

HANGAR TALK

NEWSLETTER OF EAA CHAPTER 58, OGDEN, UT

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Chapter 58 meets monthly on the **FIRST Thursday of the month**. Meetings are held at 7:00pm at Weber State University in the Lampos Hall. Other meetings are held "on site" in members' hangars, shops, or garages. Onsite meeting locations are announced in the newsletter.

This Month's Meeting: "MOVIE"

LOCATION: Weber State University

Featuring: "ONE-SIX RIGHT"

SUBJECT: FLYING

Thursday, 7 SEPTEMBER 2006 1900 hrs, 0100Z, or 7:00pm

DIRECTIONS: Meeting is in 201 Lampros (Collett Arts)

PREZ SEZ:

Another short month has gone by and brought with it some cooler temperatures. I know I am enjoying it. This month we will be showing the movie "One-Six Right" and enjoying some popcorn and soft drinks while we watch it. There will also be a short clip of my RC plane flying and crashing. See below for the written report for the flight. We have

decided to go forward with the purchase of the electronic scales. We had hoped to have them for the meeting, but we won't have them in time for this month. We are also considering a slight increase in the dues to facilitate buying more tools as benefits to our chapter members. We would like your thoughts on this idea. Elections are upon us again and we would love to have some of our newer members get involved by volunteering to help where they feel comfortable, or where maybe they aren't so comfortable, but would like to help anyway. We will be calling for nominations at the upcoming meetings. Please, don't stay away during the election process. We won't coerce anyone into doing the job. We want those who want to see our chapter succeed. Next month we will be visiting Rick Irwin's project, a stretched Cozy. I haven't seen it for about a year now, but if what I saw then is an indication, it should be beautiful. He is also going to show us how to build a component using epoxy, glass and foam construction. This should be especially educational for those bucking rivets; welding or gluing birch laminations. See you all at the movies!

Todd Parker, Prez

First Flight Report:

Well, for those of you waiting for first flight reports. Here is the report for the first flight of my half scale model. Well, actually third flight, but I am not sure you can count flights that last less than 12 seconds.

Here is a summary of the flight as best I can describe and understand from my observations during the flight and watching the grainy video numerous times.

The split flaps were set to the first notch, approximately 10 degrees.

The plane accelerated smoothly and lifted off about mid field. It climbed slowly and smoothly with a slight left turn shortly after lift off. The plane appeared to be stable. The plane continued a sweeping left turn and gained altitude to about 100 feet. The flaps were not retracted during the flight. The left turn was uncommanded by the pilot. Attempts to trim out the left turn were unsuccessful with use of aileron trim. Rudder trim was added but caused an undesirable pitch-up. The addition of rudder did allow the plane to roll right. Shortly after the rudder was neutralized the left turn steepened to a very high bank angle and tight radius. It appears at this point the left wing stalled and the plane entered a steep spin to the left. After one complete rotation the rotation was neutralized and a pull-up attempted. The plane then began rotating to the right and struck the ground with the right wing, which ruptured the spar and tore off the right wing. The nose impacted with the ground and crushed the right side of the nose and collapsed the nose gear and bulkhead attachments. The right main gear then struck the ground and was torn from the fuselage. The plane then flipped over on its back.

Successes:

The design appears to be stable in pitch and have adequate pitch authority.
The use of flaps for takeoff appears to work well.
The landing gear configuration seems to give adequate stability on the ground.
An unintentional spin was successfully arrested after one rotation.
Rudder authority seems strong.

Concerns:

The uncommanded left turn may have been due to incidence misalignments (none observed) or prop wash striking the tail surfaces.
The ailerons did not have enough authority to counter the roll (at least at the slow speeds of this flight).
Use of the rudder is causing a pitch-up.
Did not get to test more regions of flight, especially more flaps.
Spin behavior was not expected.

Overall I think it was a success.

Design changes resulting from flight test:

Increase span of ailerons
Increase vertical stabilizer size?
Beef up the main gear structure.

