

CHAPTER 55 EXPERIMENTAL AIRCRAFT ASSOCIATION

JUNE 2012



Meetings are the 2nd Saturday of each Month

EAA Chapter 55 Hangar-Mason Jewett Airport-643 Aviation Drive, PO Box 443, Mason, MI 48854

Pres: Ken Vandenbelt 589-5051 Vice Pres: Joe Madziar 676-4341 Treas: Al Spalding 676-3370

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Climb and Maintain Flight Level 55

The "fly-in" season has officially started and it's hard to believe it is time for our first events of the year.

Saturday, June 9th, is our first Young Eagle Rally.

Then, Sunday, June 10th, we host our Dawn Patrol.

We need TWO major things - GOOD weather and YOU to help. A number of pilots have signed up for YE but could still use more ground crew volunteers. Many folks have signed up for the DP but we still need some help in the auto parking; plane parking and field security areas. Please join the fun and come out to support our chapter.

With our events fast approaching, Warren Miller thought it would be a good idea for us to review hand signals. So, at our meeting Saturday, we hope to have Warren do a refresher course on the proper use of hand signals for directing planes. A copy of the cheat sheet from the Aeronautical Information Manual was emailed and we will have some available at the meeting. We also have one pinned on the bulletin board in the meeting room for quick reference.

**Board of Directors Meeting
June 6, 2012, 7:00 pm
Chapter Membership Meeting
June 9, 2012
Breakfast 8-9 Meeting 9:15 am**

Bob & Margie
Clark, Dave & Deb

Groh, Joe Madziar, Phil Tartalone, Vickie and I hosted Holt Pack 240 Tiger Cubs along with parents and siblings for a hot dog dinner and airport outing. The kids got to look at the airport and learn about planes. Unfortunately, these kids are too young for Young Eagles but we hope they will return in a few years.

As I mentioned at our last meeting, a gentleman donated an A65 Continental engine to the chapter. It is not complete; run out cylinders; new pistons; and crank flange bent. It is for sale; make offer. All proceeds benefit chapter funds.

Our May Wingtips newsletter was featured in the 5/29/12 issue of EAA National Chapter Gram email (*but a real bummer--the link to the PDF file isn't working*)!! I've emailed National about it but no reply as of press time.

Special congrats and thanks to Warren Miller and all the folks who contributed, past and present. Note that Warren has been requesting that each of us make an effort to contribute a little something. Actually, if each of us did "one photo-one sentence-ten members", we need only submit once or twice a year!! How about it? *Are you up to meeting Warren's challenge??*

Lastly - VOLUNTEER TO COME OUT AND SUPPORT YOUR CHAPTER!! IT'S A GREAT OPPORTUNITY TO VISIT WITH THE PUBLIC; FELLOW AVIATORS AND CHAPTER MEMBERS.

Share the passion,
Ken Vandenbelt, President

DAWN PATROL PARKING = Reminder
EAA volunteers are to park at their hangar; along the south drive fence; or down at the hangar gateway/tie down area. We need the area surrounding the EAA hangar for Handicap vehicles and show car parking.

Breakfast Teams

<u>June</u>	<u>July</u>
David Cook	Gary Bauer
Denise Cook	Nancy Bauer
Dave Groh	Paula Corsi
Dennis Hall	Ed Crouse
Mike Marhanka	Mary Gowans
Tim Martinson	Greg Harris
Robert Prezny	William Long
Greg Shannon	Tom Scheehan
Jack Toman	Ellen Webb



May Breakfast Cooks: Bill Bezdek; Margie Clark
w/granddaughter Heather Lambka; Joe Madziar

EAA Chapter 55

Board of Directors Meeting, May 9, 2012

Attendance: Ken Vandenberg, Joe Madziar, Al Spalding, Jack Voss, Steve Houghton, Dave James, Doug Koons, Warren Miller, Bill Purosky, Jim Spry, Vickie Vandenberg, Quorum achieved → Absent: Ed Search. Others: Phil Tartalone * Meeting was called to order at 7:00 pm → Secretary's Report: Madziar moved, Voss seconded, motion passed to approve. → Treasurer's report: Unavailable at meeting, to be reported at General Membership meeting → Committee and other reports → Young Eagles – Phil Tartalone: We are signing up pilots, and obtaining materials for “Goody Bags” to present to Young Eagles. → Membership – Vickie Vandenberg: Vickie has sent out promotional materials to certified pilots and mechanics. Last meeting, we gained three new members. → Program Coordinator – Vickie Vandenberg: We have program presenters through October. → Old Business → Meeting room furnace fixed by Doug Koons. Thanks, Doug. → New Business → MAD – Porta-Potties ordered; two @ \$160 each event (cost same) → Golf Carts; reserved two @ \$50 each for each event. We plan to reserve one more cart in case it is needed. → An A65 engine (basket job) has been donated to the Chapter. We will list it for sale – price TBD. → Announcements. → Findlay Ohio fly in. Participants must navigate by pilotage, predicting time and fuel burn. → Brighton is sponsoring a Poker Run. → It would be a good idea if we practiced standard aircraft ground marshaling signals for future fly ins here. → Vickie had a Cub Scout group contact her. They want to get familiarized with the airfield and aircraft operations. They will be here on May 21, at 6:00 pm. → Phil Tartalone announced that the Howell EAA Chapter will be presenting at some forums at Air Venture → 10. Koons moved, Purosky seconded, motion passed to adjourn at 7:45 pm. → Respectfully submitted, Jack Voss

