

HANGAR ECHOES

EXPERIMENTAL AIRCRAFT ASSOCIATION
CHAPTER 168 DALLAS TEXAS

THUNDER!

By PETE QUORTRUP

If there is an airplane that has captured the imagination of generations of aviators and land lovers alike, it would have to be the North American P-51 Mustang. The looks, performance and combat history of the Mustang have given it a mystique which is unequalled in the history of aviation. The desire of homebuilders to replicate the P-51 has produced both plans-built and kit designs from Loehle, Marcel Jurca, WAR Replicas, Fighter Escort Wings, Jim Stewart and others. Lately, these designs have been sporting high-horsepower auto-engine conversions, giving them not only good performance but producing something close to that "Merlin sound". The idea of building and flying a P-51 replica becomes very appealing.

Mustang lovers in the EAA took note when their June, 1994 copy of Sport Aviation carried an article titled, "The Falconer V-12". In it they learned the details of Dan Denney's plans to produce a 75% scale "Thunder Mustang" powered by a 640 horsepower V-12 engine. Dan Denney? V-12? 640 horsepower!!! Now this was
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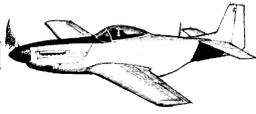
getting interesting! Dan Denney, having sold the Kitfox business, appeared to be working on something that would make building and flying a Mustang replica virtually irresistible. In 1997, the Thunder Mustang debuted at Sun 'n Fun, Oshkosh and several other shows, qualified as an unlimited racer at Reno and sold out its first two production runs. Deliveries began in



The Thunder Mustang in Dallas

December.

In a field of high-performance kit planes that includes such exciting entries as the Legend and the Stewart S-51, what does the Thunder Mustang offer? Dan Denney answers that the mission of his creation is to capture the charisma and mystique of the North American P-51D, to appeal not only to the widespread desire for an accurate Mustang replica, but in doing so to



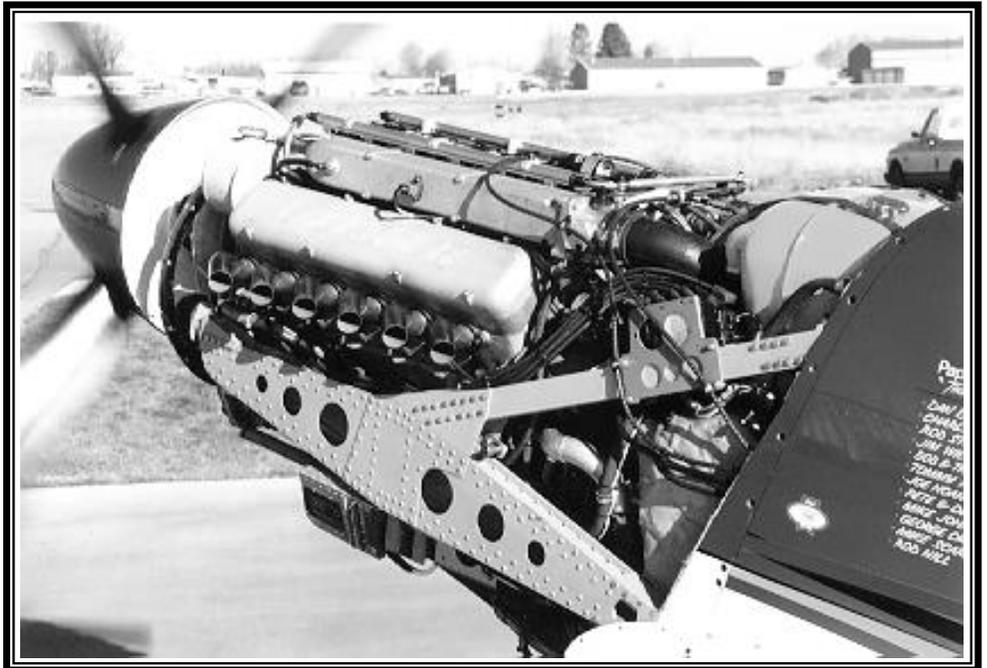
give away nothing in performance to the original at lower altitudes. He plainly states that he wants the Thunder Mustang to have so much of the "aura" and magnificence of the real thing that it will appeal to someone who would own a full-sized P-51. Knowing that those are fighting words to some, Dan realized that he had to set new standards for detail, design, engineering and performance. The Thunder Mustang had to look right, feel right, fly right and sound right.

