Dayton Pilots Club

January 2004 | **Next Meeting Wednesday, January 19, 2004** | Chester Harris, Editor
www.daytonpilotsclub.org | **Dayton Wright Brothers Airport at 7:00 PM**

What Makes a Cessna 182 Different

Editor's Note: The information below is adapted from AOPAs Air Safety Foundation Material

Potential in Ohio

Load

The Skylane is known for its large capacity and ability to carry heavy loads, but the 1956 through 1961 models only had maximum gross weights of 2,550 lb, approximately the same as an Archer. That was increased to 2,950 lb beginning in 1970 and again to 3,100 lb in 1981. Don't become overconfident with the "newer", heavier models. If you carry passengers and baggage for a cross-country flight with full fuel tanks, you may be very near the airplane's capacity limit. You may even need to limit the amount you carry. Local flights with an instructor, a couple of flight bags, and full fuel tanks will not be a problem with this aircraft. The maximum useful load for a 1985 Skylane is 1,377 lbs. compared with 975 lbs. for N62RP. Remember that this is a POH number, and will vary depending on the equipment installed in the aircraft. Most Skylanes will have a useful load of approximately 1100 lb. The maximum baggage weight for the C-182R is 200 lb (120 lb forward of baggage door latch and 80 lb aft of it).

Fuel

ASF recommends landing with at least one hour of reserves on board. This means a Skylane with 88 gallons of usable fuel in no-wind conditions, and with a fuel burn of 13.0 gph can fly for approximately 6 3/4 hours total, or 5 3/4 hours with 1 hour reserves. Of course, any wind or nonstandard conditions will alter your calculations for distance.

The C-182 had 71 fuel exhaustion accidents compared to 188 for a comparison group. (Included are 1,314 Cessna 182 accidents and 3,022 accidents of a comparison group, comprised of the following aircraft: Cessna 177 Cardinal, 205, 206, 207; Gulfstream American AA-5; and Piper PA-28.)

Not Quite an SUV

During takeoff, the 435-hour private pilot lifted the Cessna 182 off the 3,200-foot runway at approximately mid-field. The aircraft touched down, then became airborne again before it crashed. Four occupants, 40 gallons of fuel in the 60-gallon tanks, and 380 pounds of cargo had been loaded prior to initiating the flight. The aircraft was estimated to have been at least 210 pounds over its maximum allowable gross weight, and the center of gravity (CG) was estimated to be 1.1 inches beyond the aft limit.

Exhaustion occurs when all tanks are depleted. Fuel starvation occurs when fuel is available but, for any number of reasons, doesn't reach the engine. There were 27 Cessna 182 starvation accidents and 75 in comparable aircraft. Only six of those Skylane accidents were due to improper fuel tank selection or failure to switch tanks, compared to 35 of the comparison group. That may be because Skylanes have a BOTH option on the fuel selector.

Keep track of fuel burn along your flight by using a fuel log. This will help establish

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Safety —Cold Weather & Clear Skies

By Tim Smith

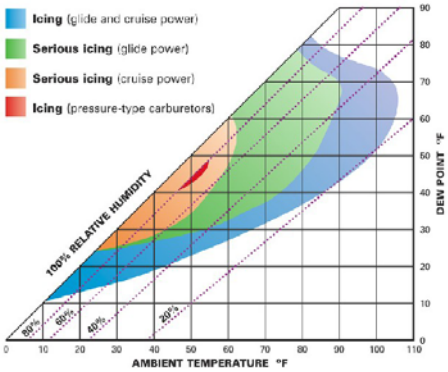
Just because you're flying in the clear doesn't guarantee safety from icing, at least carburetor icing. On November 11, 2001 the pilot of a Piper Cherokee was killed and his passenger seriously injured during a night forced landing after losing engine power.

About three hours into the until-then uneventful night flight, the pilot contacted Mansfield, OH approach control, told them that he was experiencing a partial power loss, and requested to land at Mansfield. Mansfield runway 32 was straight ahead and four miles, and the pilot was cleared to land. According to the passenger, the pilot applied carburetor heat for about ten seconds and with no change in engine operation, returned it to cold and said that he thought they were experiencing vapor lock. Shortly thereafter, the pilot informed Mansfield approach he was going to land on a road, and that the engine had quit.

