

**EAA CHAPTER 10**

JUNE 2009

**PRESIDENT'S REPORT FOR JUNE**

Good Morning,

Our May Picnic/meeting was a success! Wonderful weather and one of the largest turnouts that I can remember. I thank everyone who pitched in to set up and clean up.

This month's program will be a look at Jim Smiths newly completed Zenith 750. His is Zenith's first kit built Light Sport Aviation 750. From reports he has had some interesting issues to overcome.

I received an E mail from Jim Bridenstine of the Tulsa Air and Space Museum. He was our speaker at the March meeting. He and Jim Gallaway have worked out a program and a date for an EAA day at the museum. It is actually going to be 2 days, Friday June26 and Saturday June 27. Jim will be setting up Press and TV coverage for the event. We would like to have a dozen or so airplanes in attendance for display and their pilots to talk to the press and public. This will be some great publicity for the EAA, our Chapter, and I'm sure a lot of fun for everyone involved. Anyone interested in donating a day (or two) please contact me or Jim Gallaway.

Regular meeting Monday June 15<sup>th</sup>, 7:30 P.M.

Thanks,

John Nys, President Chapter 10



## LAST ANNUAL BI-PLANE FLY-IN BY TERRY BOSWELL

The final annual Bi-Plane Fly-In was convened at Bartlesville on 4–6 June and proved to be a smashing success. Dick Rutan's keynote comments on the Flight of the Voyager at the country club supper on the 4<sup>th</sup> was well attend and equally well received. This set the tone for about 75 Bi-Plane to gather on the apron in some of the most beautiful God given weather one might imagine.

There were numerous Stearmans and three gorgeous Staggerwings plus every conceivable vintage of modern midget with two wings and full acrobatic capabilities with more between. On Friday afternoon the only flying Zenith arrived with unheralded majesty. Several Stearman were used to ferry passengers around Bartlesville while another Bi-Plane provided open cockpit rides for the daring at some \$60 per passenger. Folks were standing in line for this experience, four per trip.

All day participants were treated to smoking takeoffs, high speed passes, steep pull ups and graceful diamond formations of Stearmans. Visitors just stood with their mouths open in silence. Appropriate

30s and 40s music could be heard at intervals between the whines of props biting the air as they strained for airspeed and altitude.

There was a steady stream of visitors often arriving in their Cessna or Porterfield or another unusual craft like a radial powered L5E, another one of a kind monoplane. Many individuals came by car so the crowd flowed around parked aircraft and thru exhibits and vendors with ease protected by volunteers who parked and shepherded each craft with ease.

A barbeque supper Friday was a sell out. The program highlighted historical accomplishments for the past 23 years and the gift of aviation that Bi-Planes brought to our cherished aviation fraternity. Mr. Charlie Harris, Tulsa's Vintage Aviation, has been a leader over the years. He said, "this is a fitting send off for our final annual gathering." We can add our Well-Done to others who are giving well deserved accolades to our fellow aviators even if they still believe two wings are necessary and better than one! I bet some of them are still using Castor Oil.

## UPCOMING EVENTS

Gainesville, TX, June 12–13 Texas Fly-In

St. Louis, Creve Coeur, MO, June 18–20, American Waco Club Fly-In

Claremore International Airport monthly Fly-In 27 June, 1100 until 1300.

Sand Ridge Bugger Bash, 28 June, Noon until.

Grand Lake, Duck Creek, OK, July 4th, Warbird Squadron 10 Flight Exhibition

### Who Brings Snacks?????

Please bring a snack to the membership meeting during the month that corresponds to the first letter of your last name as listed below:

January	A-C
February	D-F
March	G-H
April	I-L
May	Annual Picnic
June	M
July	N-P
August	Watermelon Feed
September	Q-S
October	T-V
November	W-Z

## RECURRING CHAPTER 10 EVENTS

- 1st Monday of the month Chapter business meeting at our hangar 7:00 p.m.
- 2nd Monday of the month Newsletter folding session at our Hangar 7:00 p.m.
- 3rd Monday of the month Membership meeting at our hangar 7:30 p.m.
- 1st Saturday after the 3rd Monday Pancake Breakfast at our hangar 7:00-9:30 a.m.

