

HANGAR ECHOES

EXPERIMENTAL AIRCRAFT ASSOCIATION
CHAPTER 168 DALLAS TEXAS

First Flight of N326DB

By Dick Flunker

N326DB was started in September '95 and was flown 3 years and 6 months later in February 1999. Mel Asberry did the first flight in the morning with Don Christiansen flying chase in his RV8, and I flew it in the afternoon. I now have the RV grin - What a thrill.

I'm a first time builder and needed a considerable amount of guidance and assistance with the effort. This was especially true when it came to the wiring and firewall forward. Had it not been for the help of Mel Asberry, Ann Asberry, Ken Koehler and my wife Barb, I'm sure the project would still be sitting in my garage. Although I kept track of every hour spent working on the plane, I have yet to muster the courage to add up all the time, or cost. I'm sure both are a lot more than advertised.

My decision to build an airplane was not one of those well thought out, check out all the options type of decisions you many times hear about. Sometimes things just fall together and you go with it, and that is definitely what happened with me. Having lived in Wisconsin most of my life, going to Oshkosh was an easy annual event. Every year I looked at all those homebuilts and was in awe when I considered all the time it took to build one. I could never understand how anyone could have that much time available and still have a job and wife and family etc. Now that I've done it I can confirm that

it took a lot of time management. It certainly helped that my family is grown and moved away, and of course that I have a very understanding and helpful wife.

My building story started at Oshkosh '95 when I stopped at the metal shop. An EAA'er from the east coast was demo'g basic metal working skills including riveting. I enjoyed myself so much that I spent most of the day and part of several other days at the shop watching and participating as much as I could. For whatever reason there were never many folks at his demos so I was able to get several turns doing everything and used all the tools. What I found was that not only did I enjoy doing the metal work, but that I also found it rather easy to do.

The rest of the convention was spent looking at the metal kits, and

it didn't take me long to zero in on the RV's. I like low wing aircraft (most of my time is in a Piper Archer), and since I don't have any tail-dragger experience, the RV-6A was an easy choice. This is probably a good time to point out that while the 6A decision is right for me, it also means that I need to endure a lot of '6A' comments. For you potential 6A or 8A builders, be prepared to hearing about having a training wheel, a wheel on the wrong end, if you wouldn't have that wheel on the front you wouldn't have that problem, etc. etc. These comments don't bother me since I know



**Dick Flunker and Mel Asberry
First Flight N326DB RV-6A**

they are all said in fun (they are, aren't they??).

During the long drive back to Dallas I decided to check out the possibility of building. I called a friend that had built a Skybolt and he put me in touch with Mel Asberry. Longtime friend Ken Koehler and I visited Mel at his Plano Aircraft Factory while he was building the Zenair. A week or so later after Mel gave Barb and I a ride in his RV6, that was it. I sent for the preliminary plans.

My only airplane building experience prior to the RV-6A was the building of numerous radio controlled airplanes, some of which were 1/5 scale models. In looking at the preliminary plans, I was amazed at how familiar everything looked. Granted a different scale, accuracy requirements, and construction techniques, etc, but they definitely looked familiar. Ken Koehler had some prior aircraft building experience so when he offered to help build on a regular basis, I was totally locked in. The next step was to order the empennage kit and it arrived the first week of September '95. With Ken's help and the great Dallas weather, the empennage and both wings were completed in about a year. To speed things a bit I ordered the Phlogiston Spar, had Barnard Aircraft do a lot of the prep work on the wing, and George Orndorf helped by sealing my tanks. Without these things, the construction time on the wings would have been much longer.

Building the fuse was a much longer task than I had imagined. By the fall of '97 the fuselage was right side up and it looked to me like there was not too much time before I needed an engine. Charging forward I ordered a Van's O-360 and constant speed propeller so that I would get the '97 prices. Well, I could have left that money invested and made out much better. As it turned out the engine sat in my garage for over 6 months before it was mounted to the plane, and then it hung lifeless on the fuse for another 7 months. On the upside was the motivational aspect of having that expensive paperweight sitting in the corner of the garage.

My work on the plane was always steady, and for the most part progress was also steady. When I got to the panel and firewall forward, I realized that I needed more help – make that a lot of help, and a lot of knowledge. It was then that I was able to enlist Mel, and that really made it happen. Mel provided positive guidance, helped when he needed too, helped me fix my mistakes, and always kept Barb and I smiling. A friend like that is hard to find.

