

ANNUAL SLCDA FALL GA BBQ IS THIS MONTH

The Salt Lake City Department of Airports (SLCDA) will host the tenth annual General Aviation (GA) Barbeque at South Valley Regional Airport (U42) in West Jordan, UT on Saturday, September 21st from 1:00 until 3:00 p.m. in the Leading Edge Aviation FBO hangar.

All Star Fire Protection has agreed to inspect and service fire extinguishers for a \$15.00 fee between 11:00 a.m. - 2:30 p.m. on the FBO apron south of the venue hangar. SLCDA will provide food and entertainment for GA tenants and family members.

LOOK NO FURTHER FOR A GOOD REASON TO FLY

Angel Flight West is a nonprofit organization whose mission is to arrange free air transportation in response to healthcare and other compelling needs.

By joining, you can use your pilot skills to help people reach treatment they can't get at home when other transportation options don't work due to cost, distance or immune suppression

You can call or email now to see how you can help: contact Steve Bollinger, Utah AFW Wing Leader at steveb@tvspec.com or phone (801) 455-4009 or; contact Joanne Brattain, Utah Outreach Coordinator Joanneross1120@msn.com or phone (435) 327 1303

To learn more about Angel Flight West visit the website www.angelflightwest.org www.facebook.com/angelflightwest



WINDSHEAR

Wind variations at low-altitude have long been recognized as a serious hazard to airplanes during takeoff and approach. These wind variations can result from a large variety of meteorological conditions such as: topographical conditions, temperature inversions, sea breezes, frontal systems, strong surface winds, and the most violent forms of wind change—the thunderstorm and rain shower. Several terms are used when discussing low altitude wind variations. These terms are defined as follows:

Windshear - Any rapid direction or velocity change in wind.

Severe Windshear - A rapid change in wind direction or velocity causing airspeed changes greater than 15 knots or vertical speed changes greater than 500 feet per minute.

Increasing Headwind Shear - Windshear in which headwind increases causing an airspeed increase.

Decreasing Headwind Shear - Windshear in which headwind decreases causing an airspeed loss.

Decreasing Tailwind Shear - Windshear in which tailwind decreases causing an airspeed increase.

Increasing Tailwind Shear - Windshear in which tailwind increases causing an airspeed loss.

In an examination of 51 airplane windshear-related events, the FAA realized that in order to avoid further windshear encounters, pilots must learn to recognize conditions producing windshear.

Two out of every three windshear events were related to convective storms. For this reason, the pilot's primary focus should be directed toward windshear associated with convective weather conditions, which is thunderstorms, and in particular the most hazardous form of thunderstorm related windshear, the microburst.

There are two basic types of thunderstorms... airmass and frontal. **Airmass thunderstorms** appear to be randomly distributed in unstable air and develop from localized heating of the earth's surface. The heated air rises and then cools to form cumulus clouds. As the cumulus stage develops precipitation forms in higher portions of the cloud and then falls. Precipitation signals the beginning of the mature stage and presence of a downdraft. After approximately an hour, the heated updraft creating the thunder-storm is cut off by rainfall. Heat is removed and the thunderstorm dissipates. Many thunderstorms produce an associated cold air gust front as a result of the downflow and outrush of rain-cooled air. These gust fronts are usually very turbulent and can create a serious threat to airplanes, especially during takeoff and approach.

Frontal thunderstorms are usually associated with weather systems like fronts, converging winds, and troughs aloft. Frontal thunderstorms form in squall lines, last several hours, generate heavy rain and possibly hail, and produce strong gusty winds and possibly tornadoes. The principal distinction in formation of these more severe thunderstorms is the presence of horizontal wind changes (speed and direction) at different altitudes in the thunderstorm. This causes the severe thunderstorm to be vertically tilted. Precipitation falls away from the heated updraft permitting a much longer storm development period. Resulting airflows within the storm accelerate to much higher vertical velocities which ultimately result in higher horizontal wind velocities at the surface (remember takeoff and landing).

The downward moving column of air, or downdraft, of a typical thunderstorm is fairly large, about 1 to 5 miles in diameter. Resultant outflows may produce large changes in wind speed.

Though wind changes near the surface occur across an area sufficiently large to lessen the effect, thunderstorms always present a potential hazard to airplanes. Regardless of whether a thunderstorm contains windshear however, the possibility of heavy rain, hail, extreme turbulence, and tornadoes make it critical to always avoid flight in or near thunderstorms.

HELPFUL POINTS OF CONTACT

For General Aviation operations, facilities maintenance, aviation newsletter, airfield, and SLC Title 16 questions contact: Steve Jackson, SLCDA General Aviation Manager, (801) 647-5532 or e-mail at steve.jackson@slcgov.com.

For hangar lease and repair questions: Matt Jensen, Airport Properties Specialist at (801) 575-2957 or e-mail him at matthew.jensen@slcgov.com.