In the most measurable ways, the Thunder Mustang is clearly up to its mission. The airplane is a practical, modern and very serious option for the "gottahava Mustang" condition. Although it is a kitplane, its major components were engineered to FAR Part 23 standards. And although the Falconer engine

produces 640 horsepower, the airplane was designed for up to 1500 horsepower. With a design Vne of 439 knots, flutter analysis has determined that the Thunder Mustang is flutter-free up to 600 knots. When viewed from any angle, either in flight or on the ground, its looks are flawless except for the reduced wing area. Since the loaded Thunder Mustang weighs considerably less than 75% of the gross weight for which the original wing is sized, its wing area is tailored for high speed and to give a good ride in rough air. The wing airfoil sections are customized derivatives of the wartime NACA 65-series laminar shapes, providing softer stall characteristics and higher lift coefficients with no increase in drag. Modern "no cusp" laminar afterbody shapes are used in the wing and tail sections, giving improved control effectiveness. Combined with the light weight (100 pounds) of the eight foot diameter MT composite prop, these design features pay off. Where the North American P-51 is a handful (foot-full?) on the runway, takeoffs in the Thunder Mustang can be made with full throttle from brake release with rudder to spare. And while rolls at high speed are a two-handed affair in the original P-51, controls in the Thunder Mustang remain crisp, comfortably light and well-harmonized throughout the speed range. With a climb rate of 5500 ft/min, a stall speed of 70 mph, a roll rate in excess of 300 degrees/sec and a top speed of nearly 400 mph, the Thunder Mustang is undeniably a contender performance-wise.

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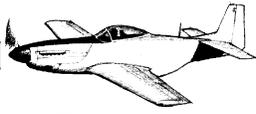
With a truly comfortable rear seat and full dual controls, load limits of +9 and -6 Gs, a generous baggage area, and a 1500 mile range, it is also both practical and useful. For example, a Thunder Mustang owner can single-handedly roll his machine out of the hangar, light the fire and make 300 knots true at altitude while burning 22-23 gallons/hour on the way to a \$100 hamburger in Oklahoma (the same hamburger in the original Mustang would be a little higher). Perhaps the best testament to the airplane was at Reno, where unlimited race crews burn the midnight oil to tweak winning performance from 50 year old machinery. The Thunder Mustang (the only normally aspirated airplane ever to qualify as an unlimited racer at Reno, where density altitudes exceed 6,000 feet) qualified with a lap



The Falconer V-12

speed of 338.271 mph, placing 28th out of an original field of 45 unlimited entries. In addition to the qualifying runs, at the end of every day the airplane would fly a demonstration routine before being parked for the night. Only routine maintenance was required.

The Thunder Mustang is a fast-build, very complete kit which includes the Falconer V-12 engine, the four-blade MT prop, and all components needed to build a flying airplane. Denney's Papa-51 Company originally sold the airplane only as a single kit to ensure that every Thunder Mustang would be powered by the Falconer engine. Responding to requests that the kit be divided, however, the company recently announced the availability of wing kits so customers can now buy and build



as they go. The fuselage kit will include the engine, prop and other components. Most airframe parts are made of oven-cured and vacuum-bagged carbon fiber (graphite) with Nomex honeycomb cores. Although expensive, carbon fiber's properties give very high strength with light weight and thus it has become the material of choice for designers of high-performance aircraft from Nemesis to the F/A-18 and the Boeing 777. As for tooling, Dan's philosophy there has been the same as for the rest of the project, namely to "do it right". For example, the molds are made of carbon fiber rather than fiberglass, so that the part and the mold expand and contract at exactly the same rate during manufacture. The parts produced in these molds have proven to be extremely accurate, ensuring a perfect fit without modification. This pays off for the builder, because in combination with the kit's unique joggled and indexed construction method, the accuracy of the parts will save literally hundreds of hours of building time. The builder is able to "dry assemble" most of the aircraft using clecos for fit-up and systems installation and then when ready to close up a structure, the composite parts are bonded together using a structural adhesive. There are no wet lay-ups in the entire building process. As a Glasair builder (itself a super kit), I have a special appreciation for these construction features of the Thunder Mustang. This is the kind of kit that should be expected by anyone who is looking at investing what it takes to get an airplane like the Thunder Mustang flying.