N326DB has a Lycoming O-360 A1A from Van's, a Hartzell constant speed propeller, Allegro Avionics Engine Monitor and Fuel Flow, Electric Gryos, II Morrow SL40 comm, King
March 1999

Transponder, and Navaid wing leveler. There is a mount for the Garmin GPS195, and a lot of open space on the panel. It has electric elevator trim and electric flap, and steps on both sides. Becky Orndorf did the interior, and it is scheduled to be painted in Ada, Oklahoma.

Now that N326DB is flying I'm looking forward to making it to the monthly flyins. And yes, I'm also planning to fly it to Oshkosh this year. Wouldn't it be neat if I could find the fellow in that metal shop that started this adventure?

N326DB Inspection

By Mel Asberry Tech Counselor

On February 27, 1999 at precisely 9:00 am, Lucky Louque showed up at hangar #318 at McKinney Municipal Airport. The purpose was to do the airworthiness inspection on Dick Flunkers brand new RV-6A. Now, I have personally heard Lucky say that he has seldom issued an airworthiness certificate on the first visit. But this time was different. Dick was ready. Lucky looked over the airplane from every possible angle commenting several times on Dick's beautiful workmanship. Those of you familiar with Lucky know that he doesn't throw around compliments unless he means it. He had a few pointers (very few) on minor things but certainly nothing noteworthy. Next



he looked at the weight & balance information, the builder's log and Dick's picture book. Then on to the aircraft and engine log books. Finally he filled out all the paperwork and before noon Dick had a real airplane instead of a "project". As a bonus, even though the repairman's certificate is an FAA issue and not under the DAR program, Lucky told Dick to fill out the application and he would take it to Gene Bland and see that it was expedited. The next time Dick was at Lancaster Airport he had his certificate in hand. This is the way the airworthiness inspection is supposed to work. If you have everything ready, it's a skate.

Absolute Ceiling of an RV-6

By Marvin Brott

Are you curious as to what the absolute ceiling would be for Dick Flunkers RV-6? The following appeared on the internet concerning Terry Jantzi, who has an RV-6 equipped exactly like

Dick's RV. Terry found out exactly what the absolute ceiling is.

He mentioned that he has on several occasions he has climbed to 18,000 feet and was still seeing 400 fpm when he leveled off. With this behind him he started the process of getting permission to fly above 18K which is IFR only. Terry does not hold an IFR rating, at least at that time. After several several levels of Transport Canada bureaucracy he finally reached the right person. He finally received a waiver in the middle of January with the comment of "good luck" from Transport Canada. In preparation for the flight he borrowed a data logger for recording altitude and made a switch from the nasal canulas for O2 to a full mask which was certified to 30,000'.

February 15 was a forecasted as beautiful sunny day under the influence of a high pressure system. The airplane was stripped of all extra weight and 120lbs of fuel were on board, good for two hours.

The flight started off of the at Waterloo with an initial clearance of a straight climb out to the northwest to 9000'. After that he backed off the propeller to 2500rpm and with the Insight Graphic Engine Monitor was able to keep the engine leaned just to the rich side of peak. Another backoff on the climb rate from 12000' to 18000' due to high oil temperatures. After 18000' the engine performance was low enough that the oil temps stayed in the green so he increased the prop to 2700rpm..The climb rate diminished to around 100fpm at 24500 feet. As he approached 26,000' the controls got quite mushy. Indicated airspeed was down to 55kts. Pulling on the stick just increased the angle of attack. Lowering the nose for a little bit of speed resulted in a 300-400 drop in altitude. The engine was still turning 2700rpm but the manifold pressure was down to 9"hg. Outside air temp was -38C (-36F). He played around for about a minute trying to nurse some more altitude, but the wing wouldn't lift anymore. All of this just 60nm away from the field, so the descent was accomplished with a couple of 360's.

Final readings from the data logger indicate an absolute altitude reached at 26,137' and level flight was maintained at 25,900'. Between the two cabin heaters and the solar heating he stayed warm for the entire flight. Terry's final comment, so much fun, so little time.

