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Chapter 81 Skywriter

Annual Dues \$20

Checks should be made payable to EAA Chapter 81 and brought to a chapter meeting or sent to the Treasurer:

Eric Nelson
10270 N. Krauswood Ln
Oro Valley AZ 85737

Do not send payment to the newsletter editor!

**EAA Chapter 81 Meeting
August 15, 2020
10:00**

**Ryan Airfield Administration building
(Just East of Richie's Cafe)**

There will be a presentation on fuel gauging systems and technology, from the first most basic methods to military and commercial aircraft.

We are attempting to practice appropriate physical distancing, and members are asked to bring and wear appropriate facial masks.

Click on the link below to see aviation events around Arizona

[Arizona Aviation Events](#)



These handsome chapter 81 patches are available from Eric Nelson when you cough up money for your dues.

Bob Miller

EAA Chapter 81 Meeting Minutes Saturday, July 18, 2020

Meeting was called to order at 1000 by President Erik Fjerstad at the Ryan Field meeting room.

Secretary's report: The usual - Minutes approved in 3 1/2 seconds without being read. That's not even the record time!

Treasurer's Report: There was none. We're have faith that Eric Nelson will come back someday and bring the check book with him.

Visitors: John Dale the younger is learning to fly his recently-acquired 1947 Stinson 108-3 Station Wagon. According to John Dale the older, this is a gentleman's airplane with excellent manners; not quick to leave the ground nor to climb, nor to cruise, but very comfortable and with excellent control harmony. It also features exceptional aileron response at relatively low speeds and huge flaps that provide much more drag than lift. Adverse yaw is nearly absent, trim is essential, and it is one of the few single-engine light aircraft of its era (or since) that can carry four real people with their baggage and full fuel and still be under gross. Those Stinson engineers knew what they were doing!

Brian Jones is a new member of Chapter 81 but has belonged to EAA since 1974. Back in the '90s he was building a Rand Robinson KR-2. For those not familiar, the KR-2 is a kit or plans-built side-by-side 2-seater of wood and composite construction, designed by Ken Rand. Typically using a VW Beetle-derived aircraft engine, it is quite efficient, weighing 480 pounds empty and cruising at a claimed 180 MPH on 76 HP. Estimated build time (from a kit) is 800 hours. Carrying 35 gallons of fuel, it has an amazing range of 1,600 miles! Aircraft Spruce still sells the plans and the kit. Welcome to Chapter 81, Brian.

When I joined Chapter 81, I was amazed to find that some of the other members were what I call “the gods of aviation”, pilots with incredible knowledge, skills, and history to share with us mere mortals. Clearly in this category is our featured speaker, the amazing John Dale (the older), a man who has forgotten more about aircraft than most of us will ever know, and he hasn’t forgotten much! As an example, I read a book in which the protagonist claimed that, although he was not a pilot, on his first attempt, he successfully pulled off an Immelmann (half-loop finished with a half-roll) in a Consolidated B-24 bomber (which he called a fighter, making his knowledge of aircraft somewhat suspect). I asked John whether he thought that a B-24 could possibly do an Immelmann; his reply was that it should be possible, and that he himself had done the same maneuver in a Lockheed C-130 Hercules! But I digress.

Colonel Dale regaled us with tales of his days as Squadron Commander for the only USAF U2 Wing from 1972-1974, here in Tucson, and was the first to have no fatalities and no lost aircraft while he served as Commander. He, and a very few qualified pilots, flew the early, small U-2C, which had 600 square-foot wings and used the Pratt & Whitney J75 turbojet engine on reconnaissance missions up to 8 hours at altitudes above 70,000 feet. Built to be a jet glider (glide ratio about 23:1), with weight-saving a priority, Lockheed used aluminum skins thinner than Cessna uses on the 172! The aircraft was by no means sturdy: a drop of more than 2 feet on landing would damage the landing gear, and an aerodynamic stall at altitude would damage the airframe. At mission altitude, the acceptable airspeed range was a "coffin corner" of only 3 knots: the upper limit is the maximum mach number speed (MMO) where mach tuck may occur causing a dive where the tail comes off, and slower was stall speed, which would likewise result in a dive that destroys the aircraft.