EAA Chapter 55

General Membership Meeting, May 12, 2012

Called to order: 09:15 → National Anthem → Thanks to the breakfast team (uncontrollable applause breaks out, near hysteria grips the group and tears of gracious gratitude are spread widely throughout) → Attendance is 34 members with 16 guests. → June Breakfast Team: David Cook, Denise Cook, Dave Groh, Mike Marhanka, Tim Martinson, Robert Prezny, Greg Shannon, and Jack Toman. → Secretary's report for Membership meeting of April 14, 2012 – as published in the newsletter: Approved →

Treasurer's report as presented: Approved → Announcements: Ken announced that we have a Continental A65 engine – a basket job – donated to the Chapter. Most of the it is available. We'll try to market the engine, and raise funds for the Chapter. → Sign up sheets are out for volunteers for Dawn Patrol, Mason Aviation Day, and Young Eagles. → Name tags are here and available. Vickie will order more as needed. → New business – None to come before the Chapter → Adjourned at 09:30 → We listened to Tom Krashen helped us relearn “10 Things Every VFR Pilot Needs To Know”. Thanks, Tom; it's always good to have you here. → Respectfully submitted, Jack Voss



TIDBITS

By Vickie Vandenberg

AIRVENTURE FORUMS: Phil Tartalone will present Decision Making & Perceptions on Tuesday, 7/24/12 at the FAA Center at 4:00pm and on Wednesday, 7/25/12 at the Seaplane Base at 1:30pm. Check it out. Elliot Seguin will be doing a forum again and will send me his info as soon as it is available.

AIRVENTURE CAMPING: anyone plan to be at the usual sites at 15th & Elm in Camp Scholler??

FAA TAKES A FRESH LOOK AT GAM AIRPORTS: by Scott Spangler; 5/29/12; www.jetwhine.com Taking “A fresh look at the many roles General Aviation Airport play in the National Air Transportation System,” the FAA recently released the 34-page report of its in-depth, 18-month study of roughly 3,000 airports, General Aviation Airports: A National Asset. The article can be read at <http://www.jetwhine.com/2012/05/faa-takes-a-fresh-look-at-ga-airports/> and the complete FAA report is available at http://www.faa.gov/airports/planning_capacity/ga_study/media/2012AssetReport.pdf

NTSB STUDY FINDS MORE THAN 10 PERCENT OF ACCIDENTS OCCURRED ON FIRST FLIGHT OF EXPERIMENTAL AMATEUR-BUILT AIRCRAFT; IMPROVED TRAINING AND BETTER DOCUMENTATION RECOMMENDED (NTSB email of May 22, 2012)

WASHINGTON, DC – A National Transportation Safety Board (NTSB) study found that in 2011, 10 of 102 experimental amateur-built (E-AB) aircraft built by their owner crashed on their first flight. And 14 of 125 aircraft that had been bought used crashed on the new owner's first flight.

The study, which was launched last year, evaluated all E-AB accidents that occurred in 2011. The data show that powerplant failures and loss of control in flight are the most common accident occurrences by a large margin, highlighting the importance of pilots having the information and training necessary to safely operate their aircraft.

As a result of the study, the NTSB made a total of 16 safety recommendations to the Federal Aviation Administration (FAA) and the Experimental Aircraft Association (EAA).

"One of the most important findings of this study is the number of seasoned and experienced pilots getting into accidents so early in the life of structurally sound airplanes," said NTSB Chairman Deborah A.P. Hersman. "The recommendations we issue today can improve safety while encouraging the continued growth of this innovative and vibrant segment of the aviation community."

The study drew on analysis of accident and activity data over the last decade, in-depth investigations of all 224 E-AB aircraft accidents during 2011 (54 of which were fatal), data from a broad EAA survey of more than 5000 E-AB aircraft owners and builders, and discussions with representatives from the EAA, FAA, E-AB aircraft builders and owners, kit manufacturers, and representatives of E-AB aircraft type clubs.

E-AB aircraft represent a growing segment of the United States' general aviation fleet that is managed according to a different regulatory framework due to their experimental nature. The study identified a robust community of E-AB builders and owners, as well as industry associations, builder groups, aircraft type clubs, kit manufacturers and FAA guidance, which provide a wealth of training and guidance materials that promote thorough flight testing and encourage pilots to seek transition training.

Accident case studies indicate that not all builders of E-AB aircraft perform a thorough flight test program or create a detailed flight manual during Phase I testing. The study found that risks to E-AB aircraft could be reduced by verifying that all E-AB aircraft are adequately tested according to a flight test plan, and that the resulting test data are used to create an accurate and complete aircraft flight manual. Further, a functional test of the aircraft fuel system could identify design deficiencies, leaks and malfunctions prior to flight.

