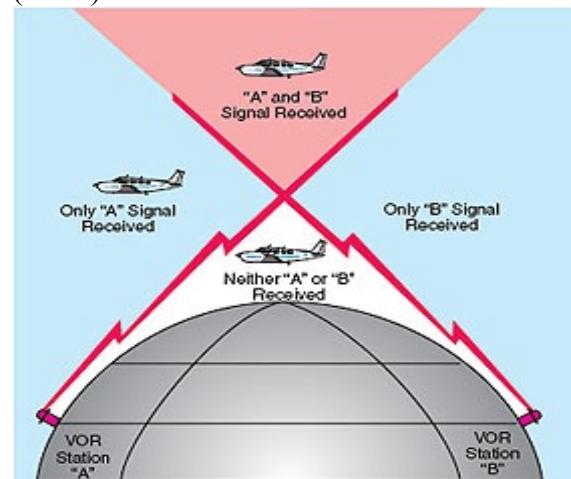


Area Navigation (RNAV)



Figur 1

Very High Frequency Omnidirectional Range (VOR)



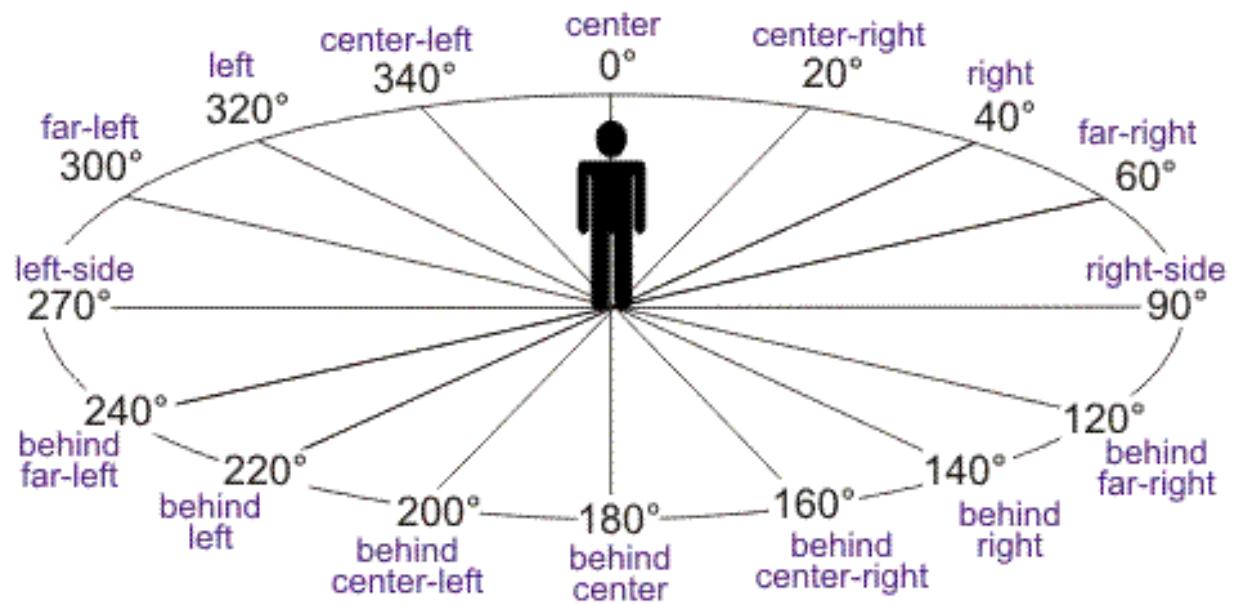
VORTAC



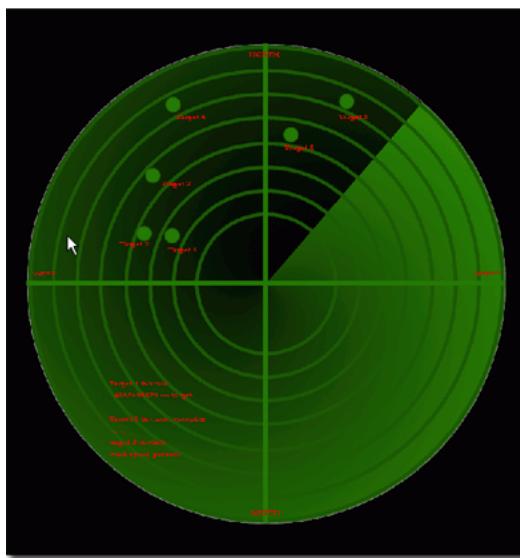
Compass Rose



Range Azimuth

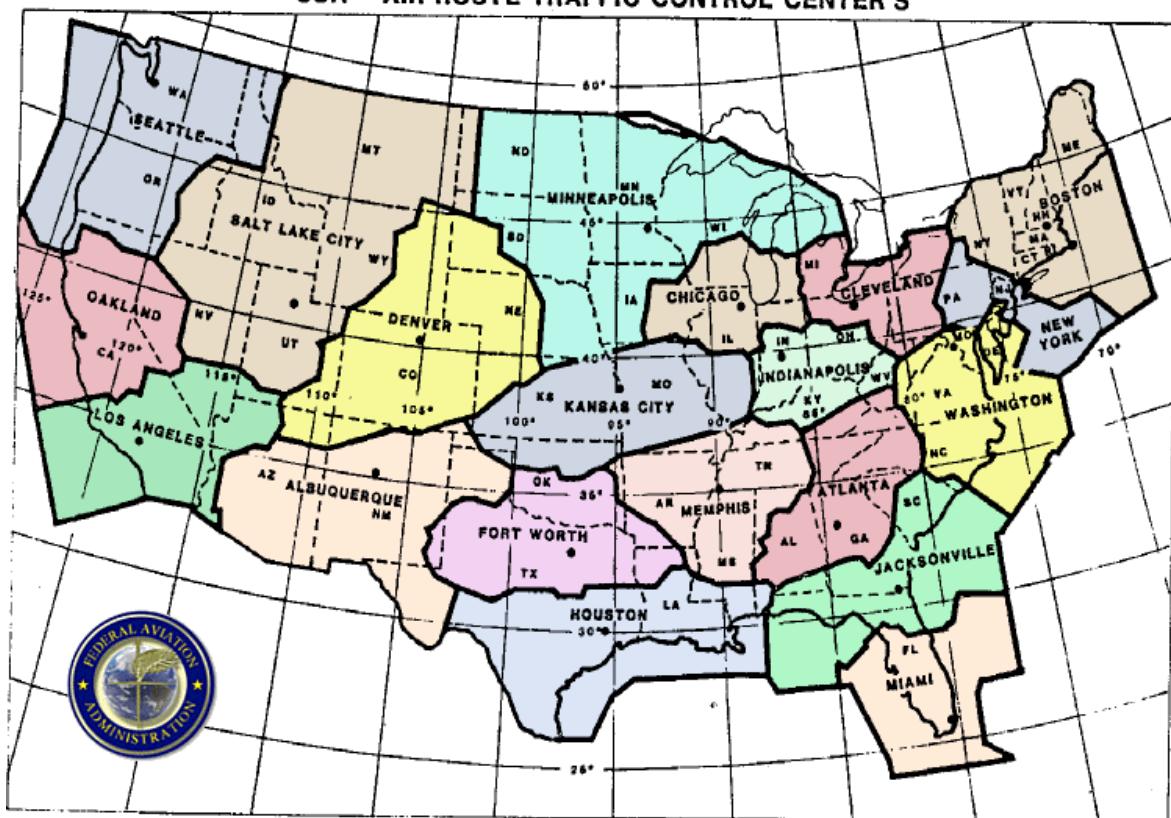


Radar



Air Route Traffic Control Centers (ARTCCs)

