PRESIDENTS CORNER

Greetings from my corner of the hangar! Last months guest speaker Lonny McClung from Groen Brothers Gyros in Buckeye brought us up to date on the progress of the remarkable Sparrowhawk Gyroplane. Lonnie explained how the gyro flies and attempted to set the hook for attendees to buy one of his ships. I know quite a few folks were going to take him up on his offer to come out to Buckeye and take an instructional flight to see if gyro flying is for them. Everyone hung around after the meeting we celebrated our Chapter birthday with cake and drinks. Almost as interesting as the gyrocopter presentation our guest speaker did a very informal dvd slide show of his flight around the world in a restored Grumman Albatross as we enjoyed our food and drinks. The pictures were beautiful especially the ones of landing the Albatross at sunrise on Easter Sunday on Easter Island! That was a real sunrise service!

JUNE CHAPTER MEETING

The June meeting of Thunderbird Field EAA Chapter 1217 will be on Thursday June 16th . The time is 7 pm in the Scottsdale Airport Terminal Building. This month's guest speaker will be Robbie Attaway from Attaway Air in beautiful Higley, Arizona. Robbie has built two RV-6's and has formed a company designed to serve the homebuilder here in Arizona.

ATTAWAY AIR

In most cases surfing the internet can have negative impact on building or restoring your project. But if you stroll over to www.attawayair.com you might discover a company that can help you get the most out of building your plane as well as your hard earned dollars.

Robbie Attaway, who happens to be this month's guest speaker, decided to fill a definite need he saw after building two RV-6's and formed a company that supplies and helps out with the tech support after the sale.
Robbie is a dealer for ECI Engines and can help with the assembly of the ECI experimental aircraft engine. This engine uses all certified components so it is virtually a home assembled factory built engine.
Attaway Air also sells Stainless steel wheelpant brackets, billet aluminum stick grips, EXP power distribution busses, Advance Flight System AOA (angle of attack) gauges, and the Advance Control System EFIS engine analyzers.
When not flying around in his purple RV-6 Robbie and his son Rob fly as a Boeing 737 pilots for America West.

Roger Parrish from Chapter 1217 out for a morning flight in his Boeing Stearman

RIDE TO OSHKOSH

Ray Brown is looking for a ride to Oshkosh. He is happy to pay his way and share fuel costs and expenses. If you can help call him at 602-789- 7400 or Stop02@cox.net

ANYONE ABLE TO HELP ?

I am trying to locate a gentleman who possibly was associated with George Owl on a Goodyear race project in 1947 and 1948. The airplane was a high wing racer for Woody Edmondson called "Midget Monocoupe". I don't have the name of this individual but heard he was a member of the EAA chapter in Mesa, AZ. Do you know of this individual? If so, how can I contact him.? If you have some information could you email me, Thanks. Richard Harding richardharding@nc.rr.com

DR. JOE BATTERSBY

As many of you are aware, our beloved "Doc Joe" Battersby has suffered somewhat of a medical disability himself. Having already been slowed down a bit by a couple of fractured vertebrae, he recently had a fall and broke his right arm!

Anyway, he'll be out of commission for a few weeks but still intends to be back in the office July 5th, after a little R&R at his vacation home in Colorado.

The gals in Joe's office have also said that any "Get Well" cards or wishes can be sent to Joe's office and will be forwarded to Joe since they check in on him everyday. The office address is:

1413 N. 16th Street
Phoenix, AZ 85006

Chapter 1217's David Roberts in his 1930 Waco RNF gives a Young Eagle ride to a crippled child

DENSITY ALTITUDE

As summer rolls around it is time to give everyone a refresher course on how to stay alive flying in our hot desert environment. The intent of this article is to give you some insight into what a twenty-year NTSB investigator has learned in his career investigating over 400 aircraft accidents. He has narrowed it down to nine deadly sins, which he said are commonly involved in density-altitude accidents. Nine things pilots either learned and then forgot or didn't learn at all or learned wrong that contributed to the accidents.

DEADLY SIN NUMBER ONE

When climbing out from an airport at which density altitude is a concern, do not climb at the same indicated airspeed you would use at a sea level airport! At sea level, the indicated best rate of climb speed is a higher number than the indicated best angle of climb speed. As density altitude increases, the indicated best rate of climb speed decreases, and the indicated best angle of climb speed increases. The amount of change between sea level and a density altitude of 8,000 feet is typically five to eight knots of decrease in indicated best rate of climb speed, and four to seven knots of increase in indicated best angle of climb speed

There is a really good chance the airplane will get itself out of ground effect and then refuse to climb at that indicated airspeed and simply mush into the ridge. This is a big factor in density altitude accidents. The speculation is that since it is proper to use the same indicated airspeed, while approaching to land, regardless of the density altitude, quite a number of pilots have come to the mistaken conclusion that the same is true during takeoff. NOT SO!!!

