

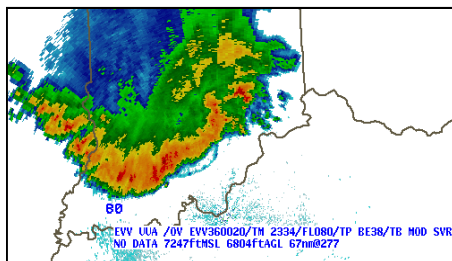
Why Should Weather Concern You?

Weather has a tremendous impact on flights, particularly during the takeoff and landing phases. A specific example: aircraft are sensitive to variations in wind direction and speed during these phases, as is air traffic control which may have to adjust approach/departure flight paths based on the winds. Hazardous weather has been attributed as a cause to 3 out of every 10 fatal aircraft accidents, including thunderstorms, icing, and IFR conditions. In fact, one study found that **63%** of weather related fatal accidents were caused by low ceilings and visibilities.



How We Use Your PIREPS

The NWS uses pilot reports (PIREPS) in our forecast process everyday. Also, a variety of commercial jets transmit continuous temperature, moisture, and wind data during their ascent and descent phases via ACARS (Aircraft Communications Addressing and Reporting System). Your pilot report of weather conditions aloft help us locate areas of enhanced low level wind shear which we incorporate into our TAFs, or where temperatures aloft may deviate from what we expected which can impact precipitation type during the winter time, among many other things. The image to the right shows

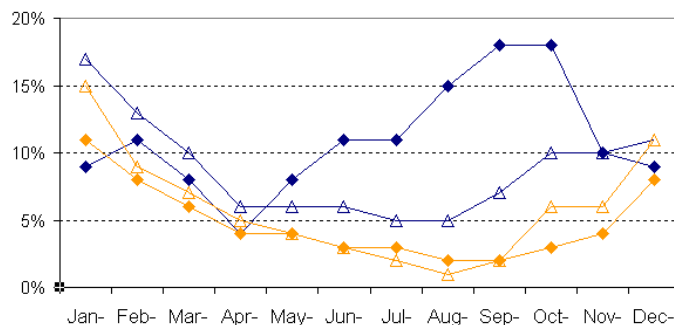
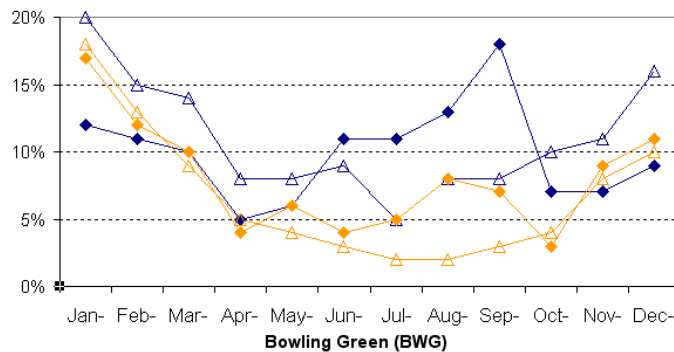
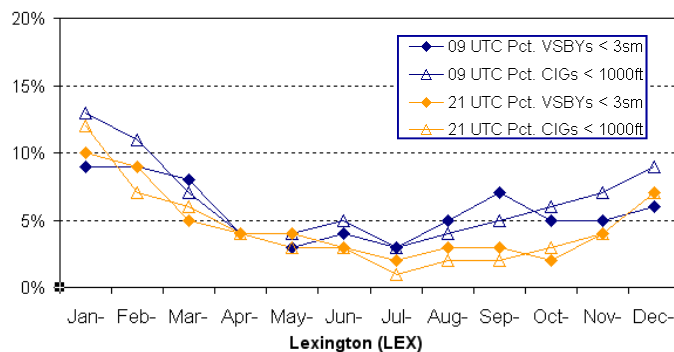


July 13, 2004. Not a surprise as severe turbulence is often associated with thunderstorms.