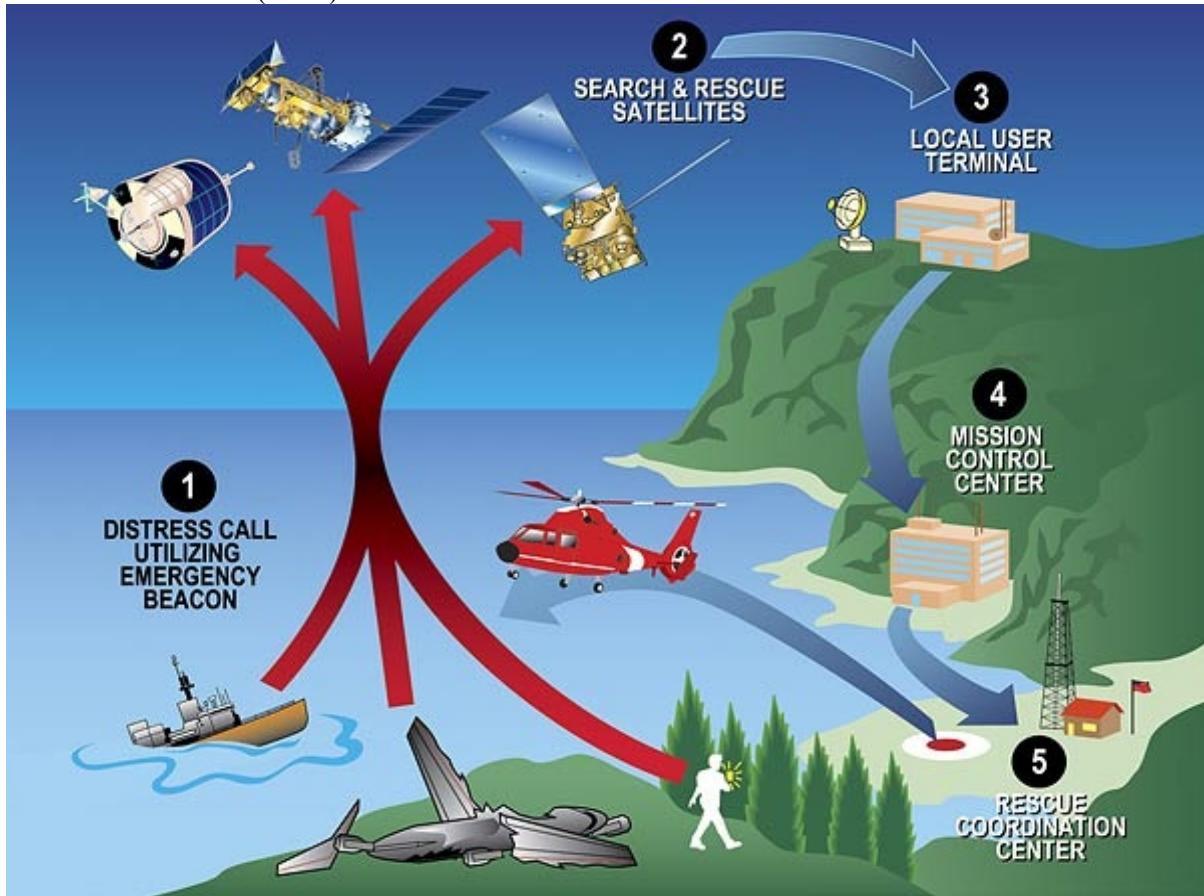
USA - AIR ROUTE TRAFFIC CONTROL CENTER'S



Flight Plan

| FLIGHT PLAN | | | | | | |
|---|--------------------------------------|--|---|---|--|------------------------------|
| 1. TYPE <input checked="" type="checkbox"/> VFR <input type="checkbox"/> IFR <input type="checkbox"/> DVFR | 2. AIRCRAFT IDENTIFICATION N123DB | 3. AIRCRAFT TYPE/SPECIAL EQUIPMENT C150/X | 4. TRUE AIRSPEED 115 KTS | 5. DEPARTURE POINT CHICKASHA AIRPORT | 6. DEPARTURE TIME PROPOSED (Z) 1400Z | 7. CRUISING ALTITUDE 5500 |
| 8. ROUTE OF FLIGHT Chickasha direct Guthrie | | | | | | |
| 9. DESTINATION (Name of airport and city) Guthrie Airport Guthrie, OK | | 10. EST. TIME ENROUTE HOURS 35 | 11. REMARKS | | | |
| 12. FUEL ON BOARD HOURS 4 | | 13. ALTERNATE AIRPORT(S) MINUTES 45 | 14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE Jane Smith Aero Air Oklahoma City, OK (405) 555-4149 | | | 15. NUMBER ABOARD 1 |
| 16. COLOR OF AIRCRAFT Red/White | | CLOSE VFR FLIGHT PLAN WITH <u>McAlester</u> FSS ON ARRIVAL | | | | |

Search and Rescue (SAR)



Emergency Locator Transmitter (ELT)



N Number (Tail/Registration Number)



