



### GA BBQ

The annual SLCDA sponsored General Aviation Barbeque at Airport #2 was held in Mark and Terry Losee's Alta Aircraft Maintenance hangar on Saturday September 27, 2008. Participation was great and attendees enjoyed good food, good company, and great blue grass music.

### U42 CONSTRUCTION

U42 utilities infrastructure construction is nearly complete. The construction included utility infrastructure for storm water, sewer, electrical, natural gas, and communications conduits. A drawing of the affected area is posted at [http://www.slcairport.com/general\\_aviation.html](http://www.slcairport.com/general_aviation.html), [www.ugaa.org](http://www.ugaa.org) and the [www.uaoa.org](http://www.uaoa.org) websites.

### ELECTRONIC GA NEWS

We have had a few folks sign up to electronically receive a monthly copy of this newsletter. If you would like to be on the electronic mailing list, send an e-mail a request with the e-mail address to which you'd like the monthly newsletter sent to [steve.jackson@slcgov.com](mailto:steve.jackson@slcgov.com)

### NEW MILLION AIR HANGAR AT SLC

Million Air-Salt Lake City continues to expand its facilities with the acquisition of an aircraft hangar at its corporate headquarters at the Salt Lake City International Airport. The new hangar is the former Skaggs hangar that housed the Westminster flight training program. It provides additional office and aircraft storage space, bringing Million Air-SLC's total hangar space to over 280,000 square feet.

### ALL ABOUT FUEL

Reprinted from FAA Safety Information

The introduction of turbine-powered aircraft into the civil aircraft fleet during the 1950's caused many changes in the marketing of aircraft fuels. As the air carrier and military fleets were converted to turbine-powered aircraft, the demand for aviation gasoline (avgas) decreased drastically. Aviation fuels now represent a relatively small portion of the petroleum industries' by-products and therefore the production of avgas in multi-grades is no longer economically feasible. During the past two decades, we have seen 91/96, and 115/145 octane fuels disappear from the market. In 1971 the oil companies began development of a single grade avgas that would meet the needs of all reciprocating powered aircraft.

#### 80/87 vs. 100LL

When the 80/87 began to disappear from the avgas market and 100LL (blue tinted) was introduced to take its place, operators expressed concern about the service life expectancy of their low compression engines. Some operators experienced accelerated exhaust valve erosion and valve guide wear from the use of highly leaded 100/130 (green) avgas in their engines that were rated to use a minimum grade 80 octane fuel.

The engine manufacturers were quick to provide aircraft owner with amended operating procedures and maintenance schedules which helped minimize the engine malfunctions resulting from the use of high lead 100/130 avgas. Experience of the past twenty years has proven that low compression aircraft engines can be operated safely on 100 low lead avgas without difficulty, providing they are operated and serviced in accordance with the approved aircraft owners' manual or other officially approved document.

#### Automotive gasoline

Leaded automotive gasoline (not much of it still around) is not recommended as a substitute for aviation gasoline because of the differences in properties and composition of the two types of fuel. Regular leaded automotive gasoline may cause pre-ignition and detonation, vapor lock, and sticking or burning valves when used in aircraft engines. Lead-free automotive gasoline, however, has been extensively tested in aircraft equipped with low compression engines that use low octane fuel by the Experimental Aircraft Association and other organizations. The Federal Aviation Administration (FAA) has issued supplemental type certificates (STC) to these organizations permitting the use of unleaded automotive gasoline of 87 minimum antiknock indexes per ASTM specification D-439. Each make/model aircraft shall be modified and operated in accordance with the instructions, limitations, and procedures contained in the STC when unleaded automotive gasoline is used.

#### Placards-type of fuel

Be sure you get the type of fuel that is specified. Federal regulations require that all aircraft filler openings must be marked with the word "fuel" and the minimum fuel grade for reciprocating powered aircraft, or the permissible fuel designation for turbine powered aircraft. Even these requirements do not rule out the possibility of being serviced with the wrong type of fuel. Pilots should be particularly cautious when being serviced at facilities that provide turbine fuel as well as avgas. Turbine or jet fuel is detrimental to the reciprocating engine and even minimal use of avgas can severely damage turbine engines. Therefore, it is imperative for flight crews to double-check when their aircraft is serviced to assure that they placed upon the pilot by regulation it just makes good sense to be sure. The fuel system sumps should always be drained and checked for contaminants, water, and proper fuel type after each fueling of the aircraft and during preflight inspection. Additives manufactured for automobiles, because their chemical content may not be compatible with the aircraft fuel system cells, seals, etc.

The same is true with lead scavenging additives such as Tricresyl Phosphate (TCP). TCP, for example, has been used successfully to reduce lead fouling of spark plugs in normally aspirated reciprocating engines for several years. However, TCP should not be used in turbocharged or supercharged engines without approval of the airframe manufacturer. TCP must be mixed according to the instructions provided by the manufacturer, Alcor Inc., for maximum effectiveness.

