

WARM FRONT

Warm air HOLDS cold dense air DOWN = HIGH PRESSURE

Good Flying (longer lasting front)

Clockwise Movement

STABLE AIR (Resist Lift)

= Stratus clouds (flat on top)

= Steady precipitation w/ moisture

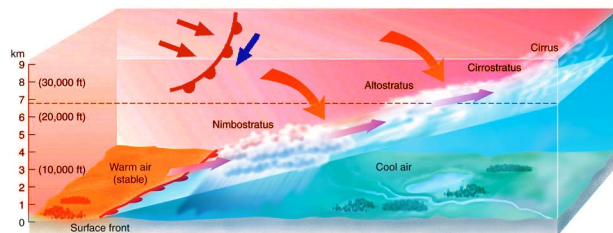
= Poor visibility (holds haze / fog to the ground)

= Smooth Air

Temp Inversion - warm air higher

Wind Shear

Freezing rain (warm rain passing through colder air)



COLD FRONT

Cold air PUSHES warm moist air UP = LOW PRESSURE

Poor Flying (shorter lasting - rains its self out)

Counter Clockwise

UNSTABLE (Lift)

= Convective Thunderstorms w/ moisture

= Showery precipitation

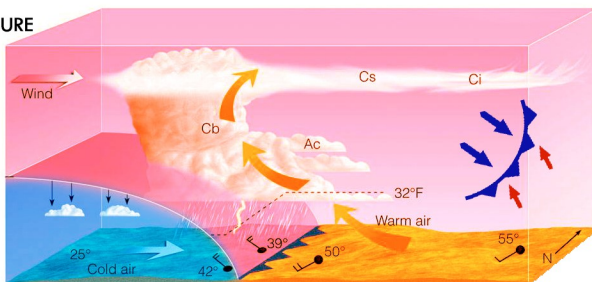
= Good visibility (high wind / warm air)

= Turbulence (unstable)

Wind Shear / Temp Inversion

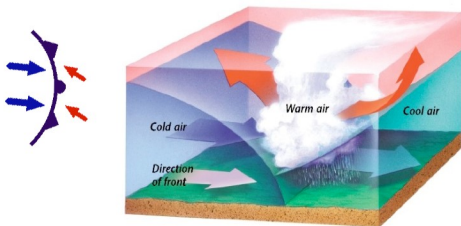
During Summer Months

Fast Moving = Squal Line Thunderstorms (50-200 miles in front of line)



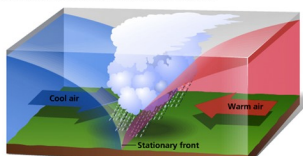
OCCLUDED

Combination of warm/cold fronts



STATIONARY

Warm/Cold meet but don't mix
Wind always blows along frontal boundary
Can cause embedded storms



Coriolis Force - wind/weather moves West to East in North Hem

Heat Exchange - Sun Powers Weather

Convection - land heats faster & holds heat, water disperses heat (wind always from ocean)

Temp Inversion - Clear air turbulence

Wind Shear - Change in direction

Microburst (dry / wet) - heavy downdraft in a thunderstorm (airspeed increases, then decreases rapidly)

Hail - strong uplift, very cold aloft

Standing Lenticular Clouds (Lens shape) above mtns = STAY AWAY

Mountain Turbulence = 40+ Kts

Hot Air holds more moisture

Temp / Dew Point - Temp at which air must be cooled to become saturated (cloud, rain, fog, etc)