Phonetic Alphabet

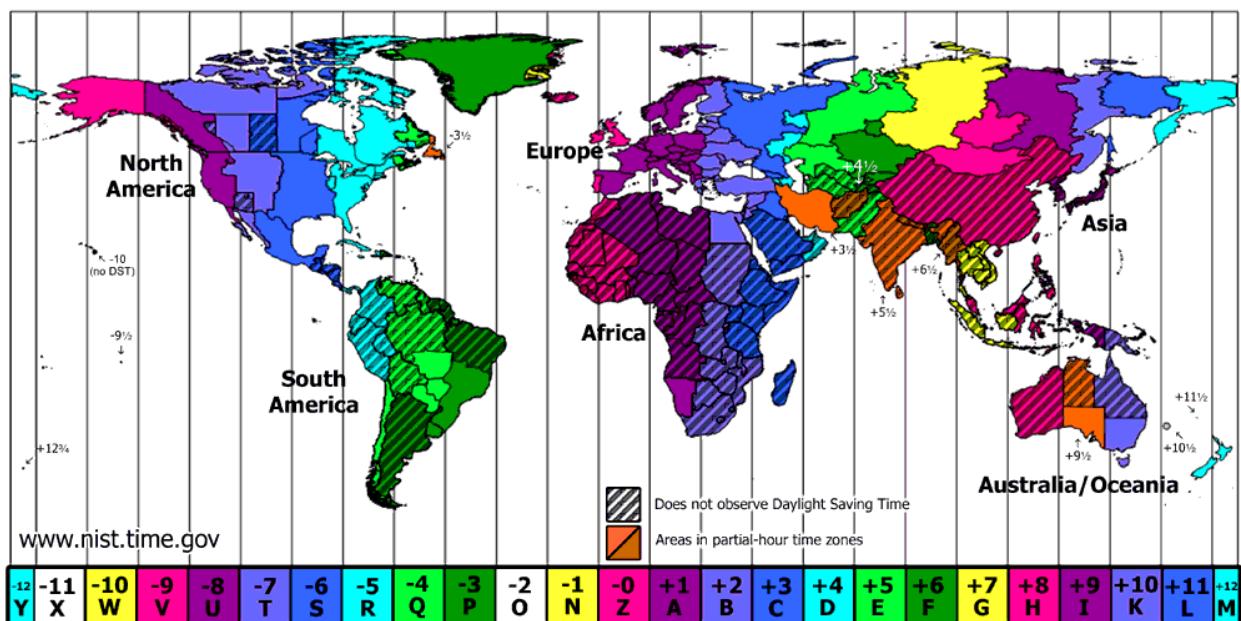
International Phonetic Alphabet

| | | | | | |
|---|-------|---------|---|------|----------|
| A | -- | Alpha | N | -- | November |
| B | --- | Bravo | O | --- | Oscar |
| C | ---- | Charlie | P | ---- | Papa |
| D | -.. | Delta | Q | ---- | Quebec |
| E | . | Echo | R | --- | Romeo |
| F | ---- | Foxtrot | S | --- | Sierra |
| G | --- | Golf | T | - | Tango |
| H | --- | Hotel | U | --- | Uniform |
| I | -- | India | V | ---- | Victor |
| J | ----- | Juliet | W | --- | Whiskey |
| K | -.. | Kilo | X | ---- | X-ray |
| L | ---- | Lima | Y | ---- | Yankee |
| M | -- | Mike | Z | ---- | Zulu |

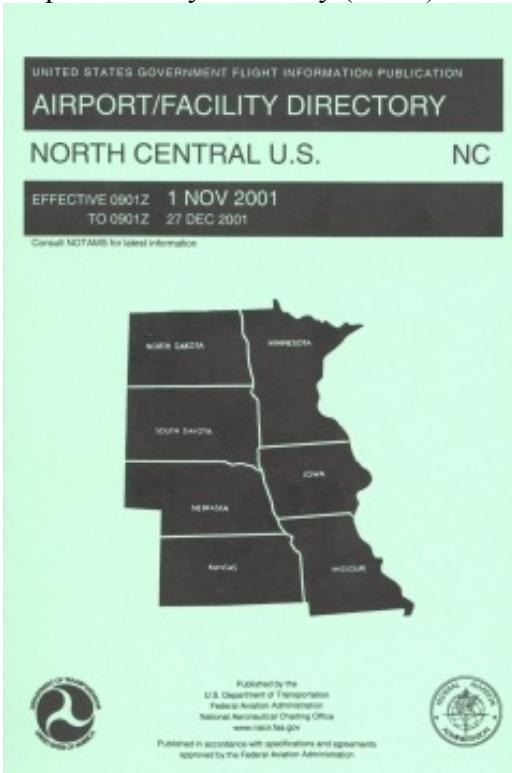
Zulu Time



Coordinated Universal Time (UTC)



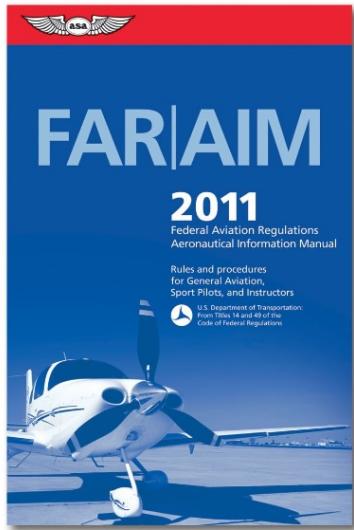
Airport/Facility Directory (A/FD)



Time Difference



Aeronautical Information Manual (AIM)