From 2001-2011, the accident rate of E-AB aircraft was more than twice as high as comparable GA aircraft in similar flight operations. During that period, the fatal accident rate was more than three times that of comparable GA aircraft. The NTSB undertook the study to identify opportunities for improvements to the E-AB safety record.

Study findings also included the following:

- In comparison with similar non-E-AB aircraft, a much higher proportion of accidents involving E-AB aircraft occur early in the operational life of the aircraft.
- E-AB aircraft account for a disproportionate number of total accidents and an even more disproportionate share of fatal accidents when compared with similar non-E-AB aircraft conducting similar flight operations.
- Accident analyses indicate that powerplant failures and loss of control in flight are the most common E-AB aircraft accident occurrences by a large margin and that accident occurrences are similar for both new and used aircraft.
- Structural failures have not been a common occurrence among E-AB aircraft.
- The majority of E-AB aircraft are now built from commercial kits, rather than from purchased plans or original designs.
- The E-AB aircraft safety record could be improved by providing pilots with additional resources to safely perform Phase I test pilot functions.

The 16 safety recommendations to the FAA and EAA include the following: require that applicants for an E-AB airworthiness certificate submit for acceptance a detailed flight test plan to the FAA and develop an aircraft flight manual with emergency procedures; develop and offer incentives to encourage E-AB owners, builders and pilots to complete flight test training and transition training; develop and publish guidance for the issuance of a Letter of Deviation Authority to conduct flight instruction in experimental aircraft; provide guidance for the use of recorded flight test data for the purposes of flight testing and for the development of an aircraft flight manual; and complete development of E-AB transition training resources.

An executive summary of the study, along with the findings, conclusions and safety recommendations are available at <http://go.usa.gov/pQt>. The complete study will be available on ntsb.gov in several weeks.

AVFLASH NEWS: EAA RESPONDS TO NTSB REPORT:

May 23, 2012 By **Mary Grady**

"Both EAA and the NTSB know that we must improve the accident record of amateur-built aircraft," said EAA President Rod Hightower on Tuesday evening, in a video response to the safety board's report released earlier that day. However, he said, some of the NTSB's recommendations to the FAA, which could result in more regulations, are "worrisome." For example, the NTSB wants new regulations for testing engine performance and for documenting flight tests in amateur-built aircraft. "At EAA, we do not believe that more regulation is the answer ... Education, versus new regulation, is a better solution," Hightower said.

The four recommendations the NTSB aimed at EAA would expand on programs that are already in place, Hightower said. EAA's Homebuilt Aircraft Council will continue to study the recommendations for what effect they may have on the design, building and certification of amateur-built aircraft. "Any action must ensure that the freedom to participate in the amateur-built aircraft community does not create additional burdens or hurdles," EAA said in its news release

THE EAA MISSION: To grow participation in aviation, by inspiring people to fly, build, volunteer and outreach to promote aviation.



YOUNG EAGLES

By Phil Tartalone

In just a few days our first Young Eagles rally of the summer will happen. I just checked the weather and the extended forecast is sunny, 79 degrees, and 0% chance of rain—a perfect day!! The volunteer sign-up sheets are on the table in the Chapter room. There are still plenty of opportunities to help out.

Once again, the Young Eagles dates for the summer are June 9, July 14, and August 11. Mark your calendars.



NOTES FROM CAPE JUBY

By Terry L. Lutz

Chapter 55 Flight Advisor

In today's flight test world, a lot of effort is placed on achieving the goal of flight testing a new design at the highest possible level of safety. While flight testing is inherently involves flying at the extreme edges of the envelope, if you don't go there properly in flight test, an operational pilot could inadvertently go there puts his airplane and passengers at risk. The same could be said for flight testing experimental-amateur built (EAB) airplanes.

Within the last year, there have been two fatal accidents in the flight test community. We grieve for those who were lost, and ask ourselves the question – Why? The first was the loss of a Gulfstream 650 at Roswell, NM during takeoff performance testing. The objective of the test was to determine the minimum takeoff safety speed (V2) following engine failure. After several takeoffs, where the engine was failed at V1, the liftoff speed remained above the target by about 2 knots.

For the takeoff when the accident occurred, the airplane had been refueled so that the weight was higher. In addition, there was a crosswind from the left. The airplane accelerated normally and the right engine was brought to idle at V1. At rotation speed, the pilot rotated to the target pitch attitude. At close to the target pitch attitude, the airplane rolled abruptly to the right, followed by activation of the stick shaker. The pilot countered with left aileron and called for power to be restored. Both main gears came briefly off the ground, but the right wing touched the runway and when the right gear was forced onto the ground, it collapsed.

The airplane skidded off the runway, striking several obstacles in its path, and caught fire. Although the airplane was relatively intact, the crew was trapped in an airplane that was fully engulfed in flames, even before coming to a stop. All four crewmembers perished.

The NTSB determined that the angle of attack for stick shaker activation had been set 3.25 degrees higher than the actual stall angle of attack when the airplane is operating in ground effect. The right wing stalled before the pilot received any warning from the stick shaker (in this case, the right wing stall is a complex interaction between the change in airflow from the failed engine on the right side, and the aileron corrections for the left crosswind). Additionally, a software change to provide angle of attack limiting on takeoff was being developed, but was not installed on the test airplane.