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March 2nd Chapter Meeting at SKYLINE HIGH SCHOOL

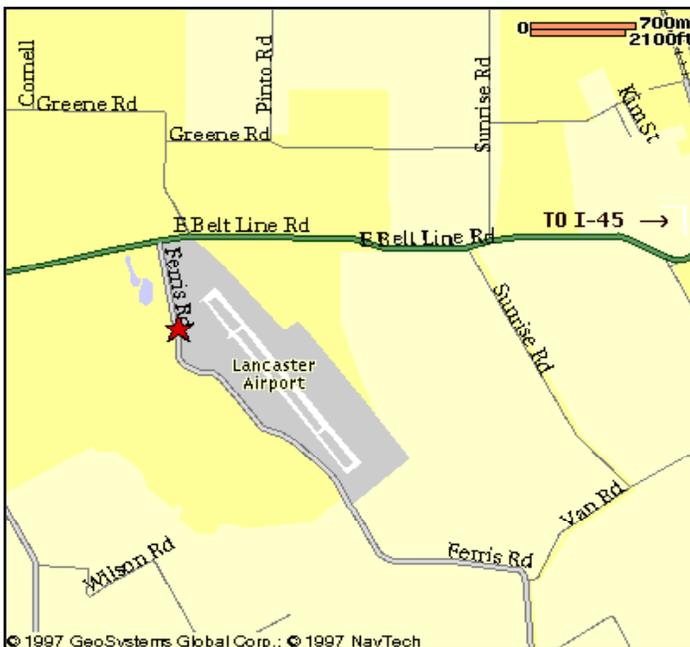
Our March 2nd Meeting will be held at the Skyline High School, 7777 Forney Rd. in Dallas, which is South of I-30 and West of Buckner Blvd. on Forney Rd. The meeting will be held in the auditorium and will begin at the regular time of 6:30 p.m. and finish at 9:00p.m. Attendees are asked to use the **Hangar door** on the **Southwest** corner of the building.

The program's subject, presented by Aviation department, will be non-destructive testing. The techniques include dye penetrants, ultrasound, and eddy currents.

The Chapter Meetings are open to everyone, so feel free to bring your spouse, family member, or a friend to any of the Chapter meetings. Encourage others to join in the fun.



March 6th Fly-In / Drive-In



The March 6th Fly-in/Drive-in will be at the Lancaster airport. We will meet for lunch at the cafe located on the field.

March 11th Director's Meeting

March 1999

The March 11th Director's Meeting will be held from 7:00 - 8:45 PM at the Farmers Branch Library. The following are Ann Asberry's minutes from the February 11th meeting.

- Meeting March 3 at Skyline High School. Speaker provided by the Aviation Department.
- Michael Stephan is this month's newsletter editor.
- No first flights this month but Dick Flunker is getting very close.
- Hangar Echoes assembly for March 30 at home of Richard and Jayme Robbins.
- Fly-in for March 6 is at Lancaster Airport. Lunch at the restaurant on the field.
- Fly-in ideas for the year discussed. Some suggestions are: Chili cook-off, Sack lunch, Cold cuts, Fly-out to an airport longer distance away such as Lake Texoma, Cedar Mills, Granbury, etc. Involve family's more.
- Discussion about the Chapter Leadership Workshop held at Lake Texoma Feb. 6. Good benefit to the Chapter. Some of the subjects were: Volunteers, Program content. Fly-in's, Chapter mission statement, Direction your Chapter is going, Fund raising, Poll members to know what they need and want from the Chapter, Get to know your fellow Chapter members.
- An action from this discussion is that there will be a "greeting person" at the door to welcome visitors and place a name tag on them so others can identify the visitor and make them feel welcome. Ann Asberry volunteered to fill the position.
- The Board of Directors election will be held at the March meeting. Richard Robbins is the Chairman of the nominating committee. Currently nominees are: Jim Quinn, Don Christensen, Bo Bauereis, Richard Robbins, Monroe McDonald.
- Future meetings include: April Mel Asberry part II, Bela Ambrus, an Astronaut around May or June.

March 30th Newsletter Assembly

The April issue of Hangar Echoes will be assembled at the home of Richard and Jayme Robbins on March 30th starting at 7:00 PM. The address is 227 Barnes Bridge in Sunnyvale, TX. If you need directions call Richard at (972) 226-6699.