Local IFR Ceiling and Visibility Climatology

The following charts provide a brief overview of when IFR conditions occur at the three airports our office provides TAF service for. Based on hourly observations from 1973-2003, we calculated the percentage of time that IFR ceilings or visibilities occurred within 10 days of the first of each month. This was done for two times per day, 09 and 21 UTC, representative of the early morning and the late afternoon. Two things are clear: 1) IFR conditions are more likely in the winter months, December through February. 2) There is a secondary peak in low visibilities during the early morning centered on September 1st.

Louisville International (SDF)



National Weather Service
National Weather Service
Aviation Services
Aviation Services



Talk to Us - Contact Information

Telephone: 502.969.8842 or 502.968.2676 (Mon. - Fri. only)

Mail: 6201 Theiler Lane, Louisville, KY 40229

Email: w-lmk.webmaster@noaa.gov

Website: <http://www.crh.noaa.gov/lmk>

Contacts: Joe Ammerman - aviation focal point
Chris Smallcomb - aviation assistant
John Gordon - meteorologist in charge



Who We Are: The National Weather Service (NWS) is part of the U.S. federal government. We are under the Department of Commerce and National Oceanic and Atmospheric Administration (NOAA). The NWS costs each citizen roughly \$4 per year. There are 121 weather forecast offices (WFOs) across the U.S. and its territories.

NWS Louisville History: A Weather Bureau presence was first established in Louisville, Kentucky on September 11, 1871 in the Customs House and Post Office Building at Third and Green Streets. Observations were started on that date by U.S. Army Personnel. On February 23, 1993, the office moved from the International Airport, where it had been since 1947, to where it is today in the southern suburbs of Louisville.



How We Serve Aviation

Our offices primary aviation responsibility is to issue the Terminal Aerodrome Forecast (TAF) for Louisville (SDF), Lexington (LEX), and Bowling Green (BWG; example below).

These TAFs, issued four times daily and updated as

FTUS80 KBWG 141730 BBA
KBWG 141724Z 141818 17012KT P6SM VCSH SCT040 OVC050
FM0000 16008KT P6SM OVC050
FM0400 17007KT 4SM -SHRA BR OVC020
FM1000 15008KT 3SM -SHRA BR OVC010

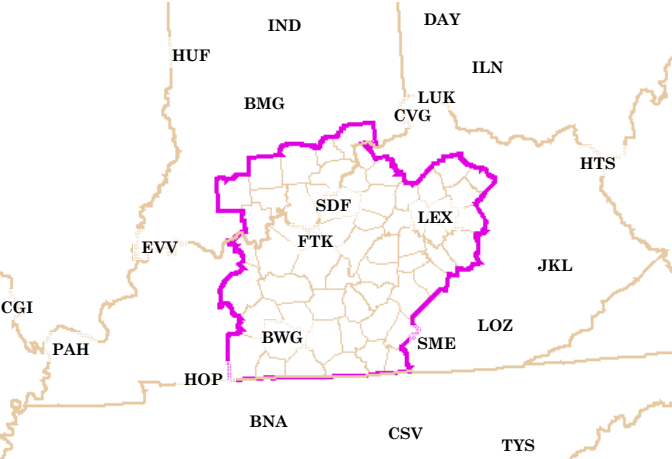
needed 24/7, include information on wind speed and direction, visibility, weather, cloud coverage and heights, and low level wind shear (if needed). A map of TAF sites in the vicinity is shown to the right.

TAFs are used not only by pilots, but a variety of federal aviation entities such as local ATC, TRACON, and en-route centers. TAFs are also used to help allocate resources, such as deicing fluid during the winter time.

Some NWS offices also issue route forecasts called TWEBs (Transcribed Weather Broadcasts), although the Louisville office does not. We also gather critical weather information for investigators in the event of an aircraft incident or crash. NWS offices are not permitted to give formal pilot briefings, though you are welcome to call our office to inquire about general weather conditions or to discuss a TAF.