It was difficult to read this report, because the pilot, Kent Crenshaw, graduated in Class 80B from the USAF Test Pilot School, and was one of my classmates. The factors leading to the accident had been seen before. The lessons had been learned before. It was an unnecessary tragedy.

More recently, a newly developed Russian airplane, the Sukhoi Superjet, crashed in Indonesia. It crashed into the side of a volcano. The Russian aerospace industry has been without a true export product for some time. It was hoped that the 100 seat Sukhoi Superjet would become the first airplane in a family of

transport aircraft that could match the technology of aircraft developed in Europe and the US.

The airplane was on a demonstration flight from the airport in Jakarta, Indonesia. Including passengers and crew, there were 45 people on board. The pilot requested a descent from 10,000 feet to 6,000 feet in an area of mountainous terrain. Shortly after passing 7,000 feet, radar contact was lost. It took several hours to locate the wreckage due to poor weather. What rescuers found was total devastation. The airplane had crashed into a nearly vertical wall of rock and disintegrated. Debris was scattered everywhere, and much of it traveled vertically down the side of the mountain. It took almost 3 weeks to find the flight data recorder.

Air travel is considerably safer today due in part to the introduction of Ground Proximity Warning Systems (GPWS). A newer version called Enhanced GPWS uses a worldwide digital database and GPS for positioning. If it senses the airplane is headed toward terrain, a terrain display will automatically appear on the navigation screen and show in red where the terrain is along the route of flight. This comes with an audio "Terrain Ahead" message. If you get even close to terrain, an audio "Terrain, Terrain, Pull-Up" will be heard. The investigation will determine if these alerts were triggered, and if the crew reacted to the alerts.

It was tragedy that should have been avoided, but wasn't. Killed was the Sukhoi Chief Test Pilot, Alexander Yablontsev.

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Dad and I recently had the opportunity to visit the various sites in Normandy where allied forces stormed into France on D-Day, 6 June 1944. Dad had been there a few times before. The first time he was there, it was in the cockpit of B-26 Martin Marauder. At the museum overlooking Utah Beach, there is a beautifully restored B-26. It is one of only 4 complete B-26 aircraft in the world. This example, painted in the colors of "Dinah Might" from the 386th Bomb Group, was flown on D-Day by Captain David H. Dewhurst, Jr. The airplane was one of many flown by the French Air Force during WWII. After the war, it was used as a maintenance trainer before being acquired by the Musee de l' Air at Le Bourget airport.

Captain Dewhurst's two sons, David Dewhurst (Lt Gov of Texas) and Gene Dewhurst, saw a display at the Utah Beach Museum, honoring the 386th Bomb Group. Until then they really hadn't known of the action their father participated in during the war, because he died in 1947. The Dewhursts approached the Musee de l' Air and offered to pay for restoring the airplane, and to build a shelter for it adjacent to the existing Utah Beach Museum. The airplane is a B-26G, and is displayed there as "Dinah Might".

Once in the museum, officials there wanted to talk to Dad about his missions during the war, and were particularly knowledgeable about his unit, the 397th Bomb Group. One man actually knew the location of the first forward operating field the Group had flown from, after moving to France from England. It turned out that the location was about 20 km away from Utah Beach, near the small town of Gorges. We had the

opportunity to visit the site, which has a stone marker identifying the farmland that once was an airfield reinforced with Portable Steel Planking (PSP) for air operations.

We visited German cemetery, where 21,000 German soldiers are buried. Many of the graves hold the remains of unknown soldiers.

The following day, we visited the American cemetery, where more than 9,300 white crosses are meticulously laid out on a beautiful site overlooking Omaha Beach. It happened to be the day when the French and American governments were holding a memorial ceremony. The French national anthem, the “Marseillaise” was played, followed by the US national anthem. As the music concluded, a C-130 flew over (a well-timed, nicely low, and high speed pass). “USAF” was clearly marked under the left wing. I leaned over to Dad and said “It’s one of ours.”

From there, we went to the city of St. Lo, and located the cathedral that had been nearly destroyed in the artillery and air bombardment following D-Day. The story of St. Lo following D-Day is complex and definitely worth reading. It’s important to remember that many allied soldiers died under the rain of bombs from friendly bombers because due to a series of errors. And tragically, more than 500 French citizens died as St. Lo was systematically destroyed.



After traveling to Toulouse, we were able to do some local flying.

That’s a good story, too, and you can ask Dad for the details when you see him at the Chapter meeting on Saturday.

Hey, we have some Young Eagles to fly, and some pancakes to flip. So now is the time to put some shoulder into helping the Chapter, because it really does take a lot of effort make all those things happen.



FROM THE FLIGHT SURGEON

By Gregory Pinnell, MD

Another big policy change may become possible with the FAA. The FAA is reconsidering some of the more common and benign medical diagnosis which are usually under special issuance and require regular reporting to keep your medical. If their deliberations are successful, some diagnosis (such as

hypothyroidism) may not require regular reporting to the FAA if they are well controlled.