Calendar of Events

- April 11th-19th 1999_- Sun-N-Fun Lakeland, FL
- July 28th - Aug. 3rd 1999_- AirVenture Oshkosh
- Oct. 7th-10th 1999 - Copperstate Fly-in Willams Gateway Airport Mena, AZ
- Oct. 15^h-17th 1999 - Southwest Regional Fly-in at Abilene Regional Airport, Abilene, TX

Volume 30, Issue 3 Page 4

A Message From the President:
Jerry Mrazek

We had a great fly-in at Lancaster Airport last month. I didn't do an actual count but it seemed that we had about ten chapter airplanes there and quite a few chapter members drove in. As reported, the food service was slow at the cafe but when I finally got what I ordered, it was good. I think we sort of saturated the cafe's capacity.

At the last general meeting we voted to change the wording in the by-laws to allow more than

seven board members. You can find the exact wording elsewhere in this newsletter. Since this wording is slightly different from what was stated at the last meeting, we shall vote to accept this wording at our next meeting. We also voted in a new slate of directors. Your new directors are those that were listed as candidates in the last newsletter.

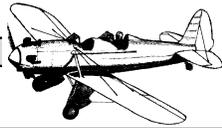
Well this is a milestone time for me. As I write this, it was a year ago today that I put the first flight on my airplane. It is actually more accurate to say that Mel Asberry put the first flight on it then I flew it immediately afterward. I have enjoyed that little airplane a great deal and it has met my expectations in every way. I managed to put 128 hours on it during the year and the longest trip I made with it was to Hays, Kansas last September. I now must perform my first annual inspection. I'm getting boned up on that so I do a professional job. When I see a new chapter project completed and the first flight made, it stirs up all of that excitement that I felt. I hope you all can experience that feeling someday, there's nothing like it.

One of the most useful and fun tools I have acquired in recent years is my Garmin GPSCOM 190. I needed (wanted) a radio in my airplane and Mel Asberry suggested that if I was going to buy a new one I should consider a GPSCOM. I thought that GPS in a 75 mph airplane was overkill but I did it anyway. Now after using it for a year I love it. Just think; until the middle 1700's sailors had no idea what their longitude was but now I know it very accurately and I can also display the course to a waypoint and the estimated time enroute. My correct ground speed drops out of the calculations too. I always have my charts at the ready but I have really enjoyed the GPS function.

If you are intrigued as I was about the "Quest for Longitude" there is a very interesting book entitled "Longitude" by Dava Sobel that tells how John Harrison solved the problem in England in the period from 1730 to 1770 by inventing and building five revolutionary time keepers that could be used onboard ships. He eventually was awarded a prize of 20,000 Pounds (Sterling) after much trouble and dissent from competing approaches, mostly based on astronomy.

Happy Flying, Jerry





Board of Directors Elections

By Michael Stephan

Below is the list of new directors as voted on during the March meeting at Skyline High School.

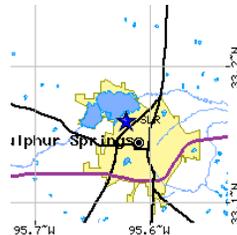
Monroe McDonald	Bill Wisley
Jim Quinn	Don Christiansen
Chuch Olmstead	Bo Bauereis
Vernon Williams	Marvin Brott
Michael Stephan	

We thank all of those who gave their time to the Chapter by serving as board members. Their effort in furthering the goals of the Chapter is greatly appreciated. Also, a special thanks goes to Richard Robbins who chaired the nominating committee.

April 17th Fly-Out

by Tom Moe

The chapter would like to start something new with monthly fly-outs on Saturday. Other flying groups have been doing this type of activity with considerable success. Therefore I have planned the first fly-out to Sulphur Springs, just East of Greenville. It will be on Saturday, April 17th.



Information:

Location Sulphur Springs ID SLR
 When: Saturday meet around 10:30-11:00
 Restaurant: Beckys Red Barn Aprox 1/4 mi
 Fuel: will be available all day
 Airport information: Elevation 489 feet, Dallas Sectional,
 Radio 122.8, Runway 18/36 and left patterns.

If possible, we visit with the local EAA chapter.

For those that have extra seats or want a ride I can be contacted at the following numbers.