7: Flight Planning

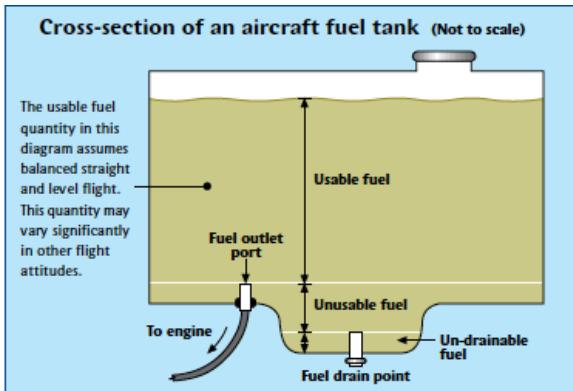
Basic Empty Weight



Useful Load



Unusable Fuel



Fuel Reserve



Service Ceiling



Supplemental Oxygen



8: Weather

Atmosphere



Troposphere

Tropopause

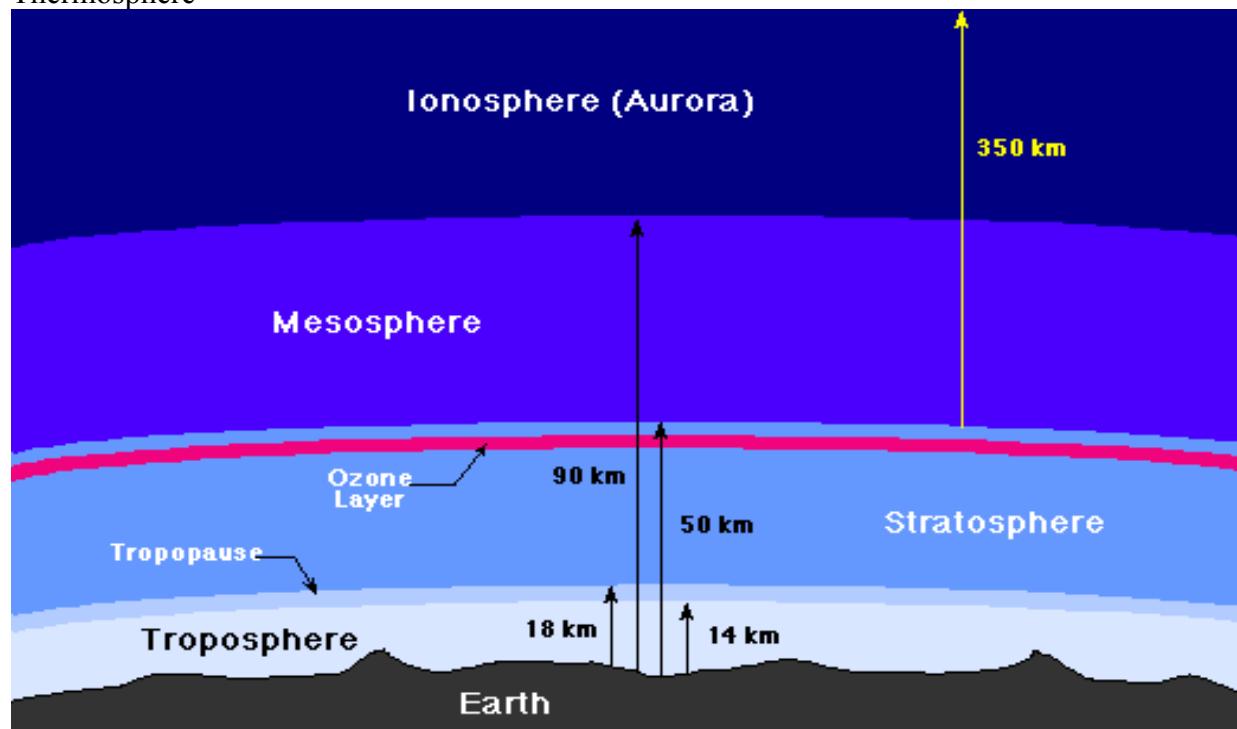
Stratosphere

Mesosphere

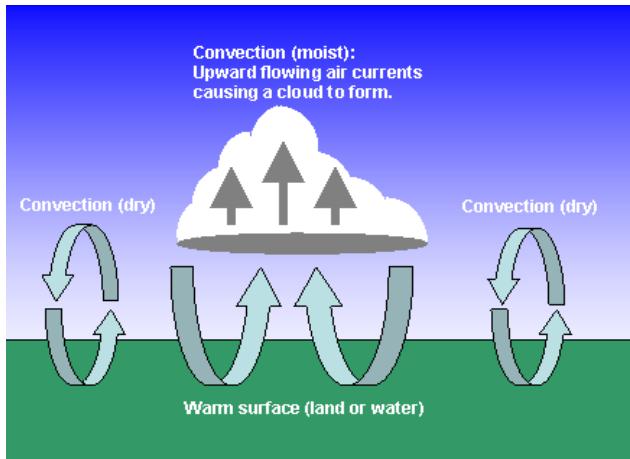
Thermosphere

International Standard Atmosphere

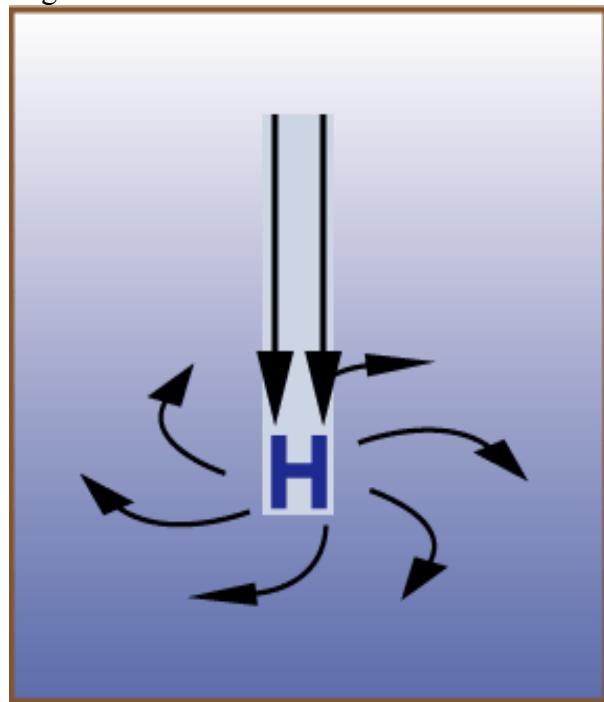
| Standard Atmosphere | | | |
|---------------------|-------------------|------------|------------|
| Altitude (ft) | Pressure (in. Hg) | Temp. (°C) | Temp. (°F) |
| 0 | 29.92 | 15.0 | 59.0 |
| 1,000 | 28.86 | 13.0 | 55.4 |
| 2,000 | 27.82 | 11.0 | 51.9 |
| 3,000 | 26.82 | 9.1 | 48.3 |
| 4,000 | 25.84 | 7.1 | 44.7 |
| 5,000 | 24.89 | 5.1 | 41.2 |
| 6,000 | 23.98 | 3.1 | 37.6 |
| 7,000 | 23.09 | 1.1 | 34.0 |
| 8,000 | 22.22 | -0.9 | 30.5 |
| 9,000 | 21.38 | -2.8 | 26.9 |
| 10,000 | 20.57 | -4.8 | 23.3 |
| 11,000 | 19.79 | -6.8 | 19.8 |
| 12,000 | 19.02 | -8.8 | 16.2 |
| 13,000 | 18.29 | -10.8 | 12.6 |
| 14,000 | 17.57 | -12.7 | 9.1 |
| 15,000 | 16.88 | -14.7 | 5.5 |
| 16,000 | 16.21 | -16.7 | 1.9 |
| 17,000 | 15.56 | -18.7 | -1.6 |
| 18,000 | 14.94 | -20.7 | -5.2 |
| 19,000 | 14.33 | -22.6 | -8.8 |
| 20,000 | 13.74 | -24.6 | -12.3 |