So Dan Denney's creation can reasonably be viewed as a modern and practical solution for the builder/pilot who needs a Mustang (most of us?). But has he succeeded in capturing that mystique? Mustang drivers will find much that is familiar among the details such as the tailwheel that steers six degrees when locked and which unlocks with forward stick movement, the canopy crank and emergency release lever and even the rudder pedal adjustment mechanism (both seats), all of which operate like the full-sized Mustang. And the Thunder Mustang owner will be just as proud of his airplane with the cowling off since that V-12 installation, from the oil tank to the gear box just "looks right". But the real answer can only be subjective, since mystique, like beauty, is in the eye of the beholder. The airplane must truly be seen (and heard) in person to be appreciated. So if you haven't seen it yet, let the Thunder Mustang be another reason for you to make it to one of the airshows in 1998. Those of us who saw the Thunder Mustang in the fly-by pattern last year will be treated to an even better demonstration of the airplane's abilities in 1998 since Papa-51 pilot Dale Clarke is preparing to fly an aerobatic routine in the daily airshows this year. Come and judge for yourself if the Thunder Mustang has the mystique of the original. If you still haven't decided after seeing it up close, then close your eyes and listen!

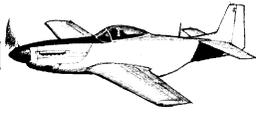
Thunder Mustang and Chapter 168

Chapter 168 has invited Dan Denney to bring the Thunder Mustang to Dallas to be a part of our program at the

March 10th meeting and the Cavanaugh Flight Museum has been generous enough to offer their facilities as a meeting location so that we can all see the airplane. As well, the Thunder Mustang will likely be in the Dallas area for a few days giving demonstration rides to prospective customers. Dan's visit promises to be one of the highlights of our spring agenda and should help us all get motivated for Sun 'n Fun. Make a note of the change from our normal meeting date (second Tuesday instead of the first) and the different meeting location and plan on arriving early to get a good seat. See you there!

A Brief Introduction

For those of you who know me as "one of those Glasair guys" or whom I have not yet had the pleasure of meeting, let me introduce myself. I have been a member of Chapter 168 since 1991 and indeed I have been building a Glasair III for so long that when someone comes into my hangar and asks "What's that smell?", I respond by asking "What smell?". After meeting Dan Denney at Oshkosh in 1995, it dawned on me that I was looking at the proverbial "ground floor opportunity" and I became one of Papa-51's investors. Since then, I have been rewarded with association with one of the neatest guys in aviation and with the most exciting kitplane ever. I earn my keep flying for Northwest Airlines but when I am not at work you can find me with my Glasair parts in T-hangar #6, Bucker Lane at Aero Country airport. Visitors are always welcome. Look for the "Glasair Parking Only" sign and the pickup which is painted (what else?) Thunder Mustang Green.



VELOCITY FIRST FLIGHT

By Greg Otto

On November 8, 1997, Velocity N150GH made its first flight from McKinney(TKI) airport with builder Greg Otto piloting. Prior to the first flight, the usual taxi tests were performed. Using differential braking took several taxi runs to get used to. The final taxi test entailed getting the Velocity up to near lift-off speed of 55 knots and rotating the canard off the ground to check canard control effectiveness. However, once at 55 knots, the nose would not lift up. Getting to 55 knots was very quick and I had to pull throttle to keep it from accelerating any higher. With airspeed starting to bleed off and runway getting shorter, knowing that at 65 knots it would lift off, I sped up to 60 knots. It still would not rotate. I pulled throttle and returned to the hangar.

After checking with the Velocity Factory and verifying measurements, I gave fellow Velocity builder, Michael Pollack, a call whereupon he informed me that he had encountered this condition and that the envelope to rotate without lift-off was much shorter than 55-65 knot range, but rather 62-65 knots. At this point, I decided to forego any more taxi tests as it wasn't doing my freshly overhauled ECI cylinders any good. With the help of an airport buddy and instructor, Gerhard Deffner, I was drilled thoroughly on engine out procedures simulating Velocity glide speed/ratios in a C152. The first flight takeoff was much like the high speed taxi test in that it accelerated quickly and before I knew it, the plane had reached 75 knots and I quickly pulled back on the stick and the plane left off the ground. The plan was to climb for 2 minutes at full throttle and 80 knots to promote cylinder break-in. I found myself climbing at 100 knots with VSI at 1500. Not being sure I wanted to climb any faster, I raised the nose and set it at 80. After reaching 4000' MSL, I continued doing figure 8's over the airport for the next hour. During this time, several squawks were observed with the most noticeable being a lack of sufficient rudder