E-mail: tommo@juno.com
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 Home 972-442-7997

Loose Wheels

from AVweb

As a Cherokee took off from the Santa Ana, California airport, the wheels departed the airplane. The student pilot aboard brought the plane back around and landed safely, doing little damage to the aircraft and none to his body. Any bets that the plane had just come out of maintenance?

GPS for Primary Navigation

summarized by mb

Last year we had a lot of discussion in Hangar Echoes about the future and safety of GPS for general aviation. As a follow up to this subject, the Johns Hopkins University Applied Physics Laboratory just put out a report or "risk assessment" of GPS as the sole means of navigation. The report concludes that GPS can be "the only navigation system installed in the aircraft and the only navigation service provided by the FAA," but that augmentation is needed to achieve this status. By augmentation I believe they mean differential GPS signals or the rapid implementation of WAAS with two additional signals. This was followed by Al Gore announcing a new \$400M initiative to modernize GPS. Don't hold your breath because they are talking about the year 2005 before redesigned satellites are launched. Early February the FAA-supported the study endorsing GPS as the primary navigation system, but now it appears they are backing up and indicating the need for a backup. Even with the WAAS and LAAS augmentation systems, GPS is too vulnerable to disruption.

Is There an Interesting Airplane in Your Future?

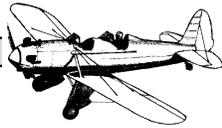
By mb

I guess with the good economy, hence the increased disposable income; there is a lot of interest in some exciting new airplanes. You have surely read about them in Sports Aviation. Let me list some planes have been recently announced to see if any of them spark your interest.

Roy LoPresti has signed the official paperwork to take over Piper's SwiftFury program. That was the redesigned Swift he worked on several years ago. He will attempt to certify and produce the SwiftFury, which will be at Sun n' Fun.

Next is the new Focke-Wulf FW-190A-8/Ns (N stands for "nachbau," German for remake) being manufactured near Munich. The German company plans to produce a number of all-new WW II-era German aircraft, including Me-109s and Junkers Ju-87 Stukas. Although tooling and jigs no longer exist, the new FW-190s are being built from original drawings, with most of the parts manufactured in former Eastern Block countries and shipped to Germany for assembly. In order to pass FAA muster, those sold in the U.S will have to comply with the "51% rule", hence experimental. Since original 1,770-hp BMW 801 radial engines are extinct, the next-best thing will power this FW 190: the 1,850-hp Shvetsov ASh-82, a Russian-built knockoff of the Pratt & Whitney R-1830 Twin Wasp. Many of the components are already in production: Kits for the U.S. are priced at \$408K including the engine.

The Aviat Aircraft people in Wyoming expect to certify the Millennium Swift, which is a revised Globe Swift. The second move by this company is to resurrect the mid 1940s two place side-by-side MonoCoupe 110, dubbed the Aviat 110 Special. The Swift will utilize the Continental IO-360 and the Coupe will



utilize the Lycoming AEIO-360. I guess we will have two Swift derivatives to select from.

Big Plans for Your Future

summerized by mb

In the not-too-distant future, there may be a virtual "highway in the sky". NASA has selected a team of industry partners (Lancair, Raytheon Aircraft and others) to help develop the highway in the sky system, a key element of the government-industry effort to revitalize general aviation in the United States. This team has 2 1/2 years to complete hardware and software development of a totally new concept for presenting critical, flight-path guidance information to the pilot. Wow.

They propose a cockpit display system with a computer-drawn highway that we follow to a preprogrammed destination. The highway is drawn on a highly intuitive, low-cost flat panel display. It will include a display of position, terrain map, weather and air traffic information. Wow again. In addition, digital (datalink) radios will send and receive flight data, and a solid-state attitude and heading reference system will replace gyroscopes. In addition, the displays and other equipment will provide intuitive situational awareness and enough information for a pilot to perform safely, with reduced workload, in nearly all weather conditions. They hope to redefine the relationship between pilots and air traffic control and fundamentally change the way we fly. This is the part that is hard to believe. They are working towards flight certification of this system around the year 2001.