We issue frequent area forecast discussions (AFD) and hazardous weather outlooks (HWO). While these products examine a broad spectrum of weather, aviation interests may find them useful in planning ahead and

Map of TAF Sites in our Vicinity



TAFs can be viewed in real-time at: <http://adds.aviationweather.gov>. The Louisville forecast office's area of responsibility is noted in purple. The FTK (Fort Knox) and HOP (Fort Campbell) TAFs are issued by the military.

understanding the forecast weather situation. The HWO, for example, will highlight periods when thunderstorms or winter storms are expected in the next seven days. This information is readily accessed on our website which is listed to the right.

The NWS Aviation Weather Center, located in Kansas City, handles weather phenomena aloft such as icing and turbulence, since these

occur on a much larger scale than the typical field office area of responsibility. The AWC issues the SIGMETs and AIRMETS for thunderstorms, low ceilings and visibility, turbulence, icing, and volcanic ash. You can access realtime forecast information from the

What is the difference between an AIRMET and a SIGMET? AIRMETS are issued for moderate icing, moderate turbulence and low level wind shear (LLWS), IFR conditions and mountain obscuration. SIGMETs are issued when icing and turbulence become severe or worse, along with instances of volcanic ash. A special category of SIGMET, called the convective SIGMET, is issued for areas of thunderstorms.

If you would like more information on aviation weather or would like us to *speak to your group*, please contact us!



Freezing Rain or Sleet? Both are hazardous to aviation operations, but what is the difference? Freezing rain occurs when there is a layer of well-above freezing air at roughly 5,000 feet AGL overlying a cold (sub-freezing) surface. Sleet, an even more rare precipitation type, occurs when this warm layer aloft is just above freezing (0.1 to 1.5°C).

Voice Dial-In Numbers for ASOS/AWOS Weather

**** ASOS SITES ****

BOWMAN FIELD LOU.....502-473-0693
BOWLING GREEN BWG.....270-843-8136
EVANSVILLE IN EVV.....812-426-2174
FRANKFORT FFT.....502-227-5087
JACKSON JKL.....606-666-2794
LEXINGTON LEX.....859-281-5700
LONDON LOZ.....606-877-1699
PADUCAH PAH.....270-744-6719
STANDIFORD FIELD SDF.....502-367-1492

**** AWOS SITES ****

BARDSTOWN APRT	KBRY	502-348-1867
CLARK CTY APRT/JEFFERSONVILLE	KJVV	812-246-1278
DANVILLE/STUART POWELL FIELD	KDVK	859-854-0058
DUBOIS CTY/HUNTINGBURG	KHNB	812-683-4003
ELIZABETHTOWN APRT	KEKX	270-763-6433
FRENCH LICK APRT	KFRH	812-936-2252
GLASGOW MUNI/MOORE FIELD	KGLW	270-678-5787
MADISON INDIANA APRT	KIMS	812-866-1798
RUSSELL COUNTY	KK24	270-343-5556
SCOTT CO./MARSHALL FLD	K27K	502-867-1564
TAYLOR COUNTY(CAMPBELLSVILLE)	KAAS	270-789-1985



Websites of Interest

NWS Louisville homepage: weather.gov/louisville/
Aviation Weather Center: www.aviationweather.gov/
FAA ATC Delays: www.fly.faa.gov/ois/
FAA AWOS Information: www.faa.gov/asos/
NWS ASOS Information: www.nws.noaa.gov/asos/



Comparison of ASOS and AWOS

ASOS stands for Automated Surface Observing System. AWOS stands for Automated Weather Observing System. Most automated observing platforms are placed near the runway touchdown zone at the airport, where crucial aviation weather parameters are needed the most. There are slight differences between ASOS and AWOS stations, and there are also varying levels of AWOS equipment. Most sensors report cloud coverage and height, temperature, dewpoint, density altitude, barometric pressure, and wind direction, speed, and gusts. More advanced AWOS have precipitation type sensors. ASOS has the advanced AWOS components, plus a freezing rain sensor and lightning integration for thunderstorm detection.



Ice accumulation on the Lexington ASOS visibility sensor during the historic ice storm of February 2003.