## FLIGHT OF THE VOYAGER BY TERRY BOSWELL

Dick Rutan, pilot of the Voyager, spoke at the last annual Bi-Plane Fly-In following supper on 4 June at the Bartlesville Country Club. He flew the Voyager with Jeana Yeager, taking off on 14 December 1986 from Edwards AFB to Edward AFB in the first and only non-stop, non-refueled flight ever to circumnavigate our globe, returning 9 days later. This evening was well attended and included many from EAA Chapter 10. For those who missed, a summary follows. I hope to include items of interest to pilots beyond the article in Friday's Tulsa World.

Dick has been a pilot since high school. He was one of the 325 Misty pilots who flew F-100s as fast forward air controllers during the conflict in Vietnam, a feat that marks him as acquainted with bravery. He was shot up during one of those missions and bailed out in the South China Sea. Yes, he was decorated for his bravery which he regards as normal for fighter pilots. For the flight of the Voyager he received the US Citizens Medal of Honor.

This flight hawks back to many aviation achievements that began with an idea and the dedication necessary to build the craft capable of bringing their dream to fruition. The dream began during lunch at a Mohave Inn in '81 when Dick and his brother, Burt, an aircraft designer began to imagine this flight made possible by carbon fiber, Kevlar and fiberglass instead of Aluminum. Carbon fibers are five times stronger than steel at half their weight. This is a directional strength and led them to the conclusion they could build an aircraft capable of carrying six times its empty weight in fuel. In theory, a range of 28,000 miles was possible.

In 1926, we recall Douglas Aircraft Company built six float equipped Jenny powered float planes for an inaugural round the world flight. Four aircraft departed and two returned safely. Their top speed was 80 kts. Wiley Post and Howard Hughes subsequently circumnavigated the globe in northern latitudes, flying about 15,000 miles. In '49 a B50A circled the globe

but required five in-flight refueling. In '62 a B52D flew 12,500 miles unrefueled.

Because no one had ever flown around the world without stopping or refueling the Rutan team knew they had a worthy challenge but only shoestring funding. Plans began to fly near the equator so the flight would be at least 25,000 miles. They soon realized that winds at the equator are easterly, not westerly as we are accustomed. Flight completion was essential because they realize that 2nd place is never remembered. Further, to be declared a winner one had to live for 48 hours beyond the event.

This team was fully aware that about 30% of ideas like this end in abject failure. However, much can be learned in failures. Strength comes from failing when evaluated. Dr. Von Braun pointed out that adventure is the essence of life for those with the courage to undertake the risk. The Rutan brothers recalled their mother's striving for excellence.

Dick began his remarks by remembering some aviation heroes like Admiral Jeremiah Denton who was a Vietnam POW for 6+ years but regarded his service as an honor under difficult circumstance. He then regaled us with a recent copilot story of seeing a new AN-2 bi-plane lost at the North Pole following a landing on thin ice during the return flight. This endeared the Bi-Plane Association to this aviation hero. He commented that he always wanted to visit Yellow Knife in the Yukon but their visit after rescue was enough to satisfy that longing.

Burt knew he had to design a craft with adequate mission flying qualities but that extending the range would reduce stability. They focused on a twin boom craft with two engines. The forward engine would be used only for takeoff, then shut down and feathered to reduce drag. The twin vertical stabilizers were equipped with only a rudder on the right side. When Dick men-

(continued on next page)

## FLIGHT OF THE VOYAGER (CONTINUED)

tioned it would be hard to turn Burt replied it would not be necessary to turn when flying around the world. The wing span was 110 feet that could flex 35 feet in either direction. Fifty percent of the fuel would be used in the first twenty five percent of the flight. If an in-flight anomaly exceeded more than 1.2 g's occurred during the first three days of the airframe would probably have failed.