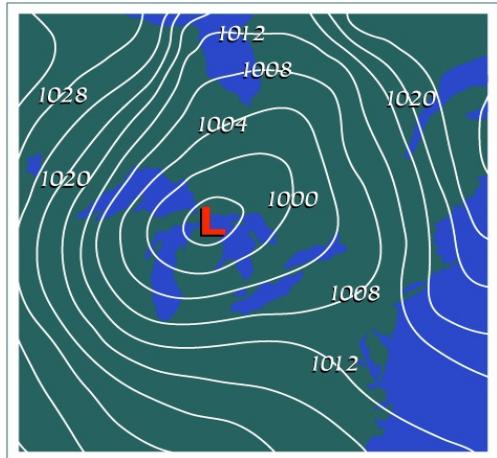
Convection



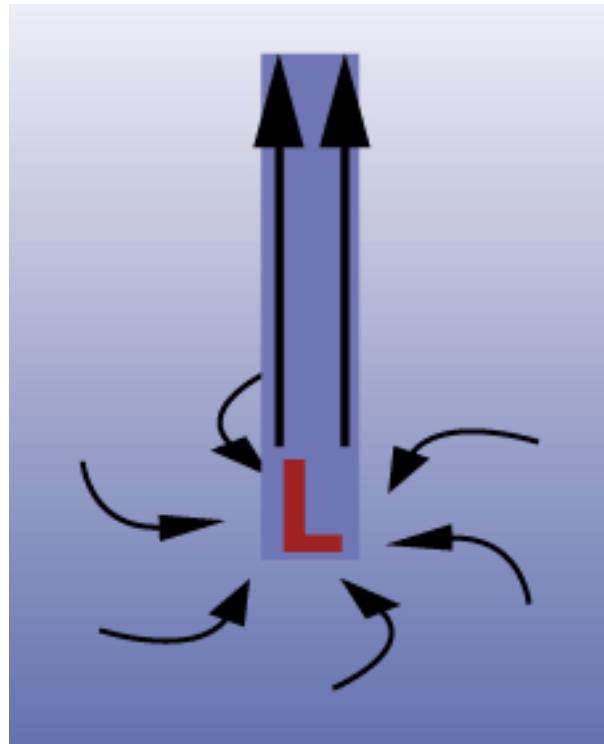
High



Isobars



Low



Pressure Gradient

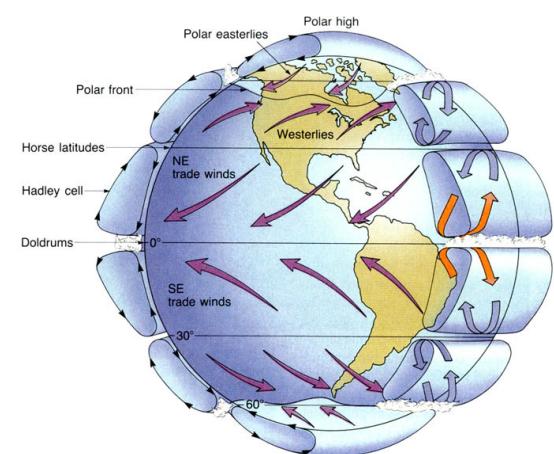
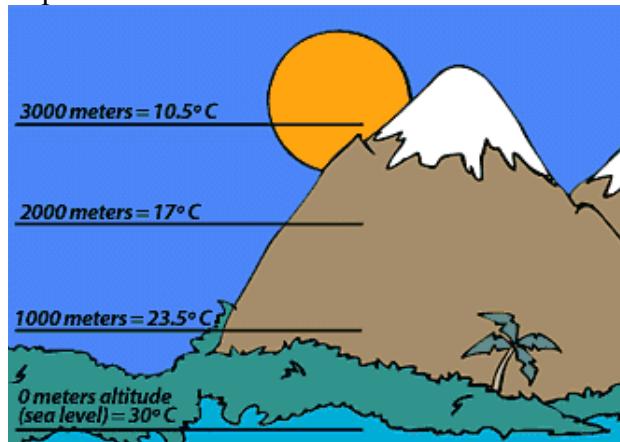
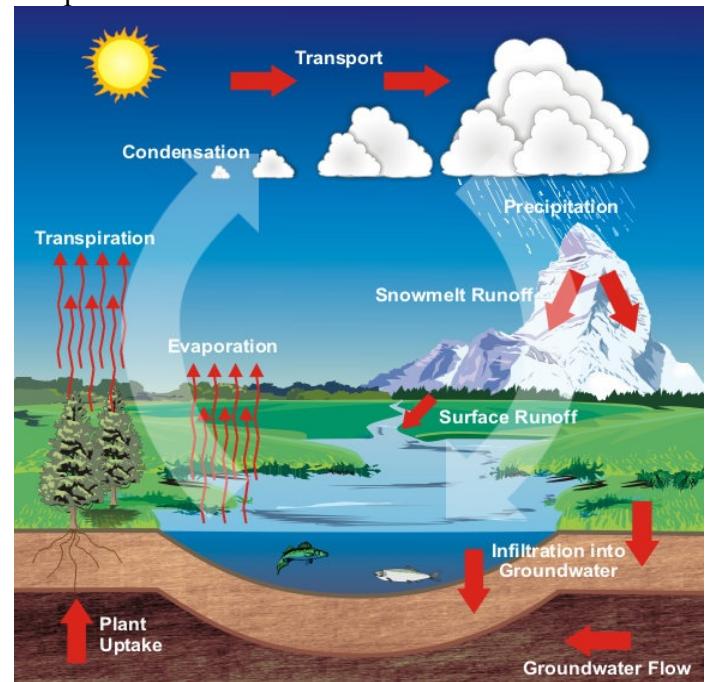


Figure 8*3 Idealized global circulation proposed for the three-cell circulation model.