DEADLY SIN NUMBER TWO

When departing from airports in an airplane at less than maximum gross weight because of density altitude considerations, do not climb at your maximum gross weight, best rate of climb speed!. In truth, best rate of climb speed (indicated) decreases as gross weight decreases. Depending upon which airplane you fly and how far below maximum gross weight you are operating, best rate of climb speed (indicated) can drop as much as 10 knots or more. (check your pilot's operating handbook.) Attempting to climb at your maximum gross weight best rate of climb speed in a lightly loaded airplane, can take climb performance, which may be poor at best, and make it downright lousy.

If you attempt to climb out of a high density altitude airport at a reduced gross weight while using your sea level, maximum gross weight best rate of climb speed (indicated), you combine Sin One with Sin Two. The result can easily be that you are attempting to climb at a speed that could be 15 knots too fast! Such a mistake can turn minimal climb performance into negative climb performance!! This deadly combination is precisely what is leading to our most common density altitude accidents!

DEADLY SIN NUMBER THREE

A lack of understanding of the significance of true airspeed and its affect on turn diameter is Deadly Sin Number Three. The situation in Deadly Sin Number Three is the need for a course reversal to fly out of a tight, blind canyon situation. The pilot has waited far too long to initiate the turn and now needs to make a tight radius, 180-degree turn without losing any altitude. At the higher density alitude the aircraft will have a radius of turn that is quite a bit larger. If you compare the radius of a turn at sealevel versus one at 8000 density altitude you will find the 8000 fot one is 44% larger at the same indicated airspeed.!

The bottom line is that when pilots delay their escape turn too long, then try to reverse course using a steep, constant altitude turn at very slow speeds, they are asking their airplanes to do something they simply cannot do! All too often the airplanes don't make the turn, they stall and crash into the side of the canyon.

Our advice? Make the turn long before the canyon becomes confined. Make the turn early enough that a shallow bank is all that's necessary to complete the turn.

DEADLY SIN NUMBER FOUR

If you are going to fly through such a valley or canyon you must decide to make the 180-

If you absolutely, positively must fly in the valley, never fly up the valley. You should stay high and familiarize yourself with the terrain before you descend into the high end of the valley and fly down the valley.

DEADLY SIN NUMBER FIVE

Another mistake pilots make is not understanding the effects of density altitude on airplane landing performance. For example, suppose you find yourself in a situation where the field elevation is 8,000 feet MSL, and the temperature is 90 degrees Fahrenheit. The wind is blowing 10 knots and gusting to 18. The surrounding mountains are causing the wind to be quite variable and turbulence is abundant. Your aircraft flight manual recommends an approach speed of 70 to 75 miles per hour. What speed are you going to fly on final, and how will this landing compare to landings under similar conditions at sea level? Fly the same indicated airspeed that you would use at sea level, but remember that 75 mph indicated is 90 mph true in these conditions, so your ground speed is going to be 15 mph faster than at sea level.

Then you want to add one half of the gust factor. In this case add one half of the difference between 10 and 18, or four. The common mistake is to add one half of the 18, or nine. Don't add nine, just add four, but four indicated is five true. So now you're approaching at 95 true. With the same indicated approach speed your ground speed is 20 mph faster than it would be at sea level!

All things being equal, if you have precisely flown your approach at the correct indicated airspeed, your time in the flare will be the same at altitude as it is at sea level. But at altitude, your groundspeed is significantly higher than at sea level and your stopping distance is longer.

So the distance covered during the flare at altitude is considerably more than what you're use to at sea level. Combine this with the fact that most mountain airports are relatively short and often have cliffs, dense forests, or streams at the far end and the problem becomes clear.

degree turn while the valley is still wide enough to complete the turn using less than half of the valley!

DEADLY SIN NUMBER SIX

When departing airports, be aware of your climb gradient. We are all familiar with aircraft rate of climb —it's figured in terms of feet per minute. Climb gradient is figured in terms of feet per mile.

Consider two airplanes, each climbing at 500 feet per minute. But one is climbing at 60 miles per hour, and the other is climbing at 90 miles per hour. Each will climb 500 feet in one minute. But the first will cover one mile during that minute, and the second will cover a mile and a half during the same minute. The first airplane is climbing 500 feet per mile, and the second is climbing only 375 feet per mile.