For aviation security questions call: Connie Proctor at (801) 575-2401.
For gate access problems call: Airport Control Center at (801) 575-2401.

For emergencies call: at SLCIA, (801) 575-2911
at TVY or U42, 911 then (801) 575-2911

For other GA information call the GA Hotline: (801) 575-2443

Powerful downdrafts—known as **microbursts** can occur anywhere convective weather conditions such as thunderstorms, rain showers (including virga) occur. Observations suggest that approximately five percent of all thunderstorms produce a microburst. Downdrafts associated with microbursts are typically only a few hundred to 3,000 feet across. When the downdraft reaches the ground, it spreads out horizontally and may form one or more horizontal vortex rings around the downdraft. The outflow region is typically 6,000 to 12,000 feet across. The horizontal vortices may extend to over 2,000 feet above ground level (AGL).

Microburst outflows are not always symmetrical. Therefore, a significant airspeed increase or may not occur upon entering the outflow, or it may be much less than the subsequent airspeed loss experienced when exiting the microburst.

More than one microburst can occur in the same weather system. Pilots are therefore cautioned to be alert for additional microbursts near the ground due to several bursts being embedded within one another. Conditions with these vortices may produce very powerful updrafts and roll forces in addition to downdrafts.

IT IS VITAL TO RECOGNIZE THAT SOME MICROBURSTS CANNOT BE SUCCESSFULLY ESCAPED WITH ANY KNOWN TECHNIQUES! Even windshears which were within the performance capability of the aircraft are known to have caused accidents

Lessons Learned - Analysis of past windshear accidents and incidents teaches valuable lessons regarding windshear recognition and flight path control. Engineering studies and flight simulator evaluations have been conducted as well as gathering additional information. The resulting lessons learned form a basis for recommended precautions and techniques. The primary lesson learned is that the best defense against windshear is to avoid it altogether. This is especially important because shears will exist which are beyond the capability of any pilot or airplane. In most windshear accidents, several clues (LLWAS alerts, weather reports, visual signs) were often present that should have alerted the flight crew to the presence of a windshear threat. In all instances, however, these clues were either not recognized or not acted upon. Flight crews must seek and heed signs alerting them to the need for avoidance.

Other lessons were also learned regarding windshear recognition and pilot techniques should the avoidance process fail. These lessons are summarized as follows:

- Recognition of windshear encounter is difficult and is usually complicated by marginal weather.
- Time available for recognition and recovery is short (as little as five seconds).
- Flight crew coordination is essential for prompt windshear recognition and recovery.
- Flight path must be controlled with pitch attitude (unusual stick/yoke forces may be required as a result).
- Lower than normal airspeeds may have to be accepted to counter lift loss

Windshear encounters which have resulted in accidents or incidents fall into three categories: an encounter during takeoff after liftoff, an encounter during takeoff on the runway, and an encounter during approach.

Do not trifle with or fail to respect the power and danger of thunderstorms and their associated windshear and micro burst winds. Monitor the AWOS/ATIS. Heed control tower cautions and advisories. Ask other pilots in the pattern at non-towered airports if they have experienced unusual winds at the airport recently. Observe weather conditions and make go/no go decisions based on current and near-time conditions. Finally, if it just does not “feel right” it probably isn’t. Delay your flight until conditions improve or cancel it altogether and live to fly another day. – FAA Pilot Windshear Guide.

SLCDA GA NEWS ELECTRONIC OPTION

If you would like to receive the Salt Lake City Department of Airports’ monthly general aviation newsletter by e-mail, send a request including your current e-mail address to: steve.jackson@slcgov.com .

UPCOMING EVENTS AND NEWS

Leading Edge Aviation (LEA) at South Valley Regional Airport (**U42**), West Jordan, UT and at Logan – Cache Airport (**LGU**) hosts multiple events each month including breakfast fly-ins, dinners, and informative classes.

For more information about Leading Edge events, visit: www.leaviation.com .

EAA 23, the Utah Chapter of the **Experimental Aircraft Association** will hold its monthly meeting on Friday, September 13th at 7:00 p.m. at the Civil Air Patrol Building, 640 North 2360 West at Salt Lake City International Airport (**SLC**). Contact Shawn.Crosgrove@msn.com at (801) 568-2571, or visit the EAA website at <http://www.eaa23.org/> for more information.

Wendover Airshow Cancelled

The 2013 Historic Wendover Airfield Air Show (**ENV**) scheduled for September 21 has been cancelled.

AUGUST FAA PILOT SEMINARS

Upcoming activity and seminar information is available at: www.faasafety.gov under the “Activities, Courses & Seminars” tab or contact Rick Stednitz, FAA Safety Program Manager at (801) 257- 5073.



Safe flying and blue skies!