Continental helped the team with a liquid cooled, 200 hp engine under development for the rear pusher. The seal for the coolant pump proved to be a difficult hurdle to overcome and kept Dick worried throughout the flight. It was Jeana's job to monitor a fluid sample during the trip for seal deterioration. The rear engine did not have a starter to reduce weight. It was hand propped by a WW II P-51 pilot. Cutting Jeana's hair added ¼ mile to its range! Perhaps less distance to swim.

Dick described the flying qualities as atrocious at best. After establishing an attitude the plane would begin to digress within a few seconds. It was necessary to temper rudder applications to maintain control. Turns created flight control issues. Further, he had to unload to eliminate flight transients because of the Voyager's dihedral. They computed that uncorrected oscillations would cause structural failure within 15 seconds. After any 6 hours of flight his right hand would be numb. An autopilot was necessary for the flight.

The planned fuel burn was 9 miles per gallon for the overall journey. During one test flight the wooden MT prop failed and was replaced with a US item. During preparations a military pilot gave Dick a pair of invaluable night vision goggles which permitted avoiding storm buildups during the dark parts of nights.

As many of us recall the Voyager was flown to Oshkosh in '84. This was a long sortie and integral to development efforts before the round the world flight. Takeoffs for these long flights were from the 15,000

foot RW 4 at Edwards that borders a dry lake bed that is 7 miles in diameter. Aborting was problematic since there was only a brake on the nose wheel. Surviving any emergency that damaged the Voyager was highly unlikely.

Before the fateful flight their crewchief spent the entire night loading some 1200 gallons of aviation fuel into a 926 pound aircraft giving it a final weight of 9,700 pounds. Refueling required all night. Care was exercised with 18 tanks so as to not damage the airframe by exceeding structural balance and strength limits. An additional 350 pounds was loaded. They would arrive back at Edwards with ½ of 1% of their takeoff fuel.

The night before this flight Dick could not sleep but tried in a barracks at Edwards. A flight surgeon waked him with a pee sample box to carry on the flight to verify his in-flight drug condition. We can all understand his anxieties.

For the takeoff, flags were placed along the runway with speed requirements. They required 68 KIAS at the midpoint. The morning was cold, a necessary condition. However, frost on the airframe delayed departure since it had to be melted. On the roll Dick said they were 4 knots slow at the midpoint. He decided aborting was not possible. The takeoff required some 14,800 feet of the 15,000 foot runway, considerably longer than the planned 8000 feet. The roll was 2 minutes and 10 seconds or an eternity.

The boom tanks gave the wings a negative dihedral instead of planned positive dihedral, extending the takeoff roll. When the nose lifted off their initial rate of climb was 100 feet per minute. Soon it crept up to 200 and finally to 300 feet per minute. One of the winglets was damaged during the run so the other was shaken off. Only the video does justice to the wing bend at lift off. My wife Judy says the wings looked like a swan in-flight.

## FLIGHT OF THE VOYAGER (CONTINUED)

He cranked up the nose wheel and Jeana cranked the mains. She crimped each gear cable to keep each wheel up and locked. Retraction time, 10 minutes.

Burt followed the Voyager until 100 miles at sea before wishing them God's speed for the flight. The sun would rise and set 9 times before they returned. This flight was planned to maximize moon time because the night vision goggle batteries have a limited life. Night observations were limited to 3 to 5 seconds each. Moon rise shifts 1 hour and 20 minutes daily. A small airborne radar was used to avoid thunderstorms and mountains.

The flight was planned to avoid countries that could detect and down the Voyager like Vietnam. Also, avoiding areas of convective activity (thunderstorms) or high mountains was paramount. Their weatherman was considered an unsung hero. He helped them avoid a typhoon over the Pacific. Over Africa they battled thunderstorms up to 25,000 feet since the Voyager was unpressurized and had only limited O<sub>2</sub>. Normal cruise altitude was 8,000 feet.