Needless to say, it would be impossible to maintain this narrow range of airspeed throughout an 8-hour mission without using the autopilot, which was engaged at 55,000 feet on the way up. Bank angle was limited to 12 degrees and bug turns (using the autopilot) were required. Martin Knutson, Director of Flight Operations for NASA Ames Research Center at Moffett Field, California, was manager of U-2 flight operations starting in 1971. He is quoted as saying that the U-2 is “the highest workload airplane I believe ever designed and built ... you’re wrestling with the airplane and operating the camera systems at all times ...”. It was so difficult to fly, and especially to land, that only 1 out of 25 pilots who tried to qualify succeeded. Some couldn’t even taxi it! Only 11 pilots qualified in John Dale’s command. The Air Force generally does not forgive pilots for failing to qualify in a new type aircraft, but made an exception for the U-2; they could return to other commands with no black mark on their record. The U-2 had some other unusual flight characteristics: It had bicycle landing gear, with a pair of 250 psi tires in front and solid tail wheels (rated at 35 MPH!) from a warehouse tug. With no differential braking, all ground steering was done with the linked rudder and steerable tailwheel. The wings were held up by wheeled struts called pogos, which fell off after takeoff. On landing, threshold speed is 80 knots and ground effect keeps the plane floating a long, long time: it takes 1,000 feet to lose one knot! The parachute is not there to slow you down, it is there to push the tailwheel down so you have at least a chance of steering, because the rudder is useless at landing speed. The preferred technique is to roll the tailwheel on first. The idea is to stall within 2 feet of the ground so as not to destroy the landing gear. To accomplish this, a chase car calls the altitude and attitude. The pilot attempts to keep the wings level until ground crew can grab the wing tips, and there are titanium skids on those wing tips in case they cannot. John says that he was able to stop with the wings level twice. He was also the only pilot never to ground-loop the U-2, although he did make a 90 degree (unplanned) turn and “only just barely” left the runway. Acceleration and climb are astounding: the big-block equipped El Camino chase car could not keep up, and the ground roll was 500 feet in 4 seconds if light, 5 1/2 at gross weight.

Takeoff power was 85% so as not to spin the tires on the rims before starting the roll. OK, you hot-rod RV pilots, try to imagine this: initial climb is 20,000 feet per minute at an angle of 60 degrees and an airspeed of 160 knots. Pull back to vertical and you still have 120 knots! Cruise at 70,000 feet-plus shows an indicated airspeed of 95 knots, which trues out at 420 knots (this is at power just above idle). Max indicated airspeed at lower altitudes is 240 knots. Although the controls are very light at speed, they are extremely heavy when slow. The pilot wears a partial-pressure suit because the cockpit was only pressurized to 29,000-32,000 feet (remember that lightweight construction) and there is no room for a full-pressure suit. OK, time to come down. 5 things to remember, but first remember this: you can't put the nose down (hard to fly without a tail)!

1. Open the bleed valves.
2. Gear down.
3. Speed boards down.
4. Vernier dial down engine power setting.
5. Fart like crazy to inflate your pressure suit!

Now, you might think that putting down the gear and the speed boards would slow the aircraft down rapidly, and you would be wrong; there's almost no air up there to create drag. You just pull off all the power you can (jet engines make considerable thrust at idle) and wait until it starts to descend.

Other interesting items: John showed us the gloves from a partial-pressure suit and a slightly-used wingtip titanium skid he nearly burned off during a cross-wind landing. He also had a chart used for calculating oxygen pressure. Lockheed provided a wood stick with a notch at one end to pick up the rudder pedals so you could move your legs a little during that 8-hour mission, and a swab at the other end, initially for oil, and later for wiping frost off the canopy. No fuel gauge; instead a "liquidometer".

Tony LeVier, the test pilot for the Lockheed P-38 Lightning, was also test pilot for the U-2, which is still being flown, although there is a later version (U-2R or S) which is quite different: 1,000 square feet of wing (vs 600) and spoilers to cut lift, much bigger and sturdier (and heavier), more powerful GE F118 turbofan engine, able to pressurize to 15,000 feet and the pilot wears a full-pressure suit. The later models also had a lower threshold speed of 75 knots and missions could be increased to 15 hours. Bail-out height for the U-2C was 800 feet, so punching out was not an option if a takeoff or landing went sideways (pun intended). Navigation was of the celestial variety, using a sextant. At 73,000 to 74,000 feet, the view sight was incredibly accurate, never off by more than 40 feet! The Cessna 310 chase plane was called the "Me-2". The average age of surviving U-2s is 27,000 hours, and one has been rebuilt 3 times.