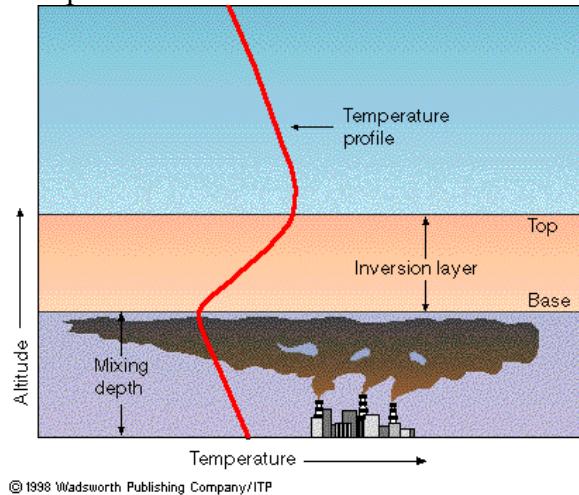
Lapse Rate



Evaporation/Condensation



Temperature Inversion



Melting



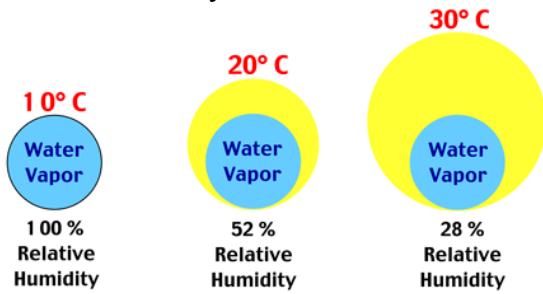
Freezing



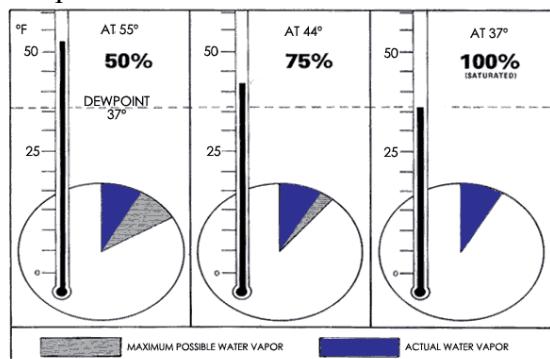
Humidity



Relative Humidity



Dewpoint



Saturated/Dew



Frost

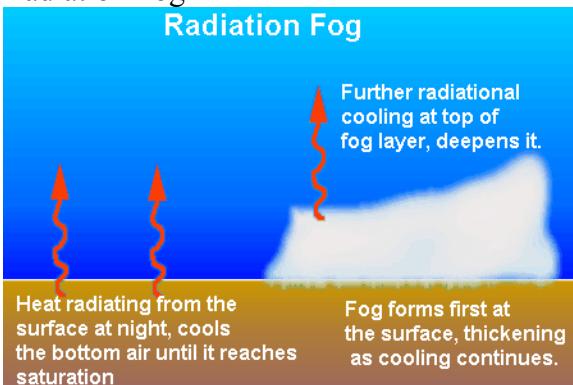


Fog



Chronicle / Frederic Larson

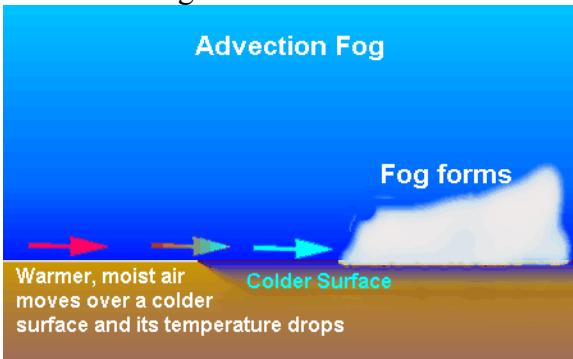
Radiation Fog



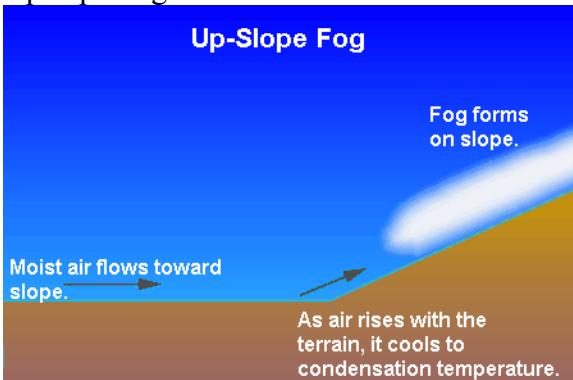
Ground Fog



Advection Fog



Upslope Fog



Steam Fog



Cumulus



Towering Cumulus



Cumulonimbus



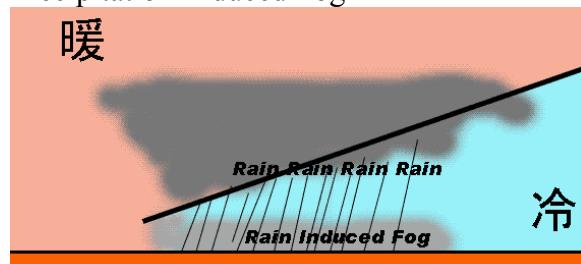
Precipitation



Virga



Precipitation-Induced Fog



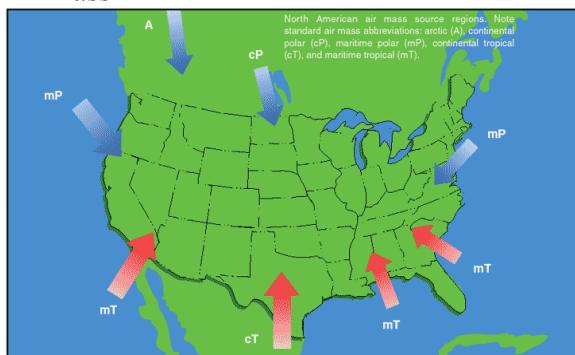
Ice Pellets



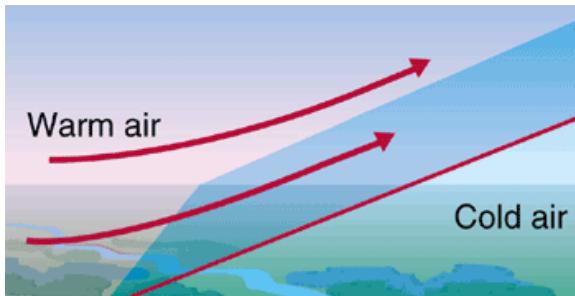
Hail



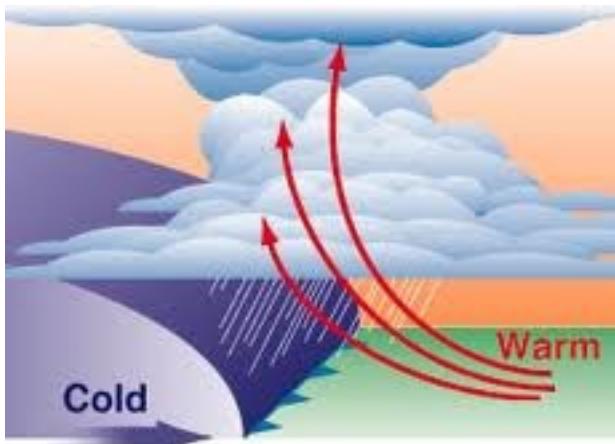
Airmass



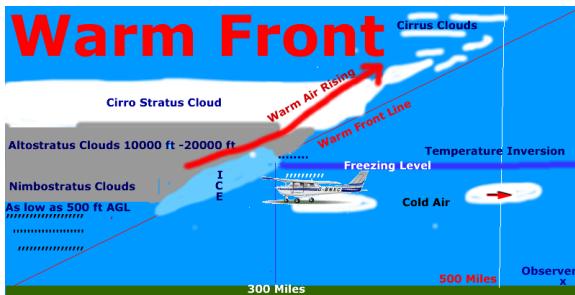
Front



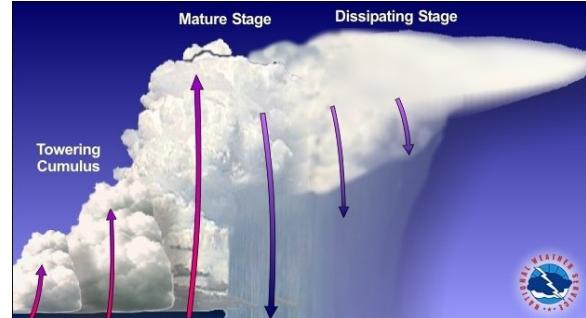