Verification:

Following the crash, I modeled the prop version in X-Plane. It exhibits the left-hand turn exactly like the RC plane, due to prop wash effects. I flew the same pattern with the flaps on the first notch. The ailerons were more effective in XP than real life as the wingtip effects are not accurately modeled in XP, but quite a large aileron deflection was needed to counter the roll and rudder to counter the turn. Interestingly, the plane entered a spin in exactly the same fashion when I pulled the high tight left turn as seen in the video. It was cool to see.

It is possible the slight difference in flaps and the prop wash effects were the cause of the left turn tendency. Leaving the flaps down meant the prop wash effects were maximized by keeping the speed low. It also prevented the plane from gaining speed to where the ailerons and vertical fin could be effective. I think if the flaps had been retracted, the flight would have been a complete success with a trimmable prop wash effect.

So, I am sad to say the plane is a loss, but the flight testing in my opinion was a success. I will show a video of the flight at the meeting this week.

Todd

MINUTES:

Minutes for August 3, 2006, Regular Meeting, EAA Chapter 58

Date: August 3, 2006

Place: Weber State University, Lampros Hall, Room 201

Time: 7:00 PM

1. Members Present: Todd Parker; Allen Rydman, Bob Johnson; Charlie Johnson; Gary Mifflin; Craig Joosten; John Lewis; Wayne Beddes; Stan McGrew; Doug Barker; Rick Irwin; Steve Smith.
2. Guests Present: Norm Whittle (Rans S-4 Project); Larry Hall (Pazmany Storch Project, Morgan UT); Jeff Long (Mini-Max/Hi-Max Project Planning); Mike Parker (SLC EAA Chapter 23 visitor).
3. Meeting began at 7:00 with Chapter President, Todd Parker, reviewing his Oshkosh Airshow experiences and observations:
 - A. Light Sport Aircraft (LSA) were the feature attraction
 - B. Cessna Aircraft introduced its LSA entry into the market
 - C. "Electronic products for the cockpit" were everywhere, and did "everything"
 - D. Attended Chapter Presidents' meeting reviewing EAA's Mission Statement

Other announcements by Todd:

Chapter about to purchase a set of electronic, aircraft weighing scales.

New FAA designated airworthiness inspector is available. Did recent inspections for Bob Johnson (Dragonfly), Richard Green (RV-7A), Jim Gordon (RV-3). Contact these individuals for his name and phone numbers.

4. The meeting's main program presentation was given by Chapter Vice President, Wayne Beddes. His topic was a demonstration of how to calibrate your airspeed indicator, using a water manometer. Wayne had had concerns about the accuracy of his aircraft's airspeed system and built his own test setup to handle the job. He provided handouts of pressure values vs airspeed that related inches of water, mercury, or lbs./sq inch to airspeed in miles/hour and knots. It was interesting to see just "how low" of a pressure you're talking about when equating airspeed to pressure values. Airspeed indicators are extremely sensitive devices as Wayne expertly demonstrated with his set up. EAA headquarters must have been "listening in" because they promptly repeated the content of Wayne's presentation in the August 2006, issue of Sport Aviation Magazine!
5. Todd Parker gave a presentation of his Engine Cooling Systems article that was previously published in EAA's Sport Aviation Magazine. He emphasized that "efficient" cooling

systems need adequate attention paid to inlets, diffusers, plenums, convergence sections, and exits. Ignore any one, and your cooling system may not work at all!

6. Next meeting September 7, 2006, Weber State University, 7:00 PM, subject to be announced

Submitted by Al Rydman, EAA Chapter 58 Secretary

FROM THE EDITOR:

We want to thank Wayne Beddes and Todd Parker for the presentations last month. Next month will be a project visit. Rick Irwin has volunteered to provide a glimpse of his Cozy under construction.