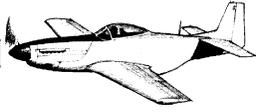
control which wasn't allowing me to straighten the nose out on simulated landings at 4000'. Also, I had trouble staying in a tight figure 8 over the airport as the speed required for engine break-in came in at around 150 knots. The flight lasted 1 hour and as I descended for landing the rudder problem seemed to disappear. The landing was a little hot coming at 85 knots versus the desired 75 knots. Even so, it landed exactly as I had remembered while doing a factory checkout a year earlier. The engine ran superbly. The plane has several



Greg Otto's Velocity at McKinney

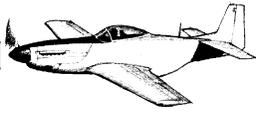
hours on it and I am continuing to work out the minor squawks.

The decision to build a Velocity came from an unexpected need to replace the family C182 after it was destroyed in a catastrophic night engine failure. At the time, I was working on a Varieze project with the help of Leon Rausch. After deciding to build instead of purchase, the next step was to get my dream machine, the RV6, in a 4-place version. I called and tried to convince them at Van's to extend the cockpit headroom over the baggage area to accommodate a jump seat like a Cessna. Everyone knows the outcome of this, No Sale! At the time, there were a limited number of 4 place kits that would meet my requirement to increase speed, distance, and endurance over the C182. An employee of Pete Huff, Leighton Mangels, showed me Pete's White Lightning and recommended I look into the Velocity as it had more cockpit room for my large frame. I got the literature and scheduled a trip to Florida to take a test ride. The test ride was all it took to convince me that this was the plane for me and I could use a lot of the Varieze



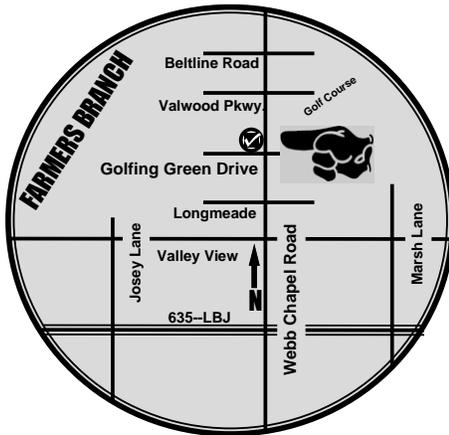
skills to decrease construction time. The kit said 800 hours build time. I told the wife it would take me a year of hard work. Well, it took 6 ½ years and a lot more than 800 hours. I took time off from work for 2 months one year, 5 months another year and 5 months another year over the course of the project. It is really a project better done with the help of a partner or two.

The plane is a Velocity FG Std. This is the original Velocity fixed gear with single canopy door. It uses the Lycoming IO360 engine. The engine was overhauled by Greg Berg at Smoky's and the cylinders were done by ECI. Tony Gerome, who used to work for Bela, assembled the cylinders on the engine for me. The rest of the engine work was done with the help of Bob Davis, an A&P mechanic at McKinney Exec Air. The static system check was done by Brian Wriston, Wriston Aviation. The weight and balance was done by Chuck Roberts, EAA 168. Other people who provided invaluable help/guidance were Tom Moe, Mel & Ann Asberry, Richard Funk, Tom Ferraro, Pete Huff, and Leon Rausch. Additional thanks go to Mel Asberry, Owen Bruce, Brownie Seals, and Steve Marchand who provided technical counseling/flight advising during various stages of construction.



February 3rd Chapter Meeting

Our February 3rd (first Tuesday) Meeting will be held at the Farmers Branch Library, located on the Northwest corner of Webb Chapel and Golfing Green Drive. The meeting will be held in the auditorium and will begin at 6:30 p.m. and finish at 9:30 p.m. Please plan now to attend!