Cold Front



Warm Front



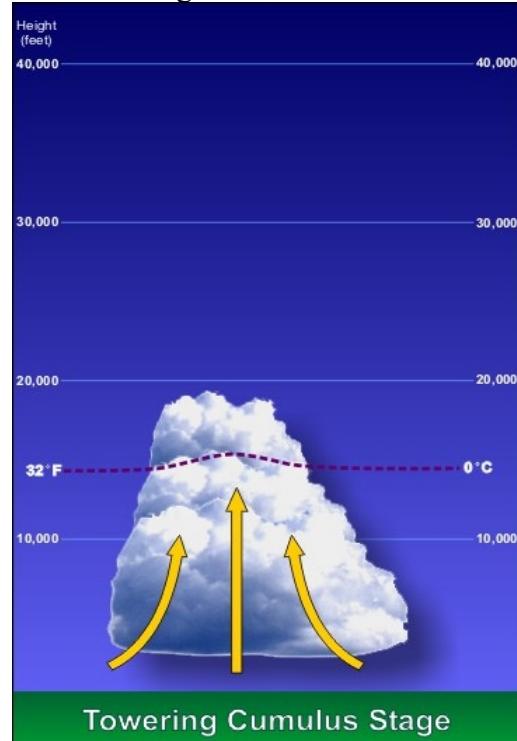
Thunderstorms



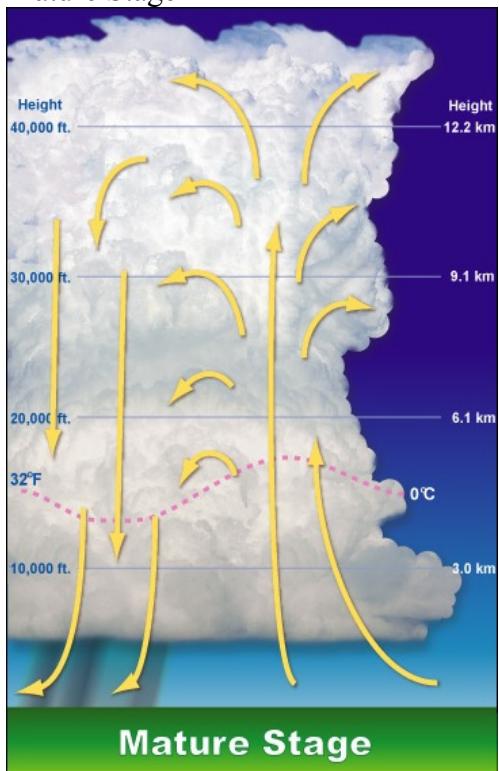
Squall Line



Cumulus Stage



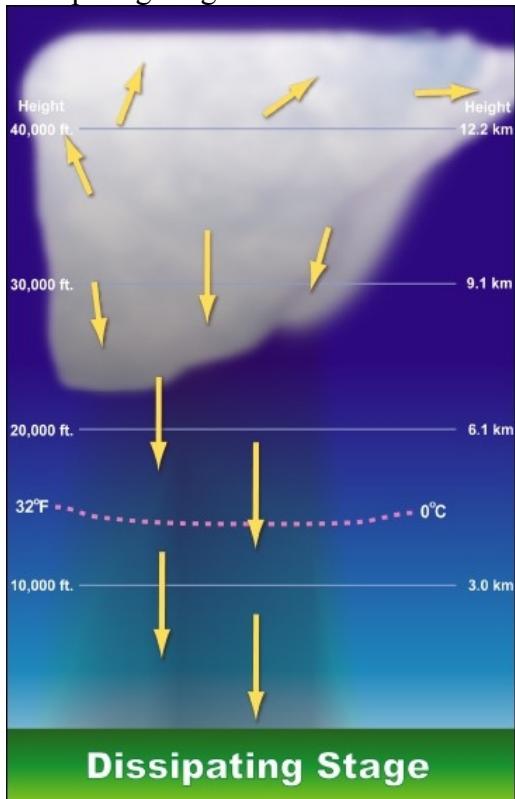
Mature Stage



Roll Cloud



Dissipating Stage



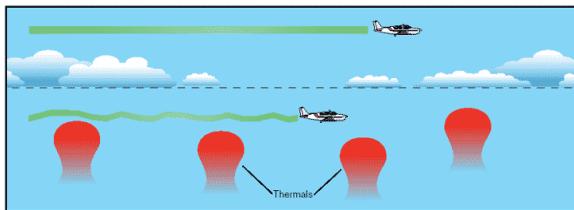
Tornado



Waterspout



Convective Turbulence



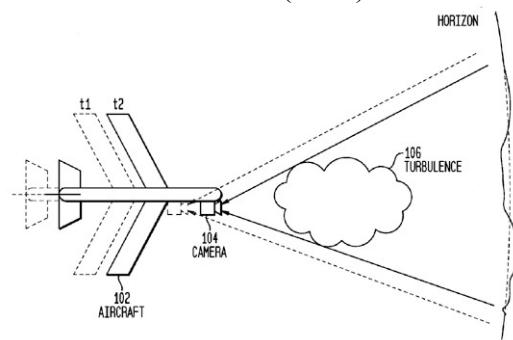
Jet Engine Blast



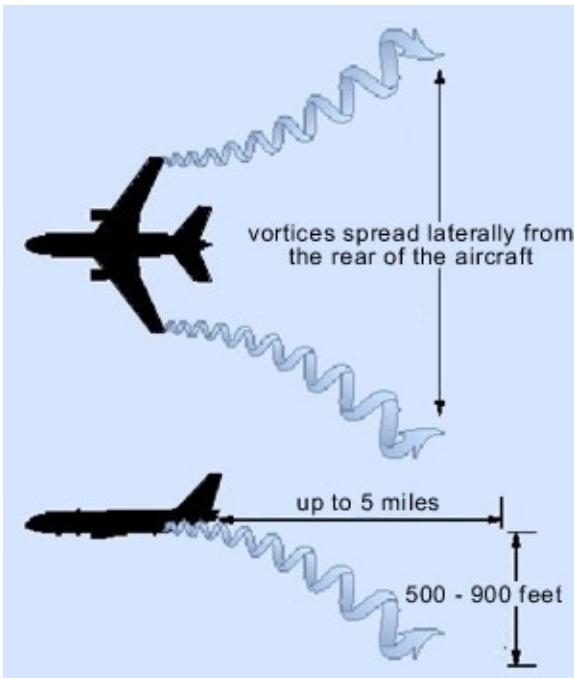
Frontal Turbulence



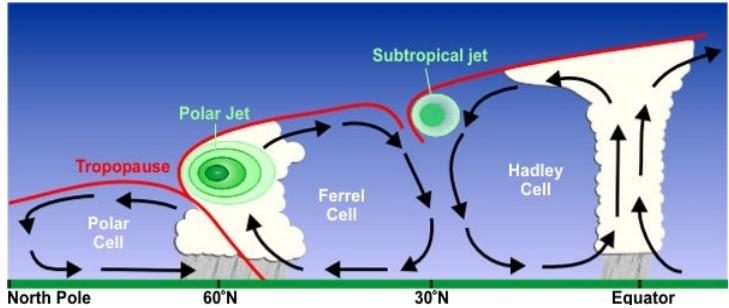
Clear Air Turbulence (CAT)



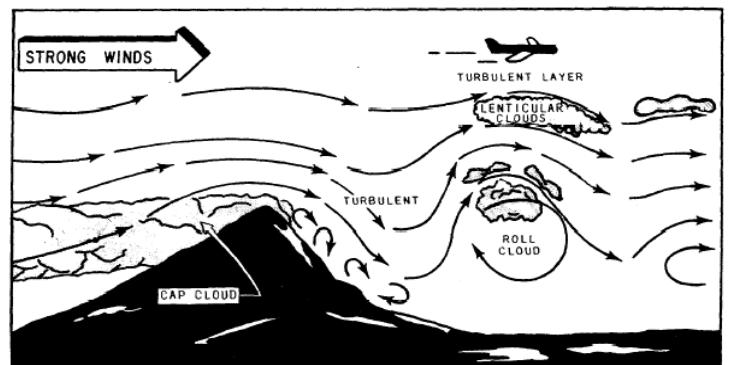
Wake Turbulence



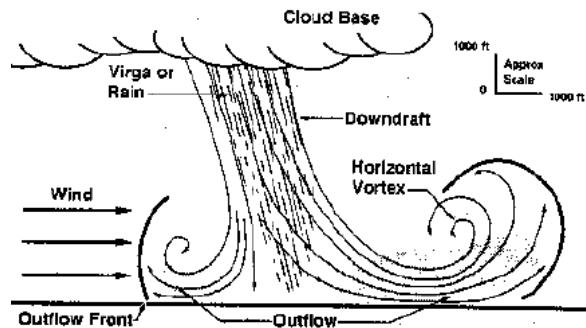
Jet Stream



Mountain Waves



Microburst



Low-Level Wind Shear

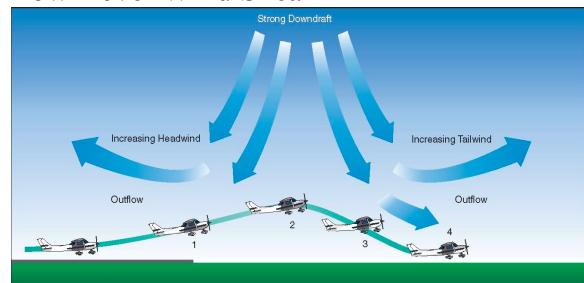
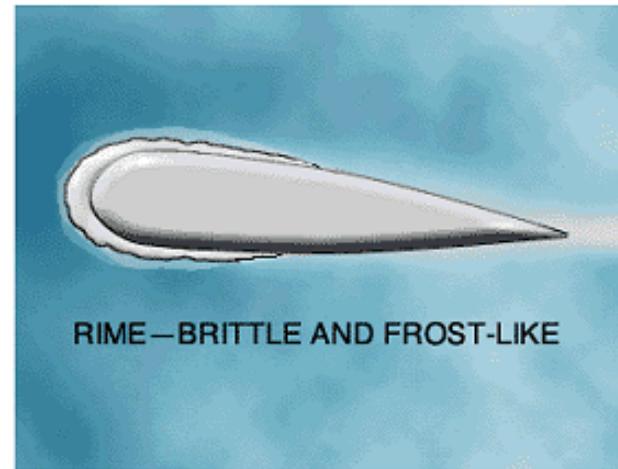


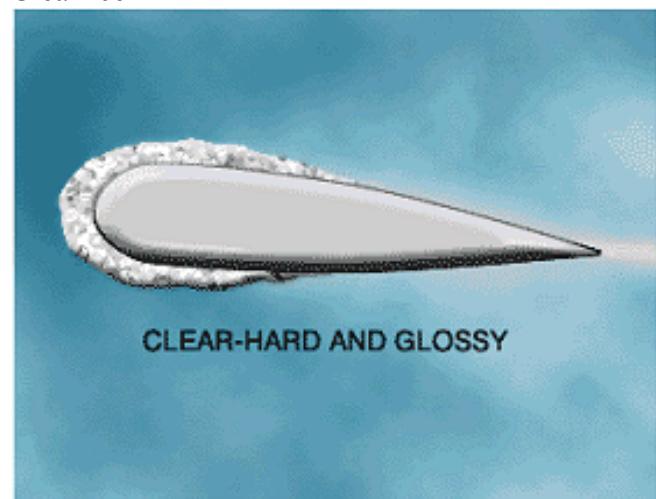
Figure 10-17. Effect of a microburst wind.