### **Spark plug fouling and how to avoid it**

In most cases spark plug fouling can be reduced or eliminated by simply applying proven operating techniques. For example, low operating temperatures coupled with rich fuel mixtures result in incomplete vaporization of the tetraethyl lead in the combustion chamber causing lead fouling of the spark plugs. Maintaining proper cylinder head temperatures will minimize plug-fouling problems. Be certain that maintenance personnel have installed the spark plugs recommended for the particular engine installation. Have the carburetor idle mixture checked and adjusted appropriately. Use recommended leaning techniques in cruise condition at all altitudes. Avoid low power letdowns, descend with power, and avoid over rich conditions. Carburetors and fuel injectors are normally set slightly rich in the closed throttle position, so it is best to carry a slight amount of power on landing approaches rather than approach with closed throttle. Keep the cylinder temperatures up in the shutdown, advance the throttle to about 1800 RPM for 15 to 20 seconds to clear the plugs and combustion chambers, retard the throttle to about 1200 RPM and shut the engine off immediately with the mixture control. You should not have plug fouling or misfiring on your next startup. As long as you make sure the aircraft is serviced with the proper fuel, check the sumps for contaminants, operate the engine according to the aircraft owners manual and have the spark plugs serviced as recommended... you should not then have plug-fouling problems.

### **Turbine fuel**

Occasionally, aircraft are inadvertently serviced with the wrong type of fuel and in most instances it is because of misleading signs. For example, certain turbo-supercharged reciprocating powered aircraft have paint designs with the word TURBO conspicuously displayed on the vertical stabilizer or on the engine nacelle. Line service personnel have sometimes assumed this to mean turbojet and filled the tanks with jet fuel. Another incident involved an air carrier type aircraft that was originally equipped with reciprocating engines which most operators converted to turbo-props. The service personnel assumed the aircraft was a converted model when it wasn't.

Reciprocating engines may run briefly on jet fuel, but detonation and overheating will soon cause power failure. So beware of getting jet fuel when you need avgas. Avgas is no substitute for jet fuel either. Engine failure caused by running the turbine engine on the wrong fuel may not be sudden, but prolonged operation on leaded automotive gasoline will severely damage the engine by the lead content and differing combustion ranges of the fuel. Time limitations for use of avgas in turbine engines are listed in the airplane or rotorcraft flight manual.

### **Pre-flight action**

The responsibility is yours, the pilot to determine that your aircraft is properly serviced. Check your aircraft before each flight and be sure you have the correct type of fuel. It may save your life. Take the time to inspect your aircraft thoroughly.

- Be sure all of the fuel and oil tank caps and covers are installed and secured properly after you visually check the fuel level. Observe the color and odor of the fuel as you check the tank.
- Draw a generous sample of fuel from each sump and screen drain into a transparent container. Check for the

## **HELPFUL POINTS OF CONTACT**

**For GA operational, facilities maintenance, aviation newsletter, airfield, and SLC Title 16 questions call:** Steve Jackson, SLCDA General Aviation Manager, 647-5532 or e-mail at [steve.jackson@slcgov.com](mailto:steve.jackson@slcgov.com).

**For hangar lease and repair questions call:** Mike Rawson, Properties and Contracts Specialist, at 575-2894 or e-mail at [mike.rawson@slcgov.com](mailto:mike.rawson@slcgov.com).

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

**For emergencies call:** at SLCIA, 575-2405  
at TVY or U42, 911 then 575-2405

**For common General Aviation information call the GA Hotline: 575-2443**

presence of water, dirt, rust or other contaminants. Don't be so frugal as to save the fuel drained from the sumps by pouring it back into the tank. There are people who do. Don't risk the possibility of contaminating the system, get rid of it.

- Check that each fuel tank vent is clear of restrictions; i.e., dirt, ice, snow, insects, bent or pinched tubes, etc.

Time and care spent properly servicing and inspecting your aircraft is invaluable. Always consult a trusted and competent aircraft mechanic before you decide to modify your aircraft or service it with anything other than owners' manual approved parts, procedures, fuels, lubricants, and additives.

Personal responsibility, lower costs and safer flights... not difficult concepts for most competent pilots!

## **UPCOMING EVENTS**

**Leading Edge Aviation** in Ogden (OGD) announces the grand opening of their new facility at Ogden-Hinckley Regional Airport on Saturday 11 October 2008. A free lunch will be served between 11:00 AM and 1:00 PM. Leading Edge also operates facilities at Salt Lake City International and Logan-Cache Airports. They'd enjoy seeing you there!

**Air Center of Salt Lake**, the FBO at Airport #2, is hosting its last-of-the-summer-season Fly-in and Barbeque for pilots, family, and friends at its West Jordan hangar the first Thursday of October between 5:00 and 7:00 p.m. This is scheduled to be the last Fly-in and BBQ event this year.

Dave and company will start them up again next spring. For more information about Air Center and its events, visit [www.aircenterofsaltlake.com](http://www.aircenterofsaltlake.com).

**Utah Jet of Logan** at the Logan Cache Airport is celebrating the grand opening of their new self-serve fuel system, Saturday October 18th from 8:00-11:00 a.m. in the blue hanger next to the new self-serve pump! They will be serving full hot breakfast and the new self-serve will be pumping fuel at a significant discount.