This would reduce burden on both the pilots to produce documentation on a regular basis and also lessen the FAA’s workload in Oklahoma City. The effect on aviation safety should be minimal to none.

If you have questions about this pending policy please feel free to write us at www.OK2FLY.com . Fly Safe!

Chapter 55’s May Program



Tom Krashen of MDOT Aeronautics, conducted a safety seminar before a packed house at the May meeting. It was a very interesting seminar regarding 10 things every VFR pilot needs to know, with many questions from the members being answered. Anyone wishing to contact Tom may do so via e-mail. Address is Krashent@Michigan.Gov

HOLT PACK 240 TIGER CUB SCOUTS



Chapter 55 Pilots and Holt Pack 240 Tiger Cub Scouts gather around Dave Groh’s Stearman where the future Young Eagles learned how an airplane flies. They also toured Mason Jewett airport and later ate hot dogs and had a lot of fun.

STEVE HOUGHTON’S PLANE

My plane is a Van’s RV7a. The panel is by SteinAir. It has taken five years build time (good thing it was a quick build kit!). It just went for paint. I anticipate a first flight late summer or early fall. (The following pictures/comments by Warren Miller.)



After five years of construction of his RV7a, Steve Houghton emerges from his aluminum cocoon to say "Hey, how bout some help!".



Several members came forward to assist Steve with the fitting and attachment of the wings after the May 2012 meeting. The wings fit perfectly.



It has an Aerosport Power IO-375 engine (an increased-stroke version of parallel-valve Lycoming IO-360 engine) and a Whirlwind Aviation 200RV composite prop.

CHAPTER 55 CLASSIFIEDS

EAA55 Builders Hangar 517-589-5051

AIRVENTURE: Rooms available; \$40 night; contact Bill Purosky 517-655-1432

FOR SALE:

Engine A65 Continental donated to chapter; not complete; run out cylinders; new pistons; crank flange bent. All proceeds go to chapter; make offer.

Spartan Wings membership for sale; available at 30% off; Steve Houghton at 517-290-7528

Chevrolet Corvair 100-HP flight motor conversion; nearly complete, unassembled. Many custom conversion parts William Wynne/FlyCorvair.com. Includes starter, alternator, prop hub, nitrided crank, dual ignition distributor, everything needed to assemble block, assembly videos (VHS), GM shop manual and all receipts. Needs choice of carb, oil cooler, intake pipes, exhaust, some add'l work on the block halves, and minor items (all dependent on specific installation).

On extended airframe build schedule, so I'd rather see engine put to use. \$5,000/negotiable, will deliver within 2 hours of Lansing area. Greg Harris 517-775-4563 or gkharris1974@gmail.com

Zenith Zodiac XL/650 Corvair motor mount; Greg Harris 517-775-4563 or gkharris1974@gmail.com

MH in Zephyrhills, FL in Rainbow Village RV Resort; 12x37; \$14,500; Dick Bacon 517-230-7808 or rhbbb27@comcast.net

Snowblower; MTD; 3HP; 21"; single stage; \$99 Greg Hover 517-676-5126

KIS TR-1, Subaru Legacy engine; GPS nav/com; many extras; George Moore 517-536-1034

DTV analog or digital antenna; \$20.00 George Moore 517-536-1034

Bellanca Aircraft in Chapter Hangar; for details, call Joe Whitesides 731-592-0454

Yesteryear Aviation; new surplus hardware; 517-676-4416

Contact Warren or Vickie to place your ad here!

WANTED WANTED WANTED
One Photo / One Sentence / Ten Members
Every Month !!!

CHECK OUT THE PICTURE, CAN YOU TELL WHERE DOUG KOONS WAS ON MAY 24TH.



And you can still see it with Google Earth near Oak Grove, Oregon . . .

TWO SUBMISSIONS BY WILLIAM BEZDEK

This is a very interesting story about a man and his B-17 Bomber.



Shortly after WWII a guy named Art Lacey went to Kansas to buy a surplus B-17. His idea was to fly it back to Oregon , jack it up in the air and make a gas station out of it. He paid \$15,000 for it. He asked which one was his and they said take whichever you want because there were miles of them. He didn't know how to fly a 4-engine airplane so he read the manual while he taxied around by himself. They said he couldn't take off alone so he put a mannequin in the co-pilot's seat and off he went.

He flew around a bit to get the feel of it and when he went to land he realized he needed a co-pilot to lower the landing gear. He



crashed and totaled his plane and another on the ground. They wrote them both off as "wind damaged" and told him to pick out another. He talked a friend into being his co-pilot and off they went.

crashed and totaled his plane and another on the ground. They wrote them both off as "wind damaged" and told him to pick out another. He talked a friend into being his co-pilot and off they went.



They flew to Palm Springs where Lacey wrote a hot check for gas. Then they headed for Oregon . They hit a snow storm and couldn't find their way, so they went down below 1,000 feet and followed the railroad tracks. His partner sat in the nose section and would yell, "TUNNEL" when he saw one and Lacey would climb over the mountain.



They landed safely, he made good the hot check he wrote, and they started getting permits to move a B-17 on the state highway. The highway department repeatedly denied his permit and fought him tooth and nail for a long time, so late one Saturday night, he just moved it himself. He got a \$10 ticket from the police for having too wide a load.