Investigation revealed that as the flight progressed, the temperature and dew point spreads were getting closer together. At the time of the accident, the temperature in Mansfield was minus one degree Celsius (30.2 F) and the dew point was minus four degrees Celsius (24.8 F).

The NTSB determined the cause of this accident to be the pilot's improper use of carburetor heat, and subsequent forced landing.

The pilot might have been able to prevent this accident had he taken advantage of the free advice in the ASF *Aircraft Icing Safety Advisor*. It says, "At the first indication of carburetor ice, apply full carburetor heat and LEAVE IT ON. The engine may run rougher as the ice melts and goes through it, but it will smooth out again."



How Safe are You?

How many times have you told someone you were a pilot, only to hear the response, “I’ll never get in a small airplane”.

Guess what, in the year 2003; there was a reported 44,888 transportation fatalities. 42,643 were Highway accidents which amounts to 95% of deaths reported in transportation.

Railroads reported 767, while Marine/Boating amounted to 759, and last was 707 were in Aviation.

This brings to mind that if everyone that gets a drivers license needs to go through the hours of training that pilots go through, that number would not be so drastically high.

We might have been trained well, but how many times do we not remember what we have learned.

Minutes of December 15 DPC Meeting

Kevin Chandler

President Greg Halderman called the meeting to order at 7:00pm. Secretary Kevin Chandler read the minutes of the December Trustee meeting. There were no questions. Ken Lawson will chair the election committee for the upcoming Trustee elections.

Trustee Reports

Mike Nolan – Treasurer

Mike completed the November balance sheets. He received a $4,000 bill for gas from Commander Aero dating back to May.

Member Loans - Tom Weber

All member loans have been repaid.

Jerry Falta – Membership

87 active members. Jerry noted that we have three membership whose probation period is up. **Motion:** Jerry moved that members be accepted into full membership: **Second:** Larry Scherr. **Vote:** The motion passed.

Maintenance – Crew chiefs reported

62RP – New engine heater.

06W – COM1 problems has been repaired. A PTT switch was fixed.

01U – Cylinder fixed but it needs to be broken in. Fuel Pressure fixed. Nav lights fixed.

8NG – Annual started today. The cigarette lighter socket was fixed.

78X – No report submitted.

The meeting was adjourned by Greg Halderman at 7:20pm for Pizza and hangar flying.

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New Upholstery in Tennessee

the fuel usage of that aircraft. For a flight at 8,000 feet and 65% power in a 1985 C-182, the zero-wind range (88 gallons/one hour reserve) is 764 nm. (Note: The POH states a fuel burn of 11.1 gph. ASF recommends adding a safety margin. For this example, 13.0 gph was used.) With a 20-knot headwind, the range is reduced to 649 nm, a 115 nm difference. As we all know, it is better to think of fuel in terms of time ratherthan distance.

ASF fuel recommendations

■ Land with at least one hour of fuel reserves.

■ Learn to lean properly and do it on every flight–most engines, contrary to what is taught in many flight schools, may be leaned at any altitude, provided they are below the approved power setting.

■ Add two gallons per hour to book consumption numbers until you have accumulated some experience with that particular aircraft to verify the fuel burn with your leaning techniques. Estimate the fuel consumption for each flight and check that against the actual amount of fuel added. (You really only know how much fuel is on board when the tanks are full unless you stick the tanks, have very accurate fuel logs, or use a fuel management device such as a totalizer.)

■ Avoid planned fuel stops within 100 miles or one hour of your destination. There is great temptation to press on to the destination.

But I Could See the Airport!

Prior to departing on the 600-mile flight, the 350-hour private pilot obtained a weather briefing but did not file a flight plan. The flight lasted for 5 hours and 28 minutes before the engine sputtered and quit four miles short of its destination airport. Endurance calculations based on 11.0 gph and a 600 nm distance, correcting for nonstandard temperature and pressure, revealed a usable fuel burn time of 5 hours and 25 minutes.

Cessna 182 Icing Accidents

Description	Total
Attempted takeoff with snow/ice on wings/airframe.	4
Lost control, turbulence/ice encountered at high altitude.	1
Failed to use ***carburetor heat*** during IMC/icing conditions.	3
Power loss, lack of ***carburetor heat*** use.	7
Power loss on descent due to lack of ***carburetor heat*** use.	6
Power loss on approach, ***carburetor heat*** not used.	15
Stalled/lost control during continued approach in icing conditions.	5
Stall/mush due to ice-buildup on airframe	1

■ For most operations, leaving the fuel selector on BOTH will eliminate the possibility of running one tank dry. However, if a significant load imbalance exists, switch tanks on an hourly basis and set a timer to remind you.