The 99 Club

At 99, Ralph Charles, shown in his hangar with his plane, Blue Boy II, may be the oldest licensed pilot in the country, being Somerset, Ohio. As the apparent oldest licensed pilot in the United States, Charles has been around flying machines long enough to have rubbed elbows with Charles Lindbergh, take former first lady Eleanor Roosevelt on a flight and gaze upon the legendary aviation pioneer Orville Wright. The Federal Aviation Administration lists two 95-year-old pilots, but Charles just renewed his license after receiving word he passed the required physical exam.



His first license came decades ago. Charles was a barnstormer in the 1920s, co-piloted passenger airplanes for Trans World Airlines in the 1930s, was a civilian test pilot for the Navy during

World War II, and -- move over John Glenn -- he would like to be aboard the next space shuttle.

"I'd like to take a crack at it," he said.

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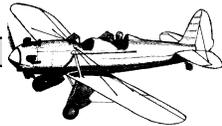
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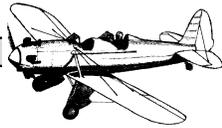
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Preview of the May 4th Chapter Meeting Astronaut to speak on International Space Station

It's been 3 years since Astronaut 'Hoot' Gibson spoke to our Chapter about his 1st docking of an American Space Shuttle with the Russian Mir Space Station. A total of 9 dockings have been completed in these ensuing years. Today, the Mir is nearing its demise. Some "experts" say that the Russians currently manning the Mir will be its last crew. It will be abandoned and allowed to burn-up (hopefully) in the earth's atmosphere.

After many years of delay and changing configurations, the first two elements of the long awaited International Space Station (ISS) have been joined in a 250-mile high orbit by an American team of Astronauts. Joining of the Russian built Zarya control module and the U.S. built "Unity" node module is the start of a module cluster that will be the central core of the new and massive space station. Plans call for a total of 45 Russian and American launches over the next 5-6 years to complete this immense task. More than 100 large components, weighing a total of 460 tons will be assembled. Astronauts & Cosmonauts will perform an estimated 960 hours of spacewalks to complete this task. A new generation of American Astronauts are currently being trained to perform these crucially important spacewalks.



We're very pleased that one of this new generation of Astronauts, Fernando (Frank) Caldeiro, will be our guest speaker at the May 4th Chapter Meeting. Mr. Caldeiro has recently completed over 80 hours of spacewalk (EVA) training in the NASA Neutral Buoyancy Laboratory's huge water training tank at the Johnson Space Center. Frank, a Mission Specialist, is now fully qualified to begin making the many grueling but delicate spacewalks necessary to assemble the many module elements and huge solar array panels the ISS will require.

Franks background includes being a test director on the Rockwell B-1B, and as a Shuttle propulsion systems expert with NASA since 1991.

It is probably no surprise to you that Frank Caldeiro is also a long time EAA Member and a Long-Eze builder and pilot. In an unusual move, it was the Chief Astronaut, Charles Precourt, who personally selected Frank Caldeiro to be our guest speaker. While Charlie Precourt also happens to be an EAA member and builder/pilot of a Vari-Eze, we're sure that didn't influence his choice -right?

We've had an opportunity to talk with Frank and exchange some e-mails. We're working with him on the May Program content, and I can tell you now that it will be very interesting and informative. Frank is very pleased to be coming to Dallas in May to visit with us. We'll have more details in next Newsletter.

Texas Messerschmitt Me262 Up-Date

Photo by Bill Wisley

We were originally led to believe that all five of the Texas Airplane Factory's replica Me262's had been shipped to Seattle in December. However, we learned from Bill Wisley that the single seat 262 remained at Meacham Field in Ft Worth at the



The Single seat Me262 at Meacham's Vintage Flying

Museum's hangar, which is home of the B-17 "Chuckie". The photo shows the aluminum engine castings, made from a real Jumo 004 engine which are used to fill the void space in front of the much smaller but more powerful GE J85 engines that were to power the replica 262's.

The vertical stab. and all control surfaces have been removed from the aircraft since I last saw the plane in Herb Tischler's "Texas Airplane Factory hangar.

We won't go into the sad chain of events that lead to the demise of the participation of Herb and George Tischler, and their outstanding crew of aircraft craftsmen. This information is pretty well chronicallized in reports available on the Internet at, of all places, the Me262 Australian Connection web site, located "www.ozemail.com.au/~fiveds/me262.html", then click on "262 replica".