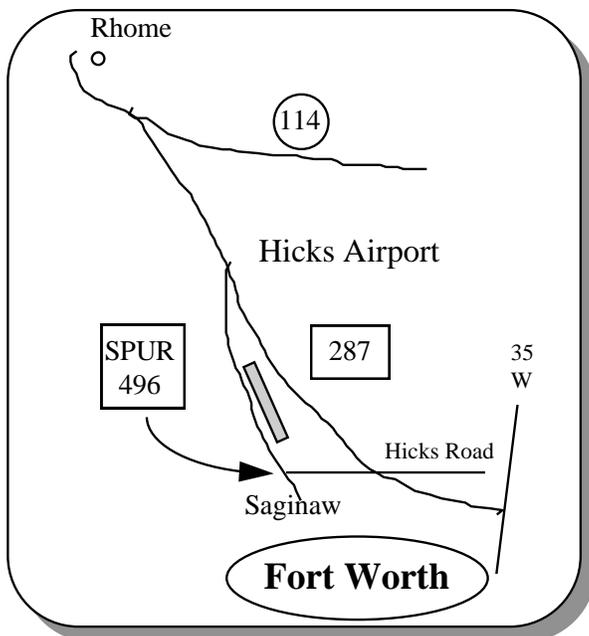


Our January meeting will feature Jan Collmer. He will speak on aerobatic show flying. Jan is an exceptional speaker who can tell us what's going on with the air show community.



February 7th Fly-In / Drive-In

The January Fly-In will be at Hicks Field. We will meet at the restaurant for lunch around 11:15AM..



February 12th Director's Meeting

The February Director's Meeting will be from 7:00 - 8:45 PM at the Farmers Branch Library on the 12th. The following is a report by Jerry Mrazek for Tom Emerson from the January meeting.

1. Jan Collmer will be our guest speaker at the February meeting. Jan is a member of our chapter and will speak on aerobatic show flying. Jan has offered a ride in his aircraft and this will be the door prize for February.
2. Jerry Mrazek introduced the idea of sending one of our flight advisors to a three-day course on flight testing techniques for homebuilt aircraft at Oshkosh in February. After much discussion, it was decided to wait for a later offering of this course so we can have time to get more familiar with its content.
3. Tom Ferraro and Pete Huff presented a proposal for a McKinney airshow/community event on May 16 this year. They wanted our chapter to take over the young eagles portion of the event. The board expressed general approval of the idea and more details will be made available as they are developed.
4. Our chapter has agreed to support a Boy Scouts/Young Eagles activity at Alliance AP on 24 January. Jim Quinn has been coordinating this. We will be working with Chapter 661 on this activity.
5. Jerry Mrazek and Monroe McDonald will be going to Abilene on Saturday, January 17, to participate in a planning meeting for the Southwest Regional Fly-in.
6. Clair Button submitted a list of 13 willing candidates for the Board of Directors elections that will occur in March.

February 24th Newsletter Assembly

The March issue of Hangar Echoes will be assembled at Ann and Bo Bauerais' home February 24th starting at 7:00 PM. The address is 5208 Meadow Ridge Circle, McKinney (west side), TX 750752. Phone 972 569-2844. This will give us an opportunity to have Bo bring us up to date on his Glasair III. Check it out in the last years July 1997 Hangar Echoes.

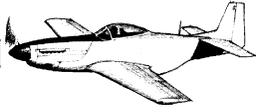
Calendar of Events

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|----------------|---|
| April 25 | Sherman Muni Grand Re-Opening |
| March 21/22 | Denton TX EAA Sport Air Workshop 800-967-5746 |
| Jul 29 - Aug 4 | 46th EAA Fly-In Oshkosh |

Name Tags:

Gene Spaulding, our Treasurer, has the following name tags which can be picked up at the meeting:

- | | |
|----------------|----------------|
| Edwin Arvesen | Stephan Haley |
| Martti Benson | Ron Wisian |
| Linda Wisian | Dave Heroy |
| Robert Miner | Stephen Corder |
| Steve Marchand | |



A Message From the President Jerry Mrazek

Those of you who were at the January meeting will agree that Dr. Don Christiansen gave a fine talk on aviation medicine and health in general. Our thanks to Don for that very informative and entertaining presentation. I apologize to Don for not saying in my introduction of him that he is a practicing medical doctor and has a practice in Duncanville. Thanks again to Don for the fine job and for the effort he put into preparing this talk.

Thanks also to Clair Button who served you well in volunteering to be the nomination committee chairman for getting willing candidates to run for Board of Directors. Clair managed to get 13 people to place their names on the ballot. You are invited to volunteer or nominate additional people at the next chapter meeting. I sense that our volunteerism attitude is gathering momentum and it exciting. I want to thank those who volunteered to serve on the board for your willingness to get involved.

