

AS THE PROP TURNS

**EXPERIMENTAL AIRCRAFT ASSOCIATION
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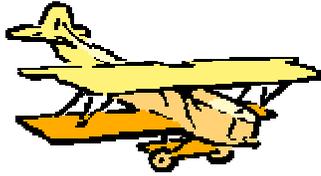
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EAA Chapter 315 Meeting March 2014

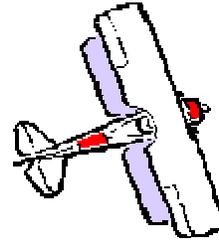
The March 2014 meeting of EAA Chapter 315 was called to order at 7:40 PM by President Bob Lorber. Due to cold weather only 8 members were present.

The Treasurer reported \$1219.49 in our treasury. He reminded us that 2014 dues are due in January. We also owe Chuck Pittman \$100 for placing a booster add in the program for the New Jersey Aviation Hall of Fame Annual Banquet.





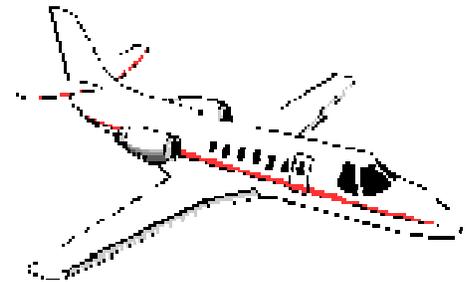
OLD BUSINESS



- We discussed the presentation on electro-magnetic catapults from the last meeting. We all found the presentation fascinating. Thanks to Eli for hosting the program!
- Jay Lazewski invited us back to his private airport for the July meeting. We discussed having this meeting on July 13th (with rain date for July 20th), so that we can have more time to fly, eat and talk. Please bring guests, especially if they are interested in aviation. Details will be published in future newsletters.



NEW BUSINESS



- Lew Levison suggested Leon Schulman, as a potential guest speaker for one of our meetings. He is 93 years old and a former B-26 pilot, who towed targets for fighter squadrons. He was also involved in early work on early drones made by Culver.
- Lew L. saw a show on how too much technology in the cockpit makes the pilots less able to hand fly the airplanes.
- We discussed an article that appeared in a Florida paper about fewer and fewer pilots. We know that both EAA and AOPA are trying to expand the definition of LSA to include more airplanes. This would mean that many of the airplanes we fly could be flown with a "drivers license" medical (take look here for some details: http://www.eaa.org/news/2013/2013-01-10_FAA-still-reviewing-medical-certification-exemption-request.asp)
- We are not sure if we will be able to have our Young Eagles event at BLM this year.
- Peter Weinhorn is planning a flyin and a Young Eagles day for June 21st at Eagle's Nest Airport.
- We talked about having June and August meetings as airport picnics. We can ask everyone to chip in \$5 per person to cover the cost of the food.

Next meeting will take place on April 7th, at 7:30 at Old Bridge Airport office.

Richie Bielak
Assistant Secretary

Leon Schulman smiling on the way back into the Air Force after training operations in Mexico back in 1942.

"UAV's" — What are they and how did they come into being?

HISTORY OF DRONES

by Leon Schulman

Unarmed Aerial Vehicles have been prominent in many recent news articles in print and on TV. They are playing a major role in our entanglement in the Middle East. These large aircraft, flown by ground based pilots, fly "search and destroy" missions almost daily instead of human piloted aircraft, i.e. fighters, bombers, etc. Early UAV's were used as anti-aircraft targets during the early 1940's and were controlled by remote pilots nearby or from another aircraft. There were many other uses for these unarmed aircraft and the following reflect some personal experiences I've had in 5-6 areas.

Leon's Solo Flight in the Walter "Vibrator" BT-13 in August 1942.

Recently I was approached by the Air Force Pilot's "Class of 43K" (Dec.1943) - to give them some information on the work I was doing during my service as a pilot and aircraft engineering officer during World War II.

During the late 1930's I flew free-flight model airplanes, and worked with developers of some of the earlier radio control systems in the NY/NJ area. I helped test fly some of these models, hoping to someday pilot the real thing.

Shortly after Pearl Harbor (December, 1941), I learned that the Army Air Corps had a program for qualified young men to become aviation cadets. I have always wanted to be a pilot and this was my chance to do the necessary tests and qualify for the Air Corps pilot training program. I had to wait more than a year before I was notified to report and take the additional tests. In the meantime, I was working as the director of the 85 Kresge Department Store Model Airplane Club. It was a full-time job running the club and teaching youngsters how to build and fly model airplanes. I continued to go to school at night working on earning my degree. In March 1943, I was finally called for the aviation cadet program and I was

1941), I learned that the Army Air Corps had a program for qualified young men to become aviation cadets. I have always wanted

Leon returning from his first cross-country flight in an AT-6 in Greenville, Mississippi in 1942.