It is time for Elections for the Chapter officers, President, Vice President, Secretary, and Treasurer. Also if anybody would like to do some of the other jobs, please let it be known or if you are currently doing one and do not wish to continue this would be a good time to let it be known. **THINK ABOUT WHOM YOU WOULD LIKE TO SEE IN OFFICE. THIS NEEDS TO BE DONE THIS MONTH!**

The official mailing address for the chapter is:

EAA CHAPTER 58
3695 AIRPORT ROAD
OGDEN, UTAH 84405

The location of the Chapter web is www.eaa58.org,

Well I have some good news to report **DRAGONFLY N211DF HAS ITS AIRWORTHINESS CERTIFICATE**. I am now working towards the final tweaking of the plane for its first flight. It will be a bit slow as the temperatures are quite high and extensive taxiing could be an issue. But be assured that it will happen when the time is right. I have 15 hours on the engine now 10 in the current configuration. The alternator and vacuum pump mount and drive are my design along with the fuel injection system so I want a bit time on the configuration before it leaves the ground.

WANTED ARTICLES FOR THE NEWSLETTER!!

New EAA Homebuilt Certification Kit *****
EAA's new Amateur-Built Aircraft Certification Kit includes everything you need to register and certificate a new experimental amateur-built aircraft. The 15-page, step-by-step Certification Guide walks you through the entire process-from getting an N number to the aircraft inspection - and provides samples of how to complete each required form. EAA staff member and Amateur-Built DAR Joe Norris, who reviewed all of the materials included in the kit, commented, "Whenever I inspect an aircraft for certification, the paperwork is what causes delays more often than anything on the aircraft. This guide will make a homebuilder's inspection go a lot easier." The certification kit also includes all FAA forms, Experimental sticker (in black), dataplate, and a convenient placard decal sheet. Cost for EAA members is \$12.99 plus shipping. The kit is also available for non-members for \$19.99 plus shipping. To order, call EAA Membership Services at 800/JOIN EAA, or visit <<http://shop.eaa.org>>.

EAA Aircraft Financing Program Announced
***** EAA announced the addition of a member benefit to make the dream of aircraft ownership more attainable. In partnership with AirFleet Capital, Inc., the EAA Aircraft Financing Program, the most comprehensive aircraft-loan offering in the industry, was unveiled at the Sun 'n Fun Fly-In in Lakeland, Florida on April 6th. Catering to the needs of both individuals and businesses, AirFleet Capital provides financing for new and used amateur-builts, type-certificated single and twin pistons, turboprops, jets and helicopters. This includes financing for light-sport aircraft, the new category that has cut the cost of a new, factory-built airplane in half. To learn more about the EAA Aircraft Financing Program, call AirFleet Capital at 866/808-6040 or visit <<http://www.airfleetcapital.com/>> Read the full story on the web at:
<http://www.eaa.org/communications/eaanews/060406_financing.html>

EAA Regional Fly-In Season Begins ***** Mark your calendars now for the upcoming EAA Regional Fly-In season.

For the full 2006 Regional Fly-In schedule go to:
<<http://www.eaa.org/avlinks/flyins.html>>

FEATURE: FLIGHT of the VAGABOND

Flight of the Vagabond

By

Steve Stumph

(C) 2006, SLC UT

This is my beautiful toy plane after it was sold and uglified with original Piper yellow. My 1948 Vagabond PA-15 (N4384H) had no radio or electrical, so I'd flip the prop with two fingers -- only 65 hp. It weighs just 620 lbs. empty and has no electrical -- although the new owner installed a radio.



It's quite a thrill to fly the North-South corridor across LAX (a VFR lane) with no radio. The first time I did it, while living in Redondo Beach, CA, I looked down at a Boeing 747 to see him land crosswise at a 15-degree angle. Before that I didn't realize they had main-gear steering.

When properly trimmed on a calm day, I could take my hands and feet off the Vagabond controls and bank or climb/dive simply by leaning. Nifty. I'd like to see you try in any other plane besides an ultra-light.



The first time I met her was at the Provo Airport while my family visited the grandparents for Thanksgiving in 1971. It was love at first sight -- beautiful white muslin, with five sky-blue stars sweeping the cowling to just behind a single door on the passenger side. At first I thought she was a clipped-wing Cub. But a closer examination revealed a single bench seat rather than tandem, and only one stick. At 29 feet, the wingspan is six feet shorter than a Cub, and the 18-foot fuselage is four feet less. With a 90-knot cruise speed, it's built for low and slow.