Monroe McDonald and I went to Abilene on the 17th of January to participate in the planning of the Southwest Regional Fly-in (SWRFI) in October. We volunteered our chapter to take care of Flightline operations. We will need quite a few volunteers to help so that no one will have to spend an excessive number of hours out on the ramp. Please make your plans to attend the SWRFI fly-in and plan also to help us for a few hours in this effort. We expect to have a large number of aircraft of every variety and you all love airplanes as much as I do so come on out and get involved. You will be up close and personal with the airplanes and providing a very important service to incoming and departing pilots. It will make you feel good and the fly-in will be more successful as a result of your help. If we have enough volunteers each person won't have to work but a few hours and you will have lots of time to wander around and admire all of the airplanes. I was amazed and pleased at how many volunteers stepped forward to take on jobs at the fly-in. Stu McCurdy, the president of the fly-in association is a good organizer and people really seem to want to help make this fly-in a success. (URL for Southwest Regional Fly-in is www.mrdata.com/airshows/ data is Oct. 15-18)

Well my RANS S-14 is ready for the third inspection by Mel Asberry and then by the FAA. Needless to say I am anxious to get it in the air. I am working on a radio noise problem caused by the ignition system. With the help of Mel, Brownie Seals, and the CPS catalog, I am starting to get a handle on it. If any of you are having radio noise problems maybe we could get together and share ideas. Maybe you would like a column in the newsletter about how someone solved a particular problem on his airplane. Let us know if that is of interest to you.

Happy Flying and please consider volunteering for something, Jerry



Chapter 168 Director Nominees for 1998.

The Director Nominating Committee is very pleased to announce that the following 13 Chapter 168 members have stepped forward and agreed to be candidates for the position of Director for the 1998 year.

- | | |
|-----------------|-----------------|
| Ann Asberry | "Bo" Bauereis |
| Earl Browning | Sam Cooper |
| Dave Davidson | A.D. Donald |
| Dick Flunker | John Ivy Jr. |
| Joe Mathews | Monroe McDonald |
| Tom Moe | Frank Prokop |
| Richard Robbins | |

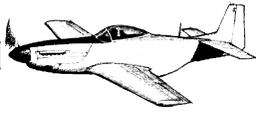
Chapter 168 members desiring to join this group of candidates for director, may do so at the February meeting. The election for these positions will be held at the March chapter meeting. The responsibilities of Chapter Director were outlined in the January issue of the "Hangar Echoes" newsletter. Directors are a key component of our Board of Directors, and it is an excellent way to get/stay involved in guiding future activities of your Chapter 168.

If you would like to obtain additional information, please contact the Nominating Committee Chairman, Clair Button, at (972) 996-7909.

Chapter 168 First Flights !

First Flight Plaques will be presented at the February Chapter meeting to the following Chapter 168 members:

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Greg Otto, November 8, 1997, Velocity, N150GH

Dean Fellows, December 14, 1997, RV-6, N245DF

Gary Hansen & Jerry Bidle, December 15, FireFly

Tom Moore, June 1, 1997, Q-200, N321TM

Congratulations, gentlemen, and much Happy Flying!!
Who will be the first chapter member to fly in 1998?

Chapter 168 Member Injured in Motorcycle accident.

As this newsletter is being prepared, we have been informed that Earl Browning, one of our Chapter 168 members and Vice-President for 1996 & 1997, was seriously injured in a motorcycle accident on Saturday, January 17th. Earl successfully avoided hitting several young children who darted across the street in front of him on a Dallas street. Unfortunately, even at the low speed he was traveling (30 mph), Earl, in avoiding the children, took a serious tumble with his motorcycle and broke his left hip, his right ankle, and the leg bone below his right knee. He is currently at Parkland Hospital, where they have operated on the injuries. He is reportedly doing well, and hopefully will be back at home by the time you read this newsletter. We wish him a speedy recovery, and hope he will be back flying his Piper Cherokee very soon (a much safer activity!).

Chapter 168 Member wins Leadership Award!

It is worth repeating here, the announcement in Sport Aviation, that one of our Chapter 168 members, Michael Carver, is one of four pilots to receive 1997 Phillips 66 Aviation Leadership Awards "for their outstanding volunteer work teaching children about general aviation and helping them realize their dreams of flight."

"All of this year's recipients have been participating in the EAA's Young Eagles Program, introducing young people to aviation and giving them a free airplane ride." Phillips 66 has been a Young Eagles Program sponsor since 1994.

