

relative humidity is low in any layer between the surface and 15,000 feet. Then the lower altitudes may be characterized by strong out flowing winds and severe turbulence.

**e.** The probability of lightning strikes occurring to aircraft is greatest when operating at altitudes where temperatures are between minus 5 degrees Celsius and plus 5 degrees Celsius. Lightning can strike aircraft flying in the clear in the vicinity of a thunderstorm.

**f.** METAR reports do not include a descriptor for severe thunderstorms. However, by understanding severe thunderstorm criteria, i.e., 50 knot winds or  $\frac{3}{4}$  inch hail, the information is available in the report to know that one is occurring.

**g.** Current weather radar systems are able to objectively determine precipitation intensity. These precipitation intensity areas are described as “light,” “moderate,” “heavy,” and “extreme.”

**REFERENCE–**

*Pilot/Controller Glossary– Precipitation Radar Weather Descriptions*

**EXAMPLE–**

**1.** Alert provided by an ATC facility to an aircraft: (aircraft identification) **EXTREME** precipitation between ten o'clock and two o'clock, one five miles. Precipitation area is two five miles in diameter.

**2.** Alert provided by an FSS: (aircraft identification) **EXTREME** precipitation two zero miles west of Atlanta V-O-R, two five miles wide, moving east at two zero knots, tops flight level three niner zero.

## ■ 7-1-29. Thunderstorm Flying

**a.** Thunderstorm Avoidance. Never regard any thunderstorm lightly, even when radar echoes are of light intensity. Avoiding thunderstorms is the best policy. Following are some Do's and Don'ts of thunderstorm avoidance:

**1.** Don't land or takeoff in the face of an approaching thunderstorm. A sudden gust front of low level turbulence could cause loss of control.

**2.** Don't attempt to fly under a thunderstorm even if you can see through to the other side. Turbulence and wind shear under the storm could be hazardous.

**3.** Don't attempt to fly under the anvil of a thunderstorm. There is a potential for severe and extreme clear air turbulence.

**4.** Don't fly without airborne radar into a cloud mass containing scattered embedded thunderstorms. Scattered thunderstorms not embedded usually can be visually circumnavigated.

**5.** Don't trust the visual appearance to be a reliable indicator of the turbulence inside a thunderstorm.

**6.** Don't assume that ATC will offer radar navigation guidance or deviations around thunderstorms.

**7.** Don't use data-linked weather next generation weather radar (NEXRAD) mosaic imagery as the sole means for negotiating a path through a thunderstorm area (tactical maneuvering).

**8.** Do remember that the data-linked NEXRAD mosaic imagery shows where the weather was, not where the weather is. The weather conditions may be 15 to 20 minutes older than the age indicated on the display.

**9.** Do listen to chatter on the ATC frequency for Pilot Weather Reports (PIREP) and other aircraft requesting to deviate or divert.

**10.** Do ask ATC for radar navigation guidance or to approve deviations around thunderstorms, if needed.

**11.** Do use data-linked weather NEXRAD mosaic imagery (for example, Flight Information Service-Broadcast (FIS-B)) for route selection to avoid thunderstorms entirely (strategic maneuvering).

**12.** Do advise ATC, when switched to another controller, that you are deviating for thunderstorms before accepting to rejoin the original route.

**13.** Do ensure that after an authorized weather deviation, before accepting to rejoin the original route, that the route of flight is clear of thunderstorms.

**14.** Do avoid by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo. This is especially true under the anvil of a large cumulonimbus.

**15.** Do circumnavigate the entire area if the area has 6/10 thunderstorm coverage.

**16.** Do remember that vivid and frequent lightning indicates the probability of a severe thunderstorm.