I peeked inside at the registration and wrote down the name of the owner. He was out of town, but I called again when we got home to Boulder, Colorado. When I asked if he would sell, he said, "Sure. It's winter, and it's cold as hell to fly without a heater."

We agreed on \$2,000. It's worth five times that now -- about equivalent to inflation. The next weekend he delivered it to me, on condition that I pay his airfare from Denver back to Salt Lake City. What I didn't count on was it took him all day to get there, and he landed just before dark. He had to be at work the next day, so I was stuck without a check ride. It wouldn't have done much good anyway since there was only one set of controls. But I hadn't even ridden in it.

As a precaution, I renewed my tail-dragger skills with a check-ride in a Citabria. I had done my Private training in a squirrely Luscombe, and the Citabria was a cinch. A couple of years earlier, I had taken aerobatic training in a Citabria from Art Scholl at Flabob Airport in Riverside, California, so it was easy.

My main concern was, with the Vagabond being so short coupled, I was afraid I'd zigzag down the runway and ground loop before I ever got off the ground. So I asked my wife, Gayla, to film my takeoff just in case I wrecked it on first try.

I did fine. With the oversized tires and huge control surfaces, the tail came off the ground in less than 100 feet. Everything was stable, and I eventually became airborne. I was soon reminded that 65 horsepower at 5,288 feet elevation equates to about 40 hp actual and a 100-foot rate of climb -- on a cool day. It's rated at 490 ft./min. at sea level, but I never achieved that even in LA. A 65 horsepower Lycoming just doesn't put out that much oomph! At least the Lycoming doesn't nag you with carburetor heat like the Cub's Continental.

A couple of days later, I took a joy ride after work for an hour and learned a valuable lesson. As I flew my final approach, I noticed the 70-knot descent was nearly vertical.

When I saw four guys near the hangars jump in a car and drive straight down the runway at me, I thought, "What fools! Don't they see me landing?"

Little did I realize they were coming to rescue me. Seventy to 80 mph winds are common in Boulder, and I was lucky it was blowing straight down runway 26L. When the car got close, four guys jumped out and grabbed my wing tips. As I cut power, one of them yelled, "Give it full throttle or we'll never be able to walk you to the tie-down area!"

Fortunately, one hangar had a spare corner and the Vagabond didn't take much room. A few days later, we had a low-pressure area, opposite a high-pressure front on the West Side of the Rockies. The Jet Stream happened to be right overhead when they announced at work we were all dismissed at two o'clock to go home. I went outside where the wind came down the canyon and saw flagstones flipping across the ground from a 90-mph wind. That night I put big duct tape Xs across my house windows.

A few months later we moved to the Los Angeles area. With no radio, it was tricky finding an airport near home without a control tower. Compton wasn't far from Redondo Beach, but unfortunately was close to the Watts area where the blacks had rioted and burned things a few years earlier. Consequently, the airport had a 12-foot high block wall on all sides. Nice for security. Not so nice for an underpowered plane on take-off. A half-mile beyond the block wall on the West Side was a threatening string of high-tension power lines. I never did get over the nervousness of take-offs from that airport, even on cool mornings. People in LA consider it an extremely hot day when the temperature goes over 80 degrees -- imagine the 109 degrees of recent days. A "cold day" is 65.

Ferrying the Vagabond from Colorado to LA was quite an adventure. It was a cool February day with high cumulus clouds when I approached the Cheyenne, Wyoming Mountains. I was at 10,000 feet when I realized the clouds went at least another 2,000 feet above my 12,500-foot ceiling. They also appeared to touch the ground. I chose to go under. I took a look at my map and saw two low-altitude passageways -- Interstate 80 heading straight west and a railroad line meandering to the south. Having never driven that stretch of I-80, I reasoned there might be some steep grades that I couldn't climb. So I opted to follow the railroad tracks through the fog at about 50-feet above ground level (AGL). I figured as long as I stayed above the height of a train I'd be safe. That's when I should have turned back and tried another day. But I was young and foolish. It didn't occur to me until later that there might be an unmarked tunnel. After all, there's a 20-mile train tunnel just west of Denver, going through 14,000-foot mountains.