Thanx Bill, for a great story, bet not many of us have read this one before.

**The Gimli Glider
by Wade H. Nelson
Copyright WHN 1997 All Rights Reserved
Published in Soaring Magazine**

Photo Courtesy of Wayne Glowacki / Winnipeg Free Press



If a Boeing 767 runs out of fuel at 41,000 feet what do you have? Answer: A 132 ton glider with a sink rate of over 2000 feet-per-minute and marginally enough hydraulic pressure to control the ailerons, elevator, and rudder. Put veteran pilots

Bob Pearson and cool-as-a-cucumber Maurice Quintal in the cockpit and you've got the unbelievable but true story of Air Canada Flight 143, known ever since as the Gimli Glider.

Flight 143's problems began on the ground in Montreal. A computer known as the Fuel Quantity Information System Processor manages the entire 767 fuel loading process. The FQIS controls the fuel pumps and drives all of the 767's fuel gauges. Little is left for crew and refuelers to do but hook up the hoses and dial in the desired fuel load. But the FQIS was not working properly on Flight 143. The fault was later discovered to be a poorly soldered sensor. An improbable sequence of circuit-breaking mistakes made by an Air Canada technician independently investigating the problem defeated several layers of redundancy built into the system. This left Aircraft #604 without working fuel gauges.

In order to make their flight from Montreal to Ottawa and on to Edmonton, Flight 143's maintenance crew resorted to calculating the 767's fuel load by hand. This was done using a procedure known as dipping, or "dripping" the tanks. "Dripping" could be compared to calculating the amount of oil in a car based on taking a dipstick reading.

Among other things, the specific gravity of jet fuel is needed to make the proper "drip" calculations.

The flight crew had never been trained how to perform the calculations. To be safe they re-ran the numbers three times to be absolutely, positively sure the refuelers hadn't made any mistakes; each time using 1.77 **pounds**/liter as the specific gravity factor. This was the factor written on the refuelers slip and used on all of the other planes in Air Canada's fleet. The factor the refuelers and the crew **should** have used on the brand new, all-metric 767 was .8 **kg**/liter of kerosene.

After a brief hop Flight 143 landed in Ottawa. To be completely safe, Pearson insisted on having the 767 re-dripped. The refuelers reported the plane as having 11,430 liters of fuel contained in the two wing tanks. Pearson and Quintal, again using the same incorrect factor used in Montreal, calculated they had 20,400 kilos of fuel on board. In fact, they left for Ottawa with only 9144 kilos, roughly half what would be needed to reach Edmonton.

Lacking real fuel gauges Quintal and Pearson manually keyed 20,400 into the 767's flight management computer. The flight management computer kept rough track of the amount of fuel remaining by subtracting the amount of fuel burned from the amount (they believed) they had started with. Their fate was now sealed.

According to Pearson, the crew and passengers had just finished dinner when the first warning light came on. Flight 143 was outbound over Red Lake Ontario at 41,000 feet and 469 knots at the time. The 767's Engine Indicator and Crew Alerting System beeped four times in quick succession, alerting them to a fuel pressure problem. "At that point" Pearson says "We believed we had a failed fuel pump in the left wing, and switched it off. We also considered the possibility we were having some kind of a computer problem. Our flight management computer showed more than adequate fuel remaining for the duration of the flight. We'd made fuel checks at two waypoints and had no other indications of

a fuel shortage." When a second fuel pressure warning light came on, Pearson felt it was too much of a coincidence and made a decision to divert to Winnipeg. Flight 143 requested an emergency clearance and began a gradual descent to 28,000. Pearson said "Circumstances then began to build fairly rapidly." The other left wing pressure gauge lit up, and the 767's left engine quickly flamed out. The crew tried cross feeding the tanks, initially suspecting a pump failure.

Pearson and Quintal immediately began making preparations for a one engine landing. Then another fuel light lit up. Two minutes later, just as preparations were being completed, the EICAS issued a sharp bong--indicating the complete and total loss of both engines. Quintal said "It's a sound that Bob and I had never heard before. It's not in the simulator." After the "bong," things got quiet, real quite. Starved of fuel, both Pratt & Whitney engines had flamed out.

At 1:21 GMT, the forty million dollar, state-of-the-art Boeing 767 had become a glider. The APU, designed to supply electrical and pneumatic power under emergency conditions, was no help because it drank from the same fuel tanks as the main engines. Approaching 28,000 feet the 767's glass cockpit went dark. Pilot Bob Pearson was left with a radio and standby instruments, noticeably lacking a vertical speed indicator - the glider pilot's instrument of choice. Hydraulic pressure was falling fast and the plane's controls were quickly becoming inoperative. But the engineers at Boeing had foreseen even this most unlikely of scenarios and provided one last failsafe, the RAT.

The RAT is the Ram Air Turbine, a propeller driven hydraulic pump tucked under the belly of the 767. The RAT can supply just enough hydraulic pressure to move the control surfaces and enable a dead-stick landing. The loss of both engines caused the RAT to automatically drop into the airstream and begin supplying hydraulic pressure.