BT-13

FLY RC MAGAZINE

Article about Leon Schulman and early drones.

George C. with a nice picture of an airplane from the December fly-in in Massey, MD.



TWENTY YEARS AGO IN SPORT AVIATION (March '94)

The cover of the March 1994 issue of Sport Aviation featured Bill Turner's recently completed de Havilland DH 88 *Comet* replica. In 1933 a wealthy Australian businessman by the name of Sir MacPherson Robertson sponsored an air race from London to Melbourne, offering a prize of 50,000 Pounds to the winner. The DH 88 model was designed specifically for the race by de Havilland and three were constructed. A *Comet* sponsored by the Grosvenor House Hotel won the race in a little less than 71 hours, followed some 19 hours later by a KLM DC-2 carrying airline passengers. Roscoe Turner was third flying a Boeing 247. Bill Turner, who had built replicas of many 1930's racers, was approached by Tom Wathen to build the replica. They were aided by Englishman Ronald Paine, who had overseen the restoration of the original Grosvenor House *Comet*. The only deviations from the original design were modern brakes, a full set of modern instruments in the cockpit, and a Cessna 210 hydraulic system to raise and lower the landing gear. Ron had reported that the original DH 88 which had no wash out in the wing suffered from chronic stalling of the tips at landing speed, causing a sudden wing drop. On his advice Bill's team built in 3 degrees of washout in the replica. Bill reported that the plane flew wonderfully and except for the lack of forward visibility on final.

Budd Davisson related the story of the restoration of a rare P-51D *Mustang* that not only saw combat in World War II, but had also been flown by Robin Olds. Jim Shuttleworth had flown a T-6 for many years, and began looking for a *Mustang* to purchase. He was not happy with the quality of any that he could find for sale, so he ended up purchasing a project that was being rebuilt after an off airport landing. In addition to completing major repair work on the fuselage, he also upgraded every system as much as possible with modern components to achieve the safest and most reliable plane possible. He also arranged for General Olds to be reunited with the plane at Oshkosh in 1994. Budd accompanied the article with some of the highlights from an interview he did with General Olds. For those of you who are too young to have heard of Robin Olds, he showed up in the European theater at the beginning of 1945 and scored 12 victories flying the P-38 and P-51 before World War II ended. Due to an assignment in Air Defense Command (an important role during the Cold War), he missed combat in the Korean conflict. In 1966, at the age of 44, he was put in command of the 8th Tactical Fighter Wing at Ubon Royal Thai Airbase. Before leaving the States he checked out in the F-4C *Phantom*, completing the entire 14 step syllabus in 5 days, and after arriving in Southeast Asia he flew as many missions as he could work into his schedule. He scored 4 more victories in the Viet Nam conflict to become a triple ace. He later related that he had passed up the opportunity to shoot down at least 10 more VPAF MiGs because he had heard through the grapevine that if he scored one more victory he would be relieved of command and brought back to the U.S. as a publicity asset.

Jack Cox contributed an article describing the *Pulsar* owned and built by Pat Keesler. Pat had been a big fan of Mark Brown's *Star Lite* design from the first time he saw it, but as it was single-place it did not fit his needs. When the *Pulsar*, essentially a longer, wider, and sleeker two-place version of the *Star Lite*, was introduced, Pat ordered the fuselage and wing kits almost immediately. Pat reported that it was fun and easy to fly, and although he could cruise at 130 mph using fuel at the rate of 4 gph, he preferred what he called the "sweet spot", cruising at 120 mph while burning only 3 gph.

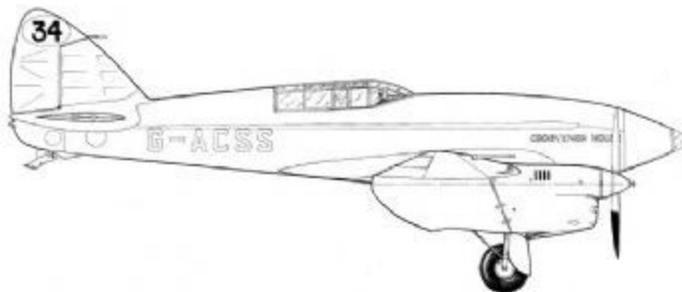
Richard Finch described the installation and operation of an aluminum block Buick V-8 engine in Glenn Smith's RV-6A. He reported that from the firewall forward the auto conversion, using a cog belt reduction drive system weight only 10 pounds more than a Lycoming O-320 engine, and produced the same 160 hp. It was cheaper to buy, overhaul, and operate, as well as being smoother and quieter. A novel idea for cooling was to use two aluminum core evaporator units from a GM air conditioner system mounted in what appears to be the air inlets for an air-cooled aircraft engine. This greatly simplified the cooling installation and resulted in an almost stock looking RV-6 cowling.