Michael was our Young Eagles Coordinator in 1996-1997. Because of a change in work assignment, Michael relinquished the Coordinator position to our current Coordinator, Tandy Allen. All of the 168 members who have participated during this time, both as pilots and ground crew members, are to be congratulated for their efforts, and for helping Michael win this significant award. We would encourage you to contact Tandy at (972) 233-1945 and continue your support for this fine program.

Congratulations Michael, a well deserved Award!

Aircraft Parts for Sale by Emmett Kinkade

Recently Monroe McDonald received a letter from Emmett Kinkade who currently lives in Alpine, Texas. The purpose of the letter was to inform our chapter that he has a lot of airplane material and tools for sale. Emmett opened the letter with "Perhaps you remember me, I built an RV-4 at the "Toy Barn" February 1998

at Addition airport some years ago. Most recently my wife and I scratch built another (somewhat modified) RV-4 and flew it across the Atlantic via the Azores."

I very well remember Emmett and this RV-4 and I was curious about the Atlantic crossing so I called him for details. The "Toy Barn" RV was started in 1982 with a very early kit from Van's Aircraft and was completed after 4000 hours of work in April 1984. He indicated that it was also the 8th RV-4 to fly. Needless to say, Emmett was a RV pioneer in our area and the job was somewhat difficult in blazing the trail. I well remember his words in the mid 1980s of how difficult the RV was to build. Very aggressive aerobatics were flown (very impressive) by Emmett until at 900 hours he had a mishap (no details given) where the final result was being up side down, plane totally destroyed and gas leaking onto him. He made it out OK.

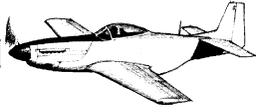
Starting in the early 1990s, Emmett and his wife started scratch building (the old fashion way with form blocks for ribs and bulkheads) the second RV-4. They completed this airplane in June of 1996. The somewhat modified note in his message mainly centered around adding additional gas tanks to get the total up to 104 gallons. Yes, 104 gallons (normal is 32). The wet wings hold 64 gallons and two 16 inch wide wing-tip tanks hold 20 gallons each. All of this gas capacity was put to use when Emmett and his wife flew to Spain via the Azores and on to Switzerland where his wife is from. This trip was made last summer during June. I find all of Emmett's RV-4 adventures to be very interesting, to say the least. Maybe we can find out more of the details later from him.

As a final reflection on where Emmett started 16 years ago with kit number 8 and where we are today with the RV-8 kit, we have come a long way. Just ask Don Christiansen. It is now possible to build an RV in as little as 1000 hours with the quick build kit.

The following are some of the items Emmett has for sale:

- Heinkel HE 100D 70% Replica, tubing with formed Al. skins
- Rivet guns, bars, clecos, air tools, spray guns
- Lycoming O-320 engine less crank
- Propellers: Warnke 68x72 and others
- Fiber glass cloth, and several hundred pounds of prepreg cloth, etc.

Contact: Emmett Kinkade (915) 837-5800
PO Box 1384
Alpine, TX 79831



John Denver Accident

SAFETY

by Richard VanGrunsven

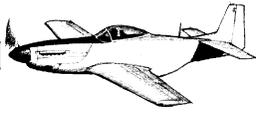
A recent issue of the GAN/Western Flyer aviation newspaper carried the NTSB 'suspected cause' of the tragic John Denver LongEze accident. The suspected culprit is a fuel selector valve located in a non-standard position. The valve was aft of the pilot's seat, which was not only well removed from the normal cockpit scan, but required loosening the seat belt, and accompanying cockpit contortions, to operate. It is felt that a fuel shortage in a least one tank initiated a series of events leading to loss of control and the steep impact with the ocean.

If this supposition is verified and found to be the probable cause, John's death becomes even more tragic --- because it could have so easily been prevented. No doubt at any time prior to the time of this accident the prospect of altering the fuel system appeared to be a big job, one which could wait for another day. In retrospect, it would have been such a small thing to do to prevent this accident.

The moral of this story is --- you guessed it --- have you made (or are you contemplating) any modifications which could in any way lead to an accident? While considering this, think about someone else as pilot of the airplane; some one who had not designed and installed the system or feature in question. Is it foolproof--even for the 1998 model fool? Every component in an airplane is a compromise. Something which promises obvious advantages can also offer subtle hazards. For instance, a fuel system with both tanks feeding simultaneously would seem foolproof -- no need to constantly monitor and switch tanks. However, a banked attitude or slip/skid situation with the tanks low on fuel can lead to unporting the fuel line and pumping air to a very discriminating engine.