Wow. Somehow, the meeting went on after that blockbuster presentation.

Old News: The Cessna 140 donated to Chapter 81 is now in the Chapter Hangar. The Keown (pronounced cow-in) brothers Dan and Jim are willing to be project managers for its mechanical restoration (to begin as soon as things cool down a bit). We have all the log books, which Vice President Steve Horton, A&P Supreme, will go over with a fine-tooth comb to make sure that everything is kosher and all the ADs (Airworthiness Directives) and SBs (Service Bulletins) were complied with. Items of interest include a too-short prop, and that the wings are all-fabric. The engine is an electric-start Continental C-85 with "several hundred" hours on it SMOH (since major overhaul). The door frame structures are cracked and the landing gear box has been repaired twice. The donor had planned to repair and clean up these issues during a planned restoration, but has given us the opportunity instead. Chapter 81 owns it as a project but EAA will not allow us to own a flying airplane once the test flights are done.

When the chapter disposes of the airplane, it must receive fair market value for it, or it can donate it to another 501c3 organization. Our members could start a flying club (independent of the chapter) and purchase and operate the aircraft; or the chapter could raffle or auction the aircraft off as a fundraiser.

New Business: The WASP Project. Edith Baugh Upson Smith, Class 44-W-7 WASP (Women Air Force Service Pilots) currently lives in Green Valley and is about to celebrate her 99th birthday. Friends are requesting an aircraft fly-over in August. President Fjerstad spoke with the CAF (Commemorative Air Force) and has the name of the ops officer and chief pilot. They have a B-25 and B-17 on tour, but an AT-6 Texan might be available. John Dale will try to contact Davis-Monthan AFB for a possible C-130 and/or A-10 Thunderbolt (Warthog) fly-over. After consideration of the options, and issues (permits, noise, logistics, etc.), the current plan involves GA aircraft overflying in loose formation on her birthday (Sunday, 30 August). The Arizona 99s will lead the effort and interested chapter members can join in. Contact Erik (chapter president - president81@eas81.org).

Larry Wilson is doing final assemble of his Zenith CH-701 at the Chapter Hanger and invites us to come take a look. He is close to engine start, and is in the process of making arrangements for a DAR visit for his certification inspection.

Meeting was adjourned at 1135.

Respectfully Submitted by
Secretary Bob Miller

EAA webinars are free to all aviation enthusiasts. Pre-registration is recommended since space is limited to the first 1,000 registrants. Upcoming webinars include the following topics and presenters:

8/11/20

12 p.m. CDT

[Chapter Chat: Applying for Charitable Status - Filing the 1023EZ](#)

Patti Arthur

Patti Arthur will walk you through the simplified IRS 1023EZ application. By becoming an IRS recognized charity under IRC section 501(c)(3), donations to the chapter are deductible by the donor.

8/12/20

7 p.m. CDT

**[Legal Issues in Buying and Selling GA Aircraft](#)
Qualifies for FAA WINGS credit.**

Kathy Yodice, Patrick Floyd and Alan L. Farkas

The EAA Legal Advisory Council will give you a practical overview of how to buy or sell an aircraft without getting snagged by legal issues. This webinar will address contracts, inspections, insurance, product liability, negligence, titles, registration, and international transactions. There will be a Q&A session at the end of the talk.

8/18/20

7 p.m. CDT

[Air Shows: Not Just Events, But a Lifestyle!](#)

Grant & Brittany Nielsen

Curious about the air show life? Join Grant and Brittany Nielsen as they talk about their journey as GN Airshows. Learn about becoming an air show performer and the lifestyle around air shows, air show announcing, and all of the nitty-gritty details.

8/19/20

7 p.m. CDT

[How to Use Your Pilot's Operating Handbook](#)

Qualifies for FAA WINGS credit.

Mike Bauer

Do you know what's in your airplane's pilot's operating handbook (POH)? Do you even have a POH? Maybe you have an owner's manual instead. What's the difference? Mike Bauer will discuss why you need a POH, what it contains, how to use it, and what to do if you don't have one.