Rime Ice



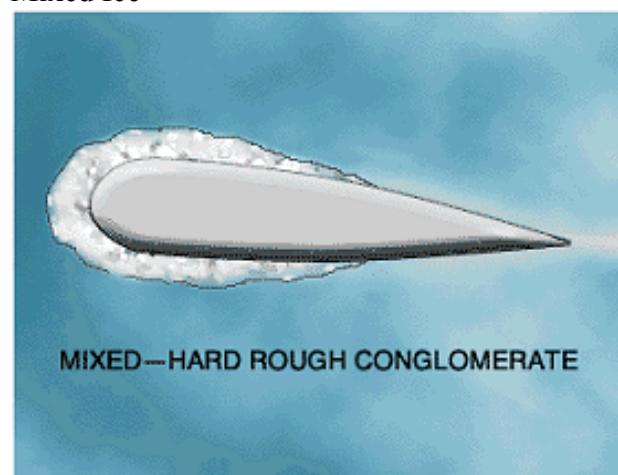
Sideview of wing with rime.

Clear Ice



Sideview of wing with clear ice

Mixed Ice



Sideview of wing with mixed ice

Haze



Volcanic Ash



Smoke



Prevailing Visibility



Smog



Runway Visual Range (RVR)



Dust



Ceiling



Pilot Weather Report (PIREP)

| ENCODING PILOT WEATHER REPORTS (PIREPS) | |
|---|--|
| 1. /UA | Routine PIREP, UUA-Urgent PIREP. |
| 2. /OV | Location: Use 3-letter NAVAID ident only. a. Fix: /OV ABC, /OV ABC 0900Z. b. Fix: /OV ABC 0450Z-DEF, /OV ABC-DEF-GHI. |
| 3. /TM | Time: 4 digits in UTC: /TM 0915. |
| 4. /FL | Altitude/Flight Level: 3 digits for hundreds of feet. If not known use UNKN: /FL095, /FL110, /FLUNKN. |
| 5. /TP | Type Aircraft: 4 digits maximum, if not known use UNKN: /TP L329, /TP B172, /TP UNKN. |
| 6. /SK | Cloud Layers: Describe as follows: a. Height of cloud base in hundreds of feet. b. If unknown, use UNKN. c. Cloud cover symbol. d. Height of cloud tops in hundreds of feet. |
| 7. /WX | Weather: Flight visibility reported first. Use standard weather symbols, Intensity is not reported: /WX FV02 R H, /WX FV01 TRW. |
| 8. /TA | Air Temperature in Celsius: If below zero, prefix with a hyphen: /TA 15, /TA -06. |
| 9. /WV | Wind: Direction and speed in six digits: /WV 270045, /WV 230110. |
| 10. /TB | Turbulence: Use standard contractions for intensity and type (use CAT or CHOP when appropriate). Include altitude only if different from /FL, /TB EXTREME, /TB LGT-MDT BLO 090. |
| 11. /IC | Icing: Describe using standard intensity and type contractions. Include altitude only if different than /FL: /IC LGT-MDT RIME, /IC SVR CLR 028-045. |
| 12. /RM | Remarks: Use free form to clarify the report and type hazardous elements first: /RM LLWS -15 KT SFC-030 DURC RNWY 22 JFK. |

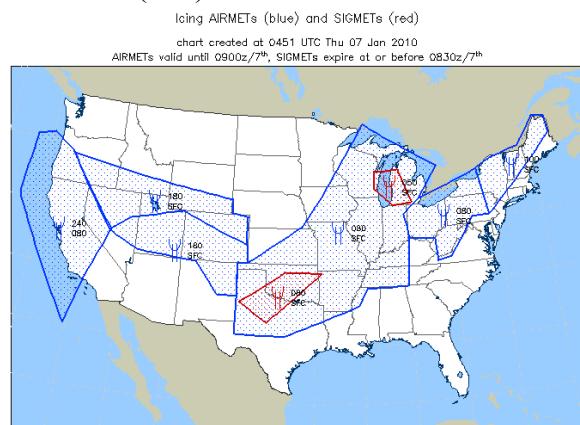
Terminal Aerodrome Forecast (TAF)

KSEA 201727Z 2018/2124 21005KT P6SM SCT035
BKN060
FM202000 21009KT P6SM -SHRA BKN035 OVC050
FM210300 19006KT P6SM VCSH OVC035
FM210600 18007KT P6SM OVC030

AIRMET (WA)

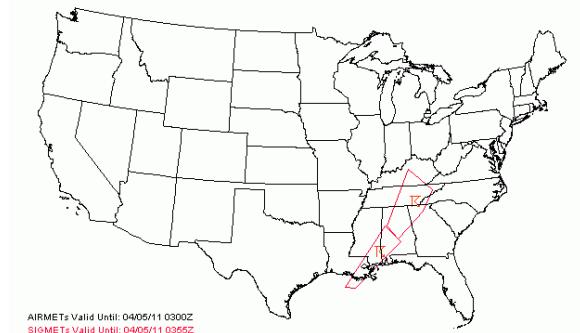
WAUS44 KKCI 201755 AAA
DFWS WA 201755 AMD
AIRMET SIERRA UPDT 5 FOR IFR AND MTN OBSCN
VALID UNTIL 202100
AIRMET MTN OBSCN...TX...UPDT
FROM 40W INK TO 70SSE FST TO 100SSE MRF TO
50SSW MRF TO 40E ELP
TO 40W INK
MTNS OBSC BY CLDS/PCPN/BR. CONDS ENDG 18-21Z.

SIGMET (WS)

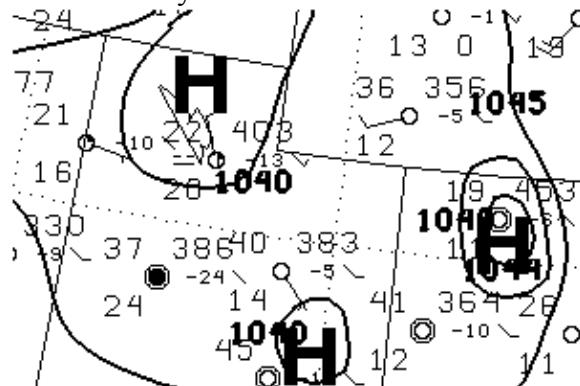


Convective SIGMET (WST)

AIR/SIGMETs Java Tool



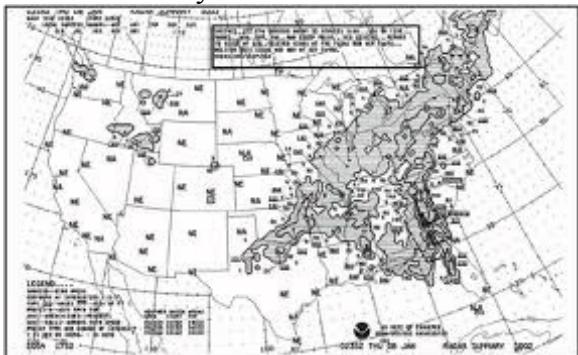
Surface Analysis Chart



Weather Depiction Chart



Radar Summary Chart



Forecast Winds And Temperatures Aloft Chart (FD)



Automated Weather Observing System (AWOS)



Automated Surface Observing System (ASOS)