Consider all possible booby traps which you might modify into your airplane. Have other builders and experienced pilots review these ideas with you to get a fresh perspective from someone far enough removed to tell the forest from the tress.

It's often the obscure little details which jump up and bite you, rather than the obvious check list items.



Pilot Error

by Ryan Seals 12-01-97

Check the statistics and you will find that the largest single cause of airplane accidents is "Pilot Error".

That's both good and bad. Good, because as pilots we can take steps to avoid errors and thus make ourselves safer while flying. Bad, because people keep doing it and losing their lives.

An interesting thought revolves around - "what is a pilot error?". Why do they do it? And "How can we prevent it?" I was surprised when I started listing potential "pilot errors". You may be as well.

One that stands out in my mind - it is an error, for a pilot to go flying as PIC of an airplane that can perform maneuvers that that pilot has not been trained to master and control. Like spinning, for instance. Have you made that error?

Another popular "pilot error" report is the "lost directional control" mishap. It is the result of trying to fly a machine that the pilot is not adequately trained to operate. Tail wheels are notorious for this. Get good training, persist in regular practice and don't jump into any plane that you are not fully familiar with. A contributing factor in many cases is wind. Know and abide by your limits.

It is an error to try to "stretch a glide". Just a few weeks ago an unlucky PIC tried it and his funeral was a few days later. If you are reading this you probably have not made that error, but are you alert to and skilled at recognizing just what are the limits of a glide in the plane you regularly fly? Drill yourself to handle the scary day that may test your ability in that way.

It is an error to set out on a trip which lasts longer than the fuel you have on board. But, it is a common occurrence among airplane drivers. A surprisingly large number of the engine out airplane accidents can be traced to "pilot error" induced fuel exhaustion.

Another error, related to fuel exhaustion - it is an error to begin any flight without adequate and complete planning. A plan needs to cover many things. Weather gets the credit for many accidents. In many of those cases, the pilot did not plan for coping with the weather he was going to encounter. The real cause of the accident was not the weather. The cause was "pilot error". The "error" was inadequate preflight planning. And possibly poor judgement.

Then there is the story of the pilot who took off with a concrete block tied to the tail of his plane. Made a real mess of the plane when he finally tried to land. Or, the guy who tried to take off in a plane that had had the rudder removed. He just got high enough to make a really messy crash when he plowed into the ground at the far end of the runway. In both cases - "pilot error". PIC's are supposed to do a thorough "pre-flight" before attempting to fly.

Even space pilots make errors. Recall the Russian aeronaut who disconnected the wrong cable and left his space craft adrift in space without control? Or the airline captain who punched the incorrect code into his computer while

approaching an airport in South America and did not stay aware enough to note that it was turning toward a mountain until it was about to crash into it? (Then it was too late)

Another "pilot error" I heard of the other day was the guy who managed to hang his coat sleeve on the fuel cut-off and wound up making an engine out landing. Fortunately he was up to the job and he was in an area where there was space to make that landing. But, for a bit of luck, this might have gone down as another "fuel exhaustion" accident. Make sure that you are familiar with the equipment in your cockpit. Not doing so is a "pilot error". And take care not to operate controls by accident. Or you may have one.

While I lived in the San Fernando Valley of California (Burbank) there was a "training accident" that happened on an IFR Training flight out of Burbank Airport. It seems that the flight set out from Burbank and was vectored by Air Traffic Control into the side of a mountain. As near as could be reconstructed, the pilot "and" the instructor were blithely following instructions without paying any attention to where they were going. The controller was distracted for a moment and let them go too far on a heading. KERWHAM". Scratch one airplane and two humans. "Pilot Error" was not listed as the cause. But, that's what it was. A pilot should always "know" where he is and what is in front of him(or her). Learn to "navigate" with what you have in hand and in the cockpit. Not doing so is a dangerous "pilot error".

And while on that subject a critically important job in the cockpit is to constantly, carefully and completely scan the air around you. See and Be Seen is the primary duty of the PIC. It's your neck, look out for it. Neither ATC nor some smart machine has as much at stake. Be sure you "see". An airborne collision is the worst of all "pilot errors".

Paraphrasing a popular cliché, - "Airplanes don't make crashes pilots just run them into the ground". The number of real mechanical failures that bring down planes is extremely small.

The happy conclusion to be drawn from all this is - if pilots will learn and practice safety in all their activities, flying can be very safe.

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