8/26/20

7 p.m. CDT

[Experiment in the Cockpit: The Women Airforce Service Pilots of World War II](#)

Katherine Sharp Landdeck

*In September 1942, the leaders of the USAAF knew they desperately needed more pilots and decided to finally give women pilots a chance. In the beginning, they were uncertain whether women could fly military planes, but the women quickly proved themselves as effective pilots. Historian Katherine Sharp Landdeck, author of *The Women With Silver Wings: The Inspiring True Story of the Women Airforce Service Pilots of World War II*, shares the story of how women got started flying for the USAAF and their successful experiment in the cockpit.*

9/1/20

7 p.m. CDT

[Zenith STOL Airplanes](#)

HOMEBUILDERS WEBINAR SERIES

Sebastien Heintz

Sebastien Heintz will discuss in-depth their high wing kit aircraft: STOL CH701, STOL CH750, CH750 Cruzer and STOL CH750 Super Duty.

9/2/20

7 p.m. CDT

[Fresh Annual](#)

Qualifies for FAA WINGS and AMT credit.

Mike Busch

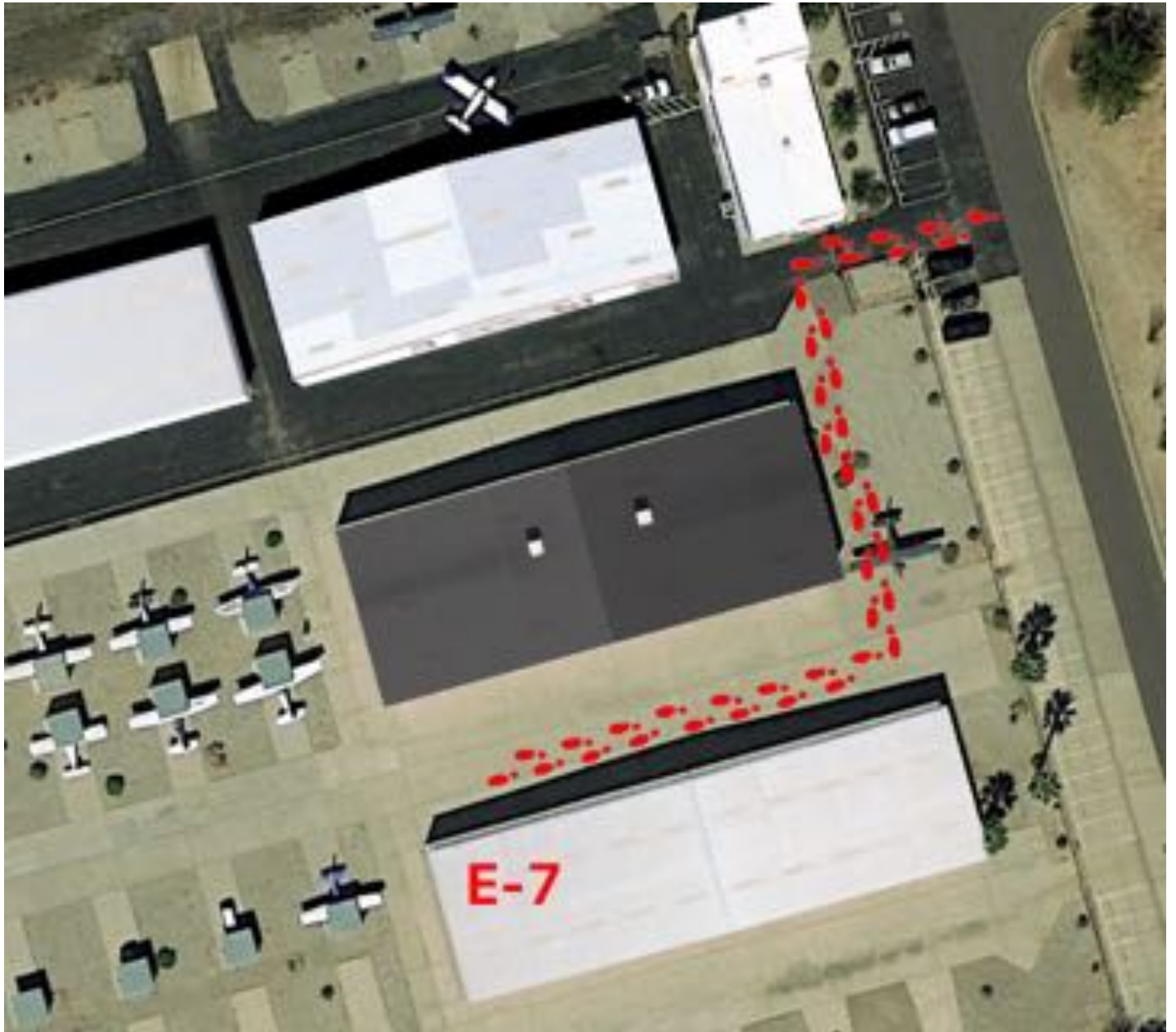
It's often said that when buying an airplane, the best prebuy is an annual inspection. Not so fast, says maintenance expert Mike Busch A&P/IA. In this webinar, Mike tells the story of a first-time aircraft owner who bought a Piper Warrior with the proverbial "fresh annual" provided by the seller's mechanic in Texas, ferried the plane home to California with his CFI, only to discover that the aircraft was a mechanical disaster. Mike illustrates graphically why an annual inspection provided by the seller is never a substitute for a proper independent prebuy arranged for by the buyer.