The 262 may be gone by the time you read this, but if it's not, we'd encourage you to visit Hangar 33 South, which is located at the Southwest corner of Meacham. You can give them a call before you go, at (817) 624-1935, to see if the 262 is still there. It's an interesting Museum to visit even if the 262 is gone.

THIS *IS* YOUR FATHER'S B-52

Grandfathers in the next century may not be able to regale their grandkids with stories about flying the B-52, since the grandkids themselves may still be flying the venerable "BUFF." The USAF announced last week that it intends to keep B-52s in service until 2044, when they would be 84 years old. The Air Force needs the B-52 to supplement its costlier B-1 and B-2 bombers.

NASA BEGINS TESTING REPLICA OF HISTORIC 1903 WRIGHT FLYER

NASA is conducting a wind tunnel test of a full-scale replica of the historic 1903 Wright Flyer this month to learn more about its stability, control and handling characteristics. During the two-week test, March 1-14, project engineers will study the replica's stability, control and handling at speeds up to 30 mph. Tests are being conducted at NASA's Ames Research Center, Moffett Field, CA, in the world's largest wind tunnel. Test results will be used to compile a historically accurate aerodynamic database of the Wright Flyer.

"I can't think of anything as exciting as using modern technology to test an aerodynamic replica of the biplane that Orville and Wilbur Wright flew for the first time in 1903 at Kitty Hawk," said Pete Zell, Ames' wind tunnel test manager. "NASA is here as a resource for the public and to inspire young people. This project seeks to educate and inspire youth," Zell said.

"Testing the Wright Flyer gives us a chance to re-live history," said Craig Hange, Ames' wind tunnel test engineer.

"By understanding the flying characteristics of the Wright Flyer, we gain a better understanding of the Wright brothers' science and engineering skills, as well as an appreciation of the process that led to the development of the airplanes we fly today."

A team of volunteers from the Los Angeles section of the American Institute of Aeronautics and Astronautics (AIAA) built the replica using precise data from the original airplane provided by the Smithsonian. The replica features a 40-foot-4-inch wingspan reinforced with piano wire, cotton wing coverings, spruce propellers and a double rudder. Although it will replicate the 1903 Wright Flyer in design, size, appearance and aerodynamics, some changes have been made to strengthen the airplane for the wind tunnel tests.

Upon completion of the tests, the replica will be transported to Los Angeles, where it will be permanently displayed in the lobby of the Federal Aviation Administration's (FAA) Western Pacific Regional Office in Hawthorne, CA. The lobby will be renamed the FAA Flight Deck Museum and include a variety of other exhibits depicting the history of aviation.

Using the wind tunnel test data, a second Wright Flyer will be built by the AIAA volunteers and flown on Dec. 17, 2003, commemorating the 100th anniversary flight of Orville and Wilbur Wright at Kitty Hawk, NC. During a re-creation of the Wright brothers' first flight, the aircraft will fly low and travel at only 30 mph, the same speed flown by the Wright brothers, whose first flight traveled only 120 feet during its 12 seconds in the air. Fred Culick, 63, of Altadena, CA, a private pilot and an aeronautics professor at the California Institute of Technology, Pasadena, CA, will be the first to fly the airplane.

Orville and Wilbur Wright were responsible for a host of aviation inventions, including wing warping, which provides lateral control and allows an airplane to bank left or right. They also invented the forward stabilizer, which controls the airplane's up and down movement, and the moveable rear rudder, which enables the pilot to turn the aircraft.

"The work of the Wright brothers founded the science and technology of aeronautics, and their accomplishments form one of the grandest chapters in history," said Jack Cherne, TRW engineer and chairman of the Wright Flyer Project. The project is composed of volunteers from the Los Angeles Section of the AIAA. In contrast to the Wright brothers, who took less than a year to build their biplane, AIAA volunteers spent their Saturdays for the past 18 years planning and assembling the replica.

The replica underwent special tests as a prerequisite for entering the NASA wind tunnel. During static testing, more than three times the flight load (or more than 3,000 pounds) was applied successfully. The replica also underwent tests of its propeller system at Able Corp. in Yorba Linda, CA. In the NASA wind tunnel, the replica will be powered by a NASA electric motor.