In "Which Unlimited Racing Airplane Design" Richard Scherrer discussed several of the more successful modified World War II military fighters and compared them with a fresh sheet of paper racing plane. He concluded that the present flock of planes reached a severe drag rise at around 500 mph or .6 Mach and any further improvements would be prohibitively expensive if possible at all. He calculated that a design with swept wings, a thin airfoil, and a specially designed propeller could theoretically reach .9 Mach. He was involved in the design of the R-114-C3 that would have a long, slender fuselage, 6% thick, 30 degree swept wings and be powered by two 1000 hp big block automotive racing engines. A full scale mock-up was almost completed, but he did not say if funds were in place to continue with the project. I do not remember any such plane being completed and flown.

Dave Gustafson treated us to an account of his flight in the Budweiser *Bud 1* blimp. Orrin Nicks of College Station, TX related the sightseeing and golfing trip he and his wife took around the western states in their 1960 Cessna 182. In Antique/Classic Showcase H.G. Frautschy highlighted a Waco UPF-7, a Waco QCF-2, and a 1937 Boeing Stearman. Also included was a Piper *Tri-Pacer* owned by Corky Childes of Bridgeport, AL. The Piper was significant because it was Serial Number 2, and was the oldest *Tri-Pacer* in existence. The original prototype had been load tested to destruction at the factory in Lock Haven.

Norm Petersen covered the Annual Pioneer Airport Ski-plane fly-in held on January 22, 1994. In "From The Archives" Dennis Parks talked about parasol designs from the early 1930's. In the "Craftsman's Corner" Don Hipskind described a breathing device called "Hobby Air 1" that provided an inexpensive way for homebuilders to protect their lungs from toxic fumes generated by epoxy and paint. In "Hints for Homebuilders" Mike Bender provided a design for an electrical system malfunction warning device. And in the "Sportplane Builder" Tony discussed the uses and installation of anchor nuts.

Bob Hartmaier



The cover of the April 1994 issue of Sport Aviation featured a Swearingen *SX300* owned and built by Dave Miller and Dick Tews. From the start, both builders wanted to prove that with the proper care, time and effort, a metal plane could look as good and fly as well as a composite design. To that end they built adjustable metal jigs for all the major airframe assemblies and trued up all bulkheads, stringers, ribs, etc., using a transit level in order to avoid any wrinkles in the skins. Any ever so slightly imperfect rivets were carefully drilled out and done over. Of course, the final finish wasn't just applied to the exterior of the plane, but in the engine compartment, wheel wells, and behind the instrument panel. The plane was powered by Lycoming IO-540 swinging a Hartzell 3-bladed constant speed prop. Dick Tews reported a speed of 252 knots, but did not say if that was at full power or a cruise setting, or at what altitude it was recorded.

Bud Davisson contributed an article describing the Wedell-Williams "Gilmore Special" *Model 44* built by Jim Clevenger and Steve Halpern. The first *Model 44* built by the team had been a replica of Jimmy Wedell's plane that bore race number 44. It was built to be as close as possible replica of the plane that Jimmy flew to victory in the 1933 Thompson Trophy race. It was found that the plane had a very thin wing that today would only be used as an airfoil section for a control surface. It also had a very small fin and rudder, and the C.G. was at the aft end of what would be considered the normal envelope. The thin wing necessitated a high approach speed, on the order of 125 knots, and at least 4,500 feet of runway for landing. It also was unstable in yaw, and very sensitive in pitch due to the aft C.G. Jim flew it for a time and then put it on long term loan to the Wedell-Williams museum in Patterson, Louisiana. Steve's Model 44 was to be a replica of Roscoe Turner's Number 121 sponsored by Gilmore Oil that Turner flew in winning the 1934 Thompson. Steve wanted his version to be more practical so that he could fly it around to various air shows and fly-ins in order to share the history of 1930's air racing with as many people as possible. Learning from the experiences with Number 44, Steve elected to make some changes with Number 121. To slow the landing speed he used a thicker airfoil as used on the Beach Staggerwing, and increased the span 3 feet. His solution to the yaw instability was to increase the size of the fin and rudder, as well as to raise the turtle deck between the cockpit and fin. This not only contributed an increase in tail volume, it visually masked the larger fin and rudder by keeping everything in the same proportion as the original. The 1934 version of Number 121 used the 450 hp P&W R-985. Steve replaced that with a 600 hp R-1340, thus gaining a couple hundred pounds in the nose, and getting the C.G. closer to where it should be. Roscoe Turner later did the same thing, but by then was sponsored by Heinz. Steve couldn't bring himself to use the drab Heinz 57 colors, so he risked the wrath of the purists and finished the plane in the beautiful 1934 Gilmore Oil paint scheme. He reported that any trace of yaw instability was gone, and he could fly the pattern at 100 knots and come across the fence at 95 without the feeling that the plane was going to drop out of the sky. By the way, Number 121, N61Y, is the only Model 44 still in existence. Today it resides in the Crawford Museum in Cleveland. Fred Crawford, whose money went to benefit the museum, was the proprietor of Thompson Oil Products, who sponsored the Thompson Trophy races. Today the company is part of TRW.