I also failed to consider the possibility of power lines crossing the tracks. When I rounded a curve and saw the slanted web directly in my path I knew I was in trouble. Fortunately, I had given a lot of thought to such things when I studied to become a crop duster. I reacted instinctively and dove low, easily clearing the wires by 40 feet. It's riskier going over for two reasons. 1) The plane slows and climbs at a slower rate than a descent; it could also stall. 2) It's more difficult to judge landing gear clearance than to tell how much the vertical stabilizer goes above your head and the high wings.

If you follow I-80 across Wyoming, just a ways north of the interstate you can still see wagon ruts from the Oregon Trail.

That afternoon, after gassing up at Provo, I became lost for the only time in my life. Heading south toward Delta, I decided to follow the canyons rather than try and climb over the 9,000-foot mountains. That was a mistake. Without my noticing, the canyon gradually deviated west and I wasn't paying close attention to my compass. Remember, I

had no VOR reference. At about the right time to cross the Delta Airport, I looked down and noticed the runway had only a single north-south line (120/300 degrees) rather than the "X" I was expecting (120/300 & 170/350 degrees). I checked my map for a familiar pattern and concluded I was over Dugway Proving Grounds -- in a Restricted Area no less. I made a sharp left turn and headed out of there before the guys with big, bad guns noticed my little blip on their radar.

Flying south I had about a 40-mph headwind all the way to LA. It was worse higher up, so I hugged the ground at 200-300 feet all the way there, naturally avoiding houses and cars to stay legal. Between Cedar City and St. George, there are some vertical cliffs on the East Side of I-15. With a westerly wind, if you get in close you can catch a nice updraft and cut power to save fuel. There's a tricky landing at St. George (elev. 2,941 ft), where the airport sits on a high bluff above the town. With the wind blowing fast down runway 16, it creates a sharp downdraft just past the end of the runway. A long, low approach can mean certain death. I don't know if there have been many crashes. A steep descent on final is by far the safest.

Passing east of McCarran Field in Las Vegas, I saw an airliner slowly hobbling down runway 25R (elev. 2,181 ft). It was moving so slowly I assumed it was landing. But when it kept going, I realized it was taking off. It was mid-afternoon and the air was at least 105 degrees on the ground. The plane must have cleared the fence by only 50 or 100 feet. Now I know why big planes want the runway temperature before they land.

I learned about that when Bobby Kennedy's private Boeing 707 came into Provo one day while I was practicing touch and goes. Since there's no control tower, the pilot called on the UNICOM frequency. I was about to takeoff in a Piper Cherokee 140. I had a thermometer in the windscreen, so I radioed the temperature to him. It was 10 minutes before he landed. His downwind was west of Utah Lake; his base leg was clear down by Salem -- 20 miles away. I guess he wasn't used to the altitude and didn't want to take any chances with a presidential candidate on board.

My son and I took off from a fairly high airport at Cedar City after filling up on a hot day (elevation 5,622 feet). Leaving ground effect, the Vagabond climb rate was nearly zero. I was too low to risk turning around to land, so I kept a slow, steady climb straight ahead. Five miles from the airport, I had to make a slight turn to avoid hitting a Chevron gas station sign. After we were 200 feet AGL, the temperature dropped enough that we climbed out fine. I never want to repeat that experience.

I learned another novel thing about desert temperature while passing the big thermometer at Baker, California. On the ground it was 115 degrees. But 200 feet high, where I was flying, it was only about 75 in the cockpit.

Again I encountered fog at Victorville and wisely decided to turn back to Barstow. It was a couple of months before the winter weather in LA cleared enough to retrieve my plane.