The replica has about \$100,000 worth of donated materials from companies such as Northrop Corp./Aircraft Division, Torrance, CA, which also provided the project a home base for 15 years; International Die Casting, Gardena, CA; McDonnell Douglas, Long Beach, CA; Rockwell International, Downey, CA; and TRW Redondo Beach, CA.

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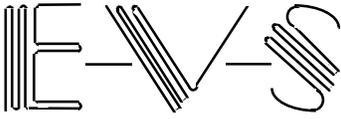
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Motion Sickness Remedies

By Ann Asberry

What exactly is “motion sickness?” Different textbooks have different definitions, but basically motion sickness – also called air sickness, sea sickness or car sickness – is nausea and vomiting triggered by disturbance of the vestibular apparatus. The vestibular apparatus refers to the semicircular canals of the inner ear that we use to maintain balance and sense orientation and movement.

One theory of motion sickness focuses on sensory conflict. Cruise ship passengers are far more likely to get seasick when below because their vestibular sense detects motion while their eyes reveal motionless surroundings.

Air sickness is more problematic, however. An outside view doesn’t necessarily help in aviation, because flight constantly presents sensory conflicts. During a coordinated turn, for example, our eyes show a tilted horizon while our vestibular sense says we’re perfectly upright. Uncoordinated maneuvers and turbulence provide more complex conflicts. In a cloud, we may receive all sorts of vestibular sensations while our eyes report a featureless, horizonless void.

Why are some people affected more than others? Pilots and drivers tend to experience motion sickness far less often than passengers. Going back to the sensory-conflict theory, we think that motion sickness is triggered by discrepancies between anticipated orientation and actual orientation. If you’re at the controls of the airplane (or boat or car), you tend to know what’s coming and this seems to confer a certain amount of immunity. Being in control of how long the flight will last and having the ability to end it at will is also an important factor in relieving the anxiety that contributes to motion sickness.

Motion sickness is also a learned malady that can be unlearned. Some persons can deal with the sensory conflicts through accustomization.

Currently there are no medications for pilots approved for use by FAA to combat motion sickness. There is other help though. One over-the-counter “drug” which has no systemic effect and is therefore okay in the FAA’s eyes. It’s called Emetrol (phosphorated carbohydrates) and comes as a sweet syrup. It is a formula based on the traditional use of Coke syrup as a nausea treatment (back in the days when soda fountains actually used the stuff). Dosage is one teaspoon per hour, and some people find it helpful.

March 1999

Non-drug remedies include the use of ginger powder (from the grocery store) loaded into gelatin capsules and taken before flight. Ginger turns out to be a natural anti-emetic. Another idea is to eat a bagel just before flight. There’s actually some medical basis for this, as eating a bagel would be similar to taking Emetrol – a carbohydrate.

Acupuncture is another unconventional treatment that has been shown effective by scientific studies in the suppression of nausea and vomiting. So-called “acupressure bands” have started appearing in pilot shops and catalogs. These are elastic bands with protrusions that apply pressure to the wrist, supposedly to stimulate the median nerve in the fashion of acupuncture.

The success of acupuncture as an anti-nausea treatment led to the development of a device called the ReliefBand, that has just come onto the market. The ReliefBand looks like a white plastic wristwatch with a white elastic band, but is worn on the inside of the wrist and electrically stimulates the median nerve. The device has a dial that permits it to be turned on and off and adjusted to any of five stimulation levels. Nominal battery life of this product is 144 hours at the medium-intensity setting. Batteries are not replaceable. The current 144 hour ReliefBand retails for about \$120, but Aeromedix sells it a discount for under \$100. Visit their Web site at Aeromedix.com.

Currently the ReliefBand requires a doctor’s prescription. The developer, Woodside Biomedical, has applied to the FDA for over-the-counter status for the ReliefBand device and it is expecting their request will be granted and that you’ll be able to purchase the device without prescription, perhaps as early as mid-1999. In the meantime, Aeromedix is making the ReliefBand available now. Anyone ordering the unit from Aeromedix is automatically issued a prescription just to keep thing perfectly legal, and to keep the FDA and the lawyers at Woodside Biomedical happy. Source for this information is from avweb.com



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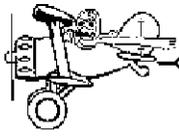
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