As Pearson began gliding the big bird, Quintal "got busy" in the manuals looking for procedures for dealing with the loss of both engines. There were none. Neither he nor Pearson nor any other 767 pilot had ever been trained on this contingency. Pearson reports he was thinking "I wonder how it's all going to turn out." Controllers in Winnipeg began suggesting alternate landing spots, but none of the airports suggested, including Gimli, had the emergency equipment Flight 143 would need for a crash landing. The 767's radar transponder had gone dark leaving controllers in Winnipeg using a cardboard ruler on the radar screen to try and determine the 767's location and rate of descent.

Pearson glided the 767 at 220 knots, his best guess as to the optimum airspeed. There was nothing in the manual about minimum sink - Boeing never expected anyone to try and glide one of their jumbo jets. The wind milling engine fans created enormous drag, giving the 767 a sink rate of somewhere between 2000 and 2500 fpm. Copilot Quintal began making glide-slope calculations to see if they'd make Winnipeg. The 767 had lost 5000 feet of altitude over the prior ten nautical (11 statute) miles, giving a glide ratio of approximately 11:1. ATC controllers and Quintal both calculated that Winnipeg was going to be too far a glide, the 767 was sinking too fast. "We're

not going to make Winnipeg" he told Pearson. Pearson trusted Quintal absolutely at this critical moment, and immediately turned north.

Only Gimli, the site of an abandoned Royal Canadian Air Force Base remained as a possible landing spot. It was 12 miles away. It wasn't in Air Canada's equivalent of Jeppesen manuals, but Quintal was familiar with it because he'd been stationed there in the service. Unknown to him and the controllers in Winnipeg, Runway 32L (left) of Gimli's twin 6800 foot runways had become inactive and was now used for auto racing. A steel guard rail had been installed down most of the southeastern portion of 32L, dividing it into a two lane dragstrip. This was the runway Pearson would ultimately try and land on, courting tragedy of epic proportions.

To say that runway 32L was being used for auto racing is perhaps an understatement. Gimli's inactive runway had been "carved up" into a variety of racing courses, including the aforementioned dragstrip. Drag races were perhaps the only auto racing event *not* taking place on July 23rd, 1983 since this was "Family Day" for the Winnipeg Sports Car Club. Go-cart races were being held on one portion of runway 32L and just past the dragstrip another portion of the runway served as the final straightaway for a road course. Around the edges of the straightaway were cars, campers, kids, and families in abundance. To land an airplane in the midst of all of this activity was certain disaster.

Pearson and Copilot Quintal turned toward Gimli and continued their steep glide. Flight 143 disappeared below Winnipeg's radar screens, the controllers frantically radioing for information about the number of "souls" on board. Approaching Gimli Pearson and Quintal made their next unpleasant discovery: The RAT didn't supply hydraulic pressure to the 767's landing gear. Pearson ordered a "gravity drop" as Pearson thumbed frantically through the Quick Reference Handbook, or QRH. Quintal soon tossed the QRH aside and hit the button to release the gear door pins. They heard the main gear fall and lock in place. But Quintal only got two green lights, not three. The nose gear hadn't gone over center and locked, despite the "assist" it was given by the wind.

Six miles out Pearson began his final approach onto what was formerly RCAF Gimli. Pearson says his attention was totally concentrated on the airspeed indicator from this point on. Approaching runway 32L he realized he was too high and too fast, and slowed to 180 knots. Lacking divebrakes, he did what any sailplane pilot would do: He crossed the controls and threw the 767 into a vicious sideslip. Slips are normally avoided on commercial flights because of the tremendous buffeting it creates, unnerving passengers. As he put the plane into a slip some of Flight 143's passengers ended up looking at nothing but blue sky, the others straight down at a golf course. Quintal said "It was an odd feeling, the left wing was down, so I was up compared to Bob. I sort of looked down at him, not sideways anymore."

The only problem was that the slip further slowed the RAT, costing Pearson precious hydraulic pressure. Would he be able to wrestle the 767's dipped wing up before the plane struck the ground? Trees and golfers were visible out the starboard side passengers' windows as the 767 hurtled toward the threshold at 180 knots, 30-50 knots faster than normal. The RAT didn't supply "juice" to the 767's flaps or slats so the landing was going to be

hot. Pearson didn't recover from the slip until the very last moment. A passenger reportedly said "Christ, I can almost see what clubs they are using." Copilot Quintal suspected Pearson hadn't seen the guardrail and the multitude of people and cars down the runway. But at this point it was too late to say anything. A glider only gets one chance at a landing and they were committed. Quintal bit his lip and remained silent.

Why did Pearson select 32L instead of 32R? Gimli was uncontrolled so Pearson had to rely on visual cues. It was approaching dusk. Runway 32L was a bit wider, having been the primary runway at Gimli in prior year. Light stantions still led up to 32L. And the "X" painted on 32L, indicating its inactive status, was reportedly quite faded or non-existent. Having made an initial decision to go for 32L the wide separation of the runways would have made it impossible for Pearson to divert to 32R at the last moment. Pearson says he, "Never even saw 32R, focusing instead on airspeed, attitude, and his plane's relationship to the threshold of 32L."