Several articles gave a United Kingdom slant to recreational aviation. Peter Underhill, Chairman of Britain's Popular Flying Association, described the *Europa*, a new design that was conceived by Ivan Shaw of Yorkshire and designed by Don Dykin, recently retired Technical Director for British Aerospace and past Chief Aerodynamicist for the Airbus project. The neat two-place, side-by-side plane rode on one large tundra tire in the center of the fuselage with retractable outriggers on the wing and a tail wheel. The wing featured a slotted flap spanning 70% of the trailing edge of the wing and the entire plane was of all-metal construction. Powered by a Rotax 912, the *Europa* stalled at 43 kts flaps down, and cruised at 130 kts True at 8,000 ft.

Pete Thorn introduced us to Clive Du Cros, who decided that the world need a replica of the prototype *Spitfire*, and so designed and built it. It was of all wood construction, and was powered by a V-12 Jaguar engine converted for aircraft use, but in outward appearance it was true to the original prototype from 1936. Pete had formerly flown *Spitfires* for the Battle of Britain Memorial Flight, and was asked to do the initial test flights. He did not report any performance numbers, but was very pleased with the flying qualities of the replica.

H.G. Frautschy described G-ACDD, a deHavilland DH.83 *Fox Moth* that had been brought to Oshkosh by owner Roger Fiennes. The *Fox Moth* was a small airliner that seated four passengers in a compartment between the wings while the pilot sat in an open cockpit above and behind them. It used many parts, such as the wings and tail group, from the DH.82 *Tiger Moth* trainer, and was built both in England and in Canada. Roger Fiennes' plane had originally been built in 1932 for the Prince of Wales, later King Edward VIII, and then the Duke of Windsor when he abdicated the throne. The Prince had it finished to a "high specification", with a full leather interior and a three-place cabin. It was finished in crimson and blue, the colors of the Prince's WWI regiment. He owned it for less than a year before purchasing a DH.84 *Dragon*. After that the plane saw service in Europe and New Zealand, and ended up being left to rot on the island of Fiji. Colin Smith, a New Zealand rancher who had started a deHavilland restoration business, gradually recovered all the usable bits and pieces as well as sourcing a restorable replacement fuselage. Roger Fiennes originally came in contact with Colin while looking for a *Gypsy Moth*, but ended up purchasing the Fox Moth and hiring Colin to restore it for him. The interior was finished as it had been for the Prince, in dark red leather and three passenger seating. The exterior received a dark blue paint scheme with white trim. After some 5,000 hours of labor and \$125,000, the finished plane was shipped to England aboard the Queen Mary 2. At Oshkosh '93, the plane was awarded the Reserve Grand Champion Lindbergh Trophy.

In "Good Approaches, Good Landings", Budd Davison contributed an article in which he discussed proper planning in the traffic pattern to help make good landings. Steve Buss gave us a history of the EAA's B-17 "Aluminum Overcast", from its delivery to the Army Air Force in 1945 to its donation to the EAA in 1979. In the "Craftsman's Corner" Neil Bingham described how to build a control quadrant. And in the "Sportplane Builder" Tony talked some tips and techniques for drilling accurate holes in various materials of different shapes and sizes.

Bob Hartmaier



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E.A.A CHAPTER 315 “As The Prop Turns”

Newsletter of the Monmouth-Ocean County New Jersey Chapter of the
Experimental Aircraft Association— April 2014

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**Next meeting Monday April 7th, 7:30 PM
Old Bridge Airport Office**