Carburetor and Induction Ice

Cessna 182s are not approved for flight into icing conditions. Some hangar tales tell about the fat wing and how much of a load it will carry. Understand that the aircraft is operating outside of the approved envelope. You have just become a test pilot.

Induction ice blocks the air intake and can cause the engine to stop. Skylanes built after 1997 have fuel-injected engines and thus do not suffer from carb ice, but a blocked intake may cause a problem. The alternate air source should resolve it. Older Skylanes are susceptible to carb icing, as are the aircraft of the comparison group. The use of heat applied at the first indication of carb icing is essential.

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FLIGHT OPS

Aircraft	December Billable Hours & 888 Time			YtD Billable + 888 Time	
	2004	2003	Monthly 888 Time	2004	2003
4201U	6.80	16.75	0.00	280.07	268.60
4506W	12.73	23.75	0.22	284.41	366.71
62RP	13.20	12.69	0.00	234.49	261.40
738NG	3.70	12.50	0.00	229.40	240.50
8078X	0.00	19.10	0.00	245.50	423.60
Totals	**36.43**	**84.79**	**0.22**	**1273.87**	**1560.81**

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Carb ice is not restricted to cold, cloudy days but can occur in clear air, high humidity, and temperatures as warm as 70° F or higher. The temperature drops as much as 70° F within the carburetor's throat. Follow the checklist, use carb heat whenever operating at reduced power, and be suspicious of carb ice when flying in clouds and rain. Many owners have installed a carburetor temperature gauge or ice detector device to warn them of the onset of carburetor icing conditions.

Wind

The maximum demonstrated crosswind component for most Cessna 182 aircraft is 15 knots. Aerodynamically, the aircraft may be able to handle greater winds but most pilots should consider that number as limiting in crosswinds until they are highly proficient in crosswinds and have had the opportunity to explore the aircraft's behavior on a long wide runway.

> The private pilot flew a normal approach in the Cessna 182, 70 mph with full flaps. The airplane crossed the runway threshold at 60 mph. The winds, according to the pilot, were gusty at touchdown. According to the airport manager, the winds were 90 degrees to the landing runway with a speed of approximately 45 mph. On touchdown the airplane lifted off the 1,735-foot runway. The second touchdown occurred with 100 to 150 feet of the runway remaining. The pilot was not able to stop the airplane before traveling off the departure end of the runway where the airplane nosed over.

Landing

Landing is the most accident-prone phase of flight for Cessna 182s and comparison aircraft, with 39 percent and 29 percent, respectively. For the 182, landing hard was the leading transgression. The Skylane had considerably more accidents landing hard than did the comparison group (12.7 percent of pilot-related C-182 accidents, compared to 5.7 percent). This may be due to the heavy feel of the elevator control, especially for pilots transitioning to the Skylane from lighter airplanes. Substantial trim is required during landing, but don't trim so much that you will not be able to handle a go-around. Trimming for 75 knots will require you to hold back pressure during landing, but won't require so much forward pressure on the controls during a go-around.

Note: Improper speed control and a forward CG (full fuel and two occupants) results in bent firewalls being very common during 182 landings, especially for pilots transitioning from lighter airplanes. Hard landing forces are transmitted through the gear and engine support structure to the firewall. ASF recommends a full load checkout as part of your Skylane familiarization. Pre-purchase inspections should include a close look at the firewall.

Vacation side trip to check-out a possibility

Remember to compensate for winds during landing. A tailwind of only four knots will increase landing distance by 20 percent. Include landing distance calculations as part of your preflight and add 50 percent to the book numbers.

Around the Hangars

Engine Heaters

For new members or those who remember previous debates on when to connect heaters, the current rule is that you should leave the heater plugged in ...except when flying the airplane.

Hangar Doors

Now that we know it can snow in Dayton, leave the hangar doors open (until Spring). As we recently confirmed, it is very tough to get the airplanes out when the doors are frozen shut.

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Newsletter articles Due by January 31