The 767 silently leveled off and the main gear touched down as spectators, racers, and kids on bicycles fled the runway. The gigantic Boeing was about to become a 132 ton, silver bulldozer. One member of the Winnipeg Sports Car Club reported he was walking down the dragstrip, five gallon can full of hi-octane racing fuel in hand, when he looked up and saw the 767 headed right for him. Pearson stood on the brakes the instant the main gear touched down. An explosion rocked the 767's cabin as two tires blew. The nose gear, which hadn't locked down, collapsed with a bang.. The nose of the 767 slammed against the tarmac, bounced, then began throwing a three hundred foot shower of sparks. The right engine nacelle struck the ground. The 767 reached the tail end of the dragstrip and the nose grazed a few of the guardrail's wooden support poles. (The dragstrip began in the middle of the runway with the guardrail extending towards 32L's threshold) Pearson applied extra right brake so the main gear would straddle the guardrail. Would the sports car fans be able to get out of the way, or would Pearson have to veer the big jet off the runway to avoid hitting stragglers?

The 767 came to a stop on its nose, mains, and right engine nacelle less than a hundred feet from spectators, barbecues and campers. All of the race fans had managed to flee the path of the silver bulldozer. The 767's fuselage was intact. For an instant, there was silence in the cabin. Then cheers and applause broke out. They'd made it; everyone was alive. But it wasn't over yet. A small fire had broken out in the nose of the aircraft. Oily black smoke began to pour into the cockpit. The fiery deaths of passengers in an Air Canada DC-9 that had made an emergency landing in Cincinnati a month before was on the flight attendants' minds and an emergency evacuation was ordered. The unusual nose-down angle the plane was resting at made the rear emergency slides nearly vertical. Descending them was treacherous.

The only injuries that resulted from Pearson's dead-stick landing of Flight 143 came from passengers exiting the rear emergency slide slamming into the asphalt. None of the injuries were life-threatening. The fire in the aircraft's nose area was battled by members of the Winnipeg Sports Car Club who converged on the plane with dozens of hand-held fire

extinguishers. Pearson had touched down 800 feet from the threshold and used a mere 3000 feet of runway to stop. A general aviation pilot who viewed the landing from a Cessna on the apron of 32R described it as "Impeccable." The 767 was relatively undamaged.

Air Canada Aircraft #604 was repaired sufficiently to be flown out of Gimli two days later. After approximately \$1M in repairs, consisting primarily of nose gear replacement, skin repairs and replacement of a wiring harness it re-entered the Air Canada fleet. To this day Aircraft #604 is known to insiders as "The Gimli Glider." The avoidance of disaster was credited to Capt. Pearson's "Knowledge of gliding which he applied in an emergency situation to the landing of one of the most sophisticated aircraft ever built." Captain Pearson strongly credits Quintal for his cockpit management of "Everything but the actual flight controls," including his recommendation of Gimli as an landing spot. Captains Pearson and Quintal spoke at the 1991 SSA Convention in Albuquerque about their experiences. Pearson was, at the time, still employed and flying for Air Canada, and occasionally flying his Blanik L-13 sailplane on the weekends; he has since retired to raise horses. Maurice Quintal is now an A-320 Pilot for Air Canada, and will soon be captaining 767's; including Aircraft #604. Copyright 1997 WHN

An amusing side-note to the Gimli story is that after Flight 143 had landed safely, a group of Air Canada mechanics were dispatched to drive down and begin effecting repair. They piled into a van with all their tools. They reportedly ran out of fuel en-route, finding themselves stranded somewhere in the backwoods of Manitoba

http://en.wikipedia.org/wiki/Gimli_Glider

C.A.R.D.S. RC AIRCRAFT that was displayed and flown June 2 and 3 at their Grand Ledge field



Russian CMEPTb



Spitfire



Chipmunk



Dauntless

These are large scale models with 6 foot wing spans and retractable landing gear. One flyer from the Chicago area said he had over \$3,500 invested in his Dauntless (below) which was one of several planes he had at the show.

POCKET CALENDAR:

June 9 = EAA55 Young Eagles
June 9 = Jackson Dawn Patrol
June 10 = EAA55 Dawn Patrol
June 17 = Plymouth/Mettetal Dawn Patrol
June 23 = Kalkaska Dawn Patrol
June 24 = Flushing DP w/Mac McClellan
on EAA Grassroots Tour
June 24 = Sturgis Dawn Patrol
July 7 = Watervliet Steak Dinner
July 8 = Watervliet Dawn Patrol

July 7-8 = Jackson Aerobatic Open
July 14 = EAA55 Young Eagles
July 23-29 = AirVenture
Aug 4-5 =Thunder Over Michigan
Aug 11 = EAA55 Young Eagles
Aug 18 = Mason Aviation Day
Aug 25-26 = Alma/Gratiot Air Show
Aug 25-26 = MERFI Regional-Urbana OH
Sept 8= EAA55 MDOT Seminar
Dec 9 = Chapter Xmas Party
Jan 25-26 = Gr Lks Internatl Aviation Conf

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