The next December, my wife and I decided to fly out to Death Valley for a Sunday joyride. I found out Gayla doesn't like flying low. I thought she'd be impressed when I demonstrated ground effect at three feet over a dry lakebed. But it just made her nervous. It was only 90 degrees when we landed at Furnace Creek; they gave me a certificate for flying below sea level (-282 feet). The airport is closed for six months during the summer. When runway temperatures range between 120 and 140 degrees, planes can land, but they can't take off again.

Coming home, I flew high to please Gayla -- about 400 feet AGL. Just before Baker, I heard a gigantic "BANG!" Assuming something serious had broken and fallen off my plane, I made a quick U-turn to see what was falling to the ground. That's when I saw two Navy jets from China Lake skimming the desert floor below me. The F-14s had hit us with a sonic boom. I could imagine their radio conversation. "See that little plane on the radar ahead. He thinks he's flying low. Let's go under him and show him what REAL flying low is all about."
Little did they realize.

AL RYDMAN SOME PHOTOS of HIS PROJECT

To: Bob Johnson, EAA Chapter 58 Bulletin Editor
Also, To Wayne Olson & Flight Test Crew on Standby (for years, now) in Camas, WA.

Attached are some pictures from last Tuesday's "power up" of the avionics I've installed in my RV-6. Successfully operated via aircraft battery power were the following units and associated antenna installations (really hard to see in pictures).

KMA-20 Audio panel/marker beacon receiver

KN-53 VOR/GS Receiver

KLN-90B GPS

Two each KY-97A Comm transceivers

KT-76A Transponder with AmeriKing Altitude Encoder

AmeriKing Annunciator Switch/Panel

Century NSD 360A HSI

PM1000 II Intercom with Telex ANR Headsets

No smoke observed, no fuses blown, and operations subsequently "witnessed" by EAA #58 members Mike Alessi and Craig Joosten. The wooden fuselage support "dolly" in the pictures is now available to any Chapter 58 member/builder, FREE, for the asking.

Al Rydman



MOVING OUT FOR TEST



STARTING THE TEST



NICE PANEL



IT'S ON, NO SMOKE!!!



FOLLOWING THE PROCEEDURE OR HOW DOES THIS WORK?

GOTS and WANTS

We are adding this section and if you will send the information in will post want ads.

Rick Rohler
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For Sale

AIRCRAFT EXTRUDED PIANO HINGE MS-20001-6 for \$40.00 each. Brand new 6 foot long by 2 inch wide by .051" thick extruded aluminum aircraft piano hinge with two hinge pins. This anodized aluminum hinge is extruded so the closed hinge loops cannot be pulled apart. Being 2 inches wide gives it more area for bonding to the fiberglass on RV (Vans aircraft) type engine cowlings. This is the same hinge that sells for \$50.95 in the Aircraft Spruce 2002/2003 page 70 parts catalogs. This is the hinge that Van calls "The good stuff."

For Sale

"SCORE-A-CARD" scoring tools for \$8.00 to \$10.00 each. Five different sizes. The SCOREACARD is a tool made by High Rohler Engineering to score card stock for a perfect fold down the middle of your home made greeting cards. A great tool for helping

you turn out a professional looking card. It eliminates that yucky edge when the grain of the paper is the wrong direction to fold. Very popular with Rubber Stamping Stores all over the country.

K. W. Sorensen
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I am 71 years old with severe medical problems and will never use them. Some of this stuff may not be of use to you, but I don't want to sell them one at a time, I'm too old. Make offer. The first six items are worth \$2860.00. I will ship C.O.D. FedEx. I'll pay the shipping.

GYRO 3 1/8", DIRECTIONAL GYRO 3 1/8", ALTIMETER BARBER POLE,
KOLLSMAN 20K, AIRSPEED PIONEER 160 MPH, RATE OF CLIMB, TURN &
BANK 12 VOLT, OIL PRESSURE 2 1/4, OIL TEMP 2 1/4, AMP/VOLT W/SHUNT,
MANIFOLD PRESSURE 2 1/4, MECHANICAL TACHOMETER, EGT LEFT &
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Dan Blumel site is: www.XeVision.com
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