As they reported to ARTCC over Sri Lanka it was apparent this flight needed to eliminate most contact with these agencies. Dick was so tired at this point that an inviting beach was difficult to avoid. Bose noise canceling ear phones were a great aid since the noise level in the Voyager was about 110 db. Mission control provided subsequent position reports via telephone calls.

Jeana waked Dick as they approached Mt. Cameroon in western Africa because their radar showed a dark spot ahead. He realized they were close to a peak stopping impact. Jeana shifted the heading using the autopilot because there was not enough time to change positions.

While crossing the mid Atlantic Ocean they encountered a thunderstorm that put the Voyager into a vertical dive. Recovery gave Dick a new appreciation for the strength of his lighter craft and renewed deter-

mination to complete the flight.

After crossing Central America they proceeded west of Baja toward Edwards. Jeana used the small fuel pumps for balancing transfer periodically. After calling Burt it was computed they required some 28 gallons from their position to make Edwards. The feed tank held 42 gallons and was the only tank w/ an indicator. The only available fuel was in the outboard wing tanks. When the transfer pumps were switched on the right pump failed with a life changing brilliance. They were able to transfer 3 gallons from the left outboard tank having evidentially lost the rest when the winglets were shed. They used a small pair of pliers to change the pumps but not before the rear engine quit.

Starting the thoroughly cold soaked front engine, an effort to extend their flight, took 5 ½ minutes, another eternity. The forward engine was not capable of sustaining flight alone but it did change their attitude and the rear engine subsequently self started when its fuel starved situation self corrected with their attitude change. Jeana transferred enough fuel in 20 minutes from the right outboard tank to reach 28 gallons and ensured a successful flight. During this emergency they descended from cruise altitude to 3500 feet.

As they approached the California coast Burt flew out to intercept them. They elected to fly around Edwards for 20 minutes to extend the flight to 9 full days. Unknown to Dick and Jeana huge crowds of fans gathered at Edwards for their touch down. Following landing and verification of their flight from onboard equipment and three crisp Confederate bills their records were entered in appropriate books since the crew subsequently lived for more than 48 hours. 9 days, 3 minutes and 44 seconds for a distance of 26,358.4 statute miles, a unparalleled success.

The coolant pump failed on a subsequent flight!

## CHAPTER 10 CLASSIFIED ADS

**FOR SALE BY OWNER** Glasair I/II RG, 300 hrs TTAF, Lycoming O-320 70 hrs SMOH, Lightspeed electronic ignition, High compression pistons, Large rudder, Dual sliding canopy, Panel mount GPS, xponder, intercom and more, New 3 blade MT propeller, New custom interior, Extended wing tips 80% completed, Ready for your paint, \$55,000 See at Gundy's (O38), Owasso, OK Contact Mark Fridley @ 918-274-3574 or rmfridley@cox.net

**Franklin Aircraft Engine** Model 4AC171 60 HP.  $3\frac{7}{8}$  bore x  $3\frac{3}{8}$  stroke 6/2 C.R., s/n 2052,  $1\frac{7}{32}$  venturi, Eisenman magnetos, complete, No log book, \$1000, Contact Ken Smith 698-4129.

**Lycoming O-235-0** T.C. 223, 100 HP, 2600 RPM, SM 1571-15, Two magnetos, no carburetor, otherwise complete., No logbook., \$1,000 Contact Ken Smith 698-4129.

**Lycoming O-290-D2** 135 HP, T.C. 229, no magnetos, has vacuum pump, engine damaged at L/H magneto mount area, L/H crankcase broken out, accessory case broken out, data plate is titled Lycoming Aviation Engine, No logbook, \$1,000 Contact Ken Smith 698-4129

**Waco UMF-5 Biplane** Waco UMF-5, 218 hours TTAE, 240 HP W-670 Radial, Radio, intercom, and ELT, 40 gal fuel, 350 mi range, 110 lbs baggage, 3 place, 25 awards: Grand Champion @ Biplane Expo, AAA Blakesburg, TX, Nebraska & Kansas, Oshkosh & Hondo, TX. This stunning beauty is built to Waco prints from the Smithsonian and flies better than it looks. 9500 hour build time over 12 years. Finished 2004. \$200,000. Contact John Hudec, 918-371-5029

**Acreage for Sale:** 2.5 Acres with 330' of Runway frontage, Airman Acres Airfield, Collinsville OK. Sets on dead end road. No covenants. Secluded area. Build exactly what you desire. \$67,500 Darren 918-857-2728.