Fog < 5 degrees btw Temp / Dew Point

Frost - when temp is below freezing

(Temp - Dew point) / 4 x 1000 = base of clouds

Carb Ice: 50-100% Humidity, 20-70F Temp

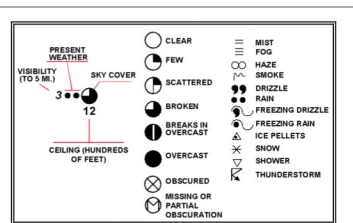
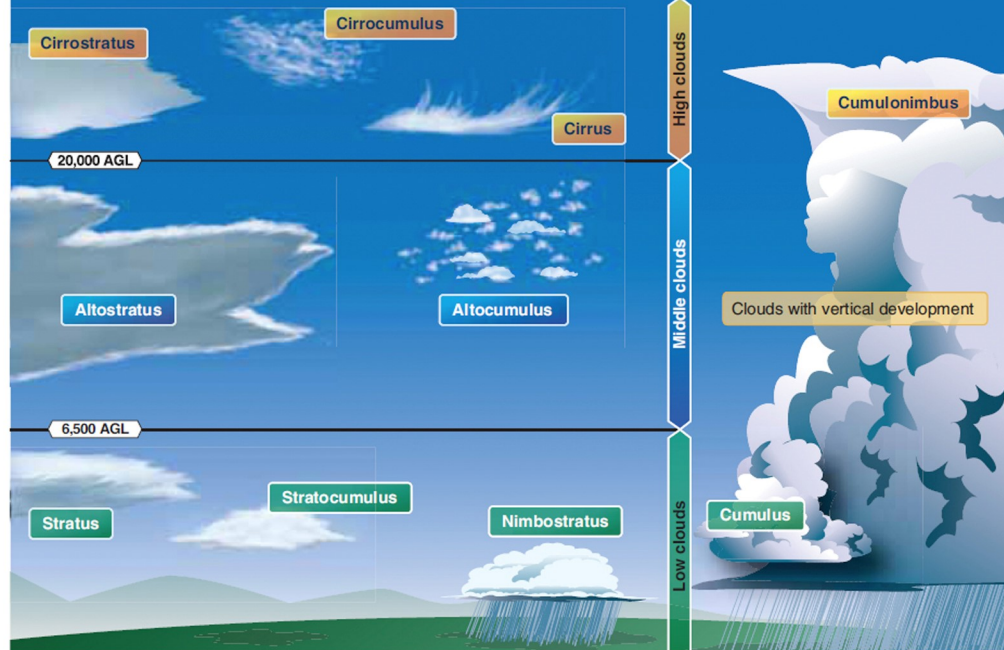
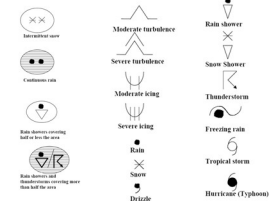


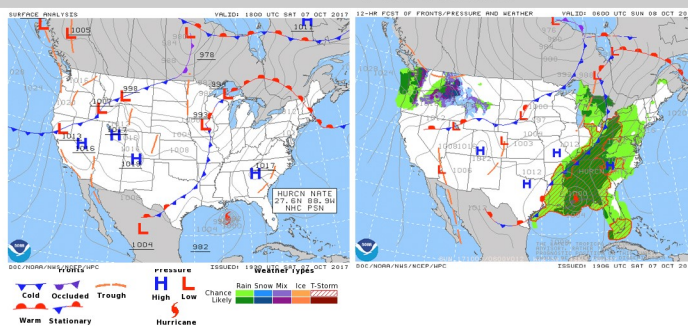
Figure 5-40. Weather Depiction Chart Station Plot Model



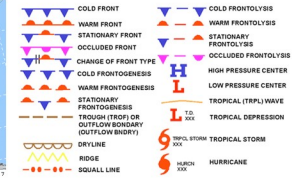
SURFACE PROG CHARTS

7 DAY FORECAST

AviationWeather.gov/progchart/sfc



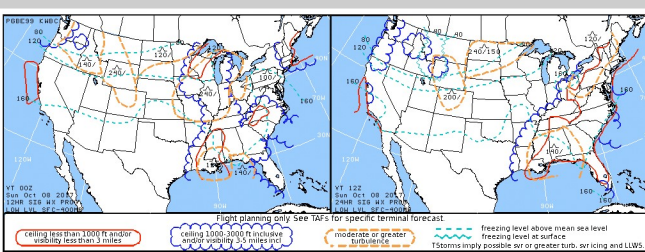
2 DAY www.1800wxbrief.com
3 DAY www.duats.com



LOW LEVEL SIGNIFICANT WEATHER CHARTS

2 DAY FORECAST

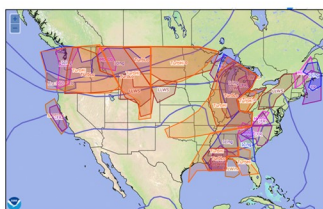
AviationWeather.gov/progchart/low



AIRMETS / SIGMETS

UPDATED 4X/ DAY (0Z, 600Z, 1200Z, 1800Z)

AviationWeather.gov/sigmat



AIRMETS (3k square miles, every 6hrs)

ICE, Turb, Low Visibility, Wind: 30Knots or > at Surface, & Mtn Obscurement

SIGMETS (non convective weather)

Clear Air Turb, ICE, Dust, Sand, Volcanoes

Convective SIGMETS

Tornados, Thunderstorms, Embedded Th, Hail, Extreme Turb, Wind Shear

SIGMET [WS](#) [SE](#) [TB](#) [TS](#) [IS](#) [UA](#)