



# Interagency Aviation Accident Prevention Bulletin



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**Subject:** Is it Spring Yet?

**Area of Concern:** Adverse weather

**Distribution:** All Aviation Activities

**Discussion:** The winter of 2013 has been very severe for many parts of the country. But while winter is finally losing its grip, it isn't over yet. Widespread icing still exists during the transition months of March and April. Gulf moisture, warmer temperatures and an overactive jet stream guarantees that convective SIGMETs will begin to spring out of hibernation. With temperatures slowly on the rise, it is essential to include key weather products in your flight planning.



While adverse weather, such as dense fog, low ceilings and turbulence, play a role in the decision to go or stay, icing and convection are the heavy hitters this time of year. It's not uncommon to be worried about thunderstorms one day and icing the next. Obviously, thunderstorm and icing forecasts are critical, so you'll need to pay close attention to the freezing level as well as convective outlooks.

## Freezing Level

The lowest freezing level has the most impact of any single meteorological factor during the early spring months ([http://adds.aviationweather.gov/icing/frzg\\_nav.php](http://adds.aviationweather.gov/icing/frzg_nav.php)). Day to day, it changes more during early spring than at any other time of year. It's not unusual to see the freezing level drop 5,000 feet or more within a 24-hour period at any one location. A flight on Monday might not be possible on Tuesday due to a lower freezing level that would place you into icing conditions. The freezing level is something every pilot needs to be aware of all year long but spring brings about drastic changes in very short periods of time thus demanding even greater attention.

When you begin your flight planning, get the big picture first or what meteorologists call the synoptic view. Start with the mean sea level pressure surface analysis and forecast. Get a sense of where the adverse weather is located and where it may be moving. Take note of all of the surface low pressure areas and surface frontal zones, especially those with occluded fronts. When a low pressure system begins to occlude, it's near its peak intensity.

While it's important to identify the location and movement of frontal systems, the mean sea level chart tells only part of the big picture. Often the story at 500 mb (18,000 feet) provides many more clues about the weather you might expect to encounter, including how the freezing level might change along your route.



## Convection

Despite the fact that most thunderstorms in the United States are just getting started, some of the deadliest outbreaks occur during spring. If your flight plan takes you anywhere near a cold front, it's imperative that you identify the convective threat ahead of and along the cold front. Check the convective outlooks, terminal aerodrome forecasts (TAFs) and area forecasts (FAs) **before** you depart.

In the early spring, most of the convective SIGMETs will be limited to the southeastern quarter of the United States based on convective SIGMET climatology compiled at the Aviation Weather Center (AWC). Convective SIGMETs are issued only for areas or lines of thunderstorms that meet the convective SIGMET criteria. In other words, these thunderstorms have to be significant to aviation. Of course, all thunderstorms are significant to pilots but become an even greater risk when they occur with such high density in a particular area or along a line. The AWC will likely issue a convective SIGMET to prepare pilots for this type of weather hazard.

At this time of the year, a good percentage of the thunderstorms in the southeastern states are associated with a rapidly deepening area of low pressure and a strong cold front. Many of the thunderstorms develop in the late afternoon in a solid line well ahead of the cold front. They often are severe and likely contain large hail and tornadoes.

As part of your mission planning, you'll want to be sure to check the convective outlook issued by the AWC ([http://adds.aviationweather.gov/data/airmets/airmets\\_CB.gif](http://adds.aviationweather.gov/data/airmets/airmets_CB.gif)). This is a forecast showing broad regions that are likely to contain convective SIGMETs in the next two to six hours.

Given the widespread nature of these thunderstorms, both FAs and TAFs depict the likelihood of these thunderstorms quite well. Time of onset is the key factor from a planning perspective so keep an eye on amendments to these forecasts. TAFs and FAs are amended on an as needed basis.

Adapted from an article by Scott C. Dennstaedt, *Plane & Pilot Magazine*, April 1, 2008

For further weather education and other air safety courses go to <http://www.aopa.org/Education/Online-Courses.aspx>. The courses are free and you don't have to be an AOPA member, but you will need to register.

Spring is a welcome relief from the doldrums of winter, but can be just as deadly.

Be sure to **plan your way out of harms way!**

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