**1946 Aeronca 7AC**, Continental A65, 6078 TT, 167 TSMOH, LSA qualified, new struts, wing spars, and cover, Millennium cylinders, 32K firm 918-371-2001

## THE GREAT AIR BATTLE A STORY TOLD BY AN OLD FIGHTER PILOT

This is from a retired fighter pilot who runs a 2000 acre corn farm up around Barron, WI, not far from Oshkosh. He used to fly F4Es and F-16s for the Guard and participated in the first Gulf War... Submitted for your enjoyment, and as a reminder that there are other great, magnificent flyers around.

I went out to plant corn for a bit to finish a field before tomorrow morning and witnessed The Great Battle.

A golden eagle - big bastard, about six foot wingspan - flew right in front of the tractor. It was being chased by three crows that were continually dive bombing it and pecking at it. The crows do this because the eagles rob their nests when they find them.

At any rate, the eagle banked hard right in one evasive maneuver, and then landed in the field about 100 feet from the tractor. This eagle stood about 3 feet tall. The crows all landed too and took up positions around the eagle at 120° apart, but kept their distance at about 20 feet from the big bird. The eagle would take a couple steps towards one of the crows and they'd hop backwards and forward to keep their distance.

Then the reinforcements showed up.

I happened to spot the eagle's mate hurtling down out of the sky at what appeared to be approximately Mach 1.5. Just before impact the eagle on the ground took flight, and the three crows which were watching the grounded eagle, also took flight thinking they were going to get in some more pecking on the big bird. The first crow being targeted by the diving eagle never stood a snowball's chance in hell. There was a mid-air explosion of black feathers and that crow was done. The diving eagle then banked hard left in what had to be a 9G climbing turn, using the energy it had accumulated in the dive, and hit crow #2 less than two seconds later. Another crow dead.

The grounded eagle, which was now airborne and had an altitude advantage on the remaining crow, which was streaking eastward in full burner, made a short dive then banked hard right when the escaping crow tried to evade the hit. It didn't work - crow #3 bit the dust at about 20 feet altitude.

This aerial battle was better than any air show I've been to, including the war birds show at Oshkosh! The two eagles ripped the crows apart and ate them on the ground, and as I got closer and closer working my way across the field, I passed within 20 feet of one of them as it ate its catch. It stopped and looked at me as I went by and you could see in the look of that bird that it knew who's Boss of the Sky. What a beauty!

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Note: For security purposes, you must remove the "9" from the front of the listed e-mail address to make it valid.

**EAA CHAPTER 10 MEMBER APPLICATION/RENEWAL FORM  
DUES ARE \$25.00 PER YEAR - JANUARY 1ST TO DECEMBER 31ST**

Name \_\_\_\_\_  
Co-pilot/Spouse \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State & Zip \_\_\_\_\_  
E-mail Address \_\_\_\_\_  
Home Phone \_\_\_\_\_  
Work Phone \_\_\_\_\_  
National Membership # \_\_\_\_\_

Aircraft owned \_\_\_\_\_  
\_\_\_\_\_  
Projects/% complete \_\_\_\_\_  
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Bring this form to next meeting or mail to:  
EAA Chapter 10 Treasurer  
P.O. Box 1985  
Owasso, OK 74055



# EAA Chapter 10

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We're on the web!

[eaa10.org](http://eaa10.org)

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**W H O B R I N G S T H E S N A C K S : M**



Dryden Flight Research Center E87-0029-2 Photographed 1986  
Voyager landing at Edwards Air Force Base NASA photo