When trying to out climb rising terrain, you need to think in terms of feet per mile as well as feet per minute.

DEADLY SIN NUMBER SEVEN

Not knowing the aircraft's takeoff and initial climb-out performance numbers is another cause of accidents. Manufacturers give us performance charts to figure required runway length to get off the ground and distance required to out climb obstacles. They take into consideration such things as airport elevation, temperature, headwind component, and type of runway surface.

Just imagine you wanted to depart a dirt strip with a two-degree upslope, a 100-foot tree at the far end, at a pressure altitude of 6,700 feet MSL, and a temperature of 85 degrees. The charts work great—if you have a master's degree in mathematics. The problem is that the mathematical formulas required to determine the performance values for a specific aircraft at a specific airport on a specific day are cumbersome to say the least.

There is one. It is a takeoff-performance calculator that is non-technical and requires no batteries. It looks like an old-fashion slide rule. The "Takeoff Performance Computer" is available from Sporty's Pilot Shop. It is item 2091A on page 45 of the current Sporty's catalog.

Today, there are also electronic calculators and computer programs that can help you calculate your aircraft's performance data. The important thing is to know your aircraft's performance data, especially when you are planning for critical situations involving high-density altitude or short-field operations.

DEADLY SIN NUMBER EIGHT

Using the wrong flap setting for takeoff was identified as another accident cause. Many light general aviation airplanes have a takeoff flap setting other than zero for operations on hard surfaced runways. When manufacturers recommend a takeoff flap setting other than zero (usually between 10 and 20 degrees) they do so to reduce the ground roll. Your use of the recommended flap setting works just fine when operating at near sea-level altitudes.

But keep in mind that for airplanes, there comes a density altitude above which the use of takeoff flaps actually increases ground roll. This is because the thrust available has deteriorated to the point where it is no longer capable of pulling the increased drag (as compared to flaps completely up) efficiently. This is exactly the situation you need to avoid when taking off from a high-density altitude airport.

DEADLY SIN NUMBER NINE

You should know the proper techniques for making obstacle takeoffs and for making soft-field takeoffs in the airplane you are currently flying at the density altitude you are currently contemplating, and you should not combine the two unless your airplane is turbocharged or turbine-powered. There are numerous instructors out there who routinely combine obstacle takeoff techniques with soft-field takeoff techniques to save time during training. Also, it is important to be able to recognize a soft field when you see one. Simply being unpaved does not make it a soft field. Soft field means the tires are sinking into something like mud or plowed earth or snow. Most mountain strips are not actually soft. And, it is a mistake to use soft-field technique when obstacle clearance is a concern. If you are taking off from an airport with rocks, ruts, and serious bumps, you might want to reduce the load on the nose wheel a little, but any more than that is not necessary and will only serve to increase drag and runway used if you increase your angle of attack too much.

For obstacle clearance takeoffs, follow the advice of your airplane manufacturer, which for the vast majority of non-turbocharged airplanes means flaps up and climb at best angle of climb speed for the density altitude.

If you ever find yourself in an actual soft-field situation in which obstacle clearance is a concern and you don't have the performance to fly out of the site, you should seriously consider removing the wings and trucking the plane home.

SAN LUIS VALLEY PILOT'S ASSOCIATION AIR SHOW AND FLY-IN

July 16, 2005 will be this years annual San Luis Flyin and Airshow. All Chapter members are invited to attend. It will be held at the San Luis Valley Regional Airport (KALS) Alamosa, Colorado. Air Show 9:30AM – 12:30PM (Airport Closed)

Features Experimental, Vintage and War Bird aircraft, acrobatic exhibitions, A pancake breakfast is served from 7:30AM to 10:30AM. Lunch will be available. The event is free to the public. Ten gallons of free fuel for 1st 10 experimental arrivals. For more information, contact Paul at (719) 852-9860 (H) or (719) 754-9080 (O).

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WHERE ARE THE THUNDERADS ?

June is the month where are normal ThunderWord Editor Ron Kassik goes on vacation and our abnormal editor , Curtis Clark, has to step in temporarily. Watch for the ads in the July Thunderword.

BIG EAGLES

This month two of our Chapter members have taken new jobs in the airline field. Ryan Kassik has taken a job as a pilot for Skywest Airlines flying the Embraer Brasilia and Steve Whitman will be joining Jet Blue Airlines in the Maintenance Planning Department at JFK Airport. Good luck to both of them and don't forget to write!