Location of the EAA Chap 81 hanger

Drive down South Aviator Lane to the end. Park just south of AirWest. There is a walk in gate just south of the auto gate. It is not locked. Walk through the gate, and turn left. Walk past the first hanger on your right. The EAA hanger is on the Northwest corner of the second hanger, E-7. Chairs are available or Bring your own chair

See the two images below!





Classifieds

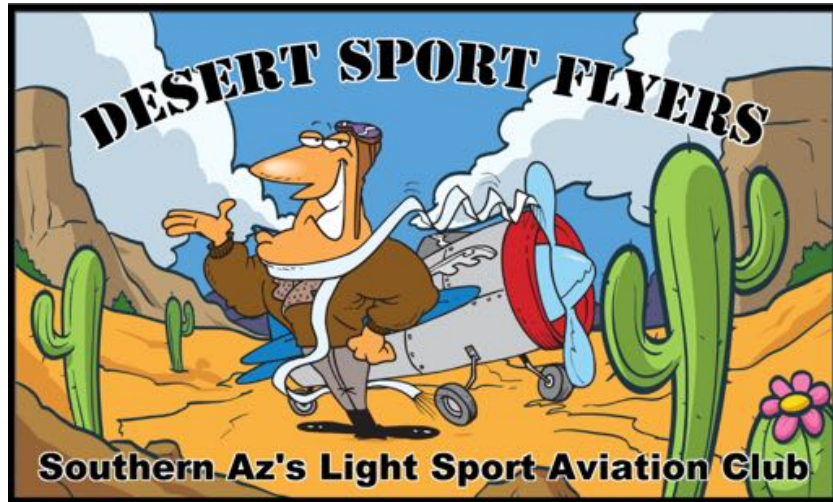
Remember that you can place an add in the newsletter (it will appear on the Chapter 81 web site also) to sell those items in your hangar. Then, you can buy more shiny stuff to put in your hangar! Send email to newsletter81@eaa81.org with a pic, description and contact information.

011 Zenith Zodiac 601XL w/B modifications. EXTREMELY nice looking plane. 158 hrs, Jabiru 3300, MGL Glass panel plus a mounted tablet, autopilot, plus all the other stuff. \$44,500

If interested, contact Jimmy
860-946-7194
jimmyg2000@att.net



Important updated information!



Lyndell Taylor
ltaylor017@yahoo.com

Desert Sport Flyers suffered a setback in March when during the annual inspection a crack was discovered in the top cap of the center section main spar of the club's aircraft. The manager elected to disband the club at that time. However, some of the club members felt that the club should be continued with new organization documents and new management. Since that time, the new organization has been formed and will operate under the same name (Desert Sport Flyers). There are some options available for obtaining an aircraft and the club will soon make its decision as to what aircraft it will choose. The new managers are: Jessica Cox, President; Mark Gregory, Secretary; Steve Hulland, Treasurer; Jerry Witt, Maintenance Officer; And Bob Rill, Director at Large. If anyone is interested in membership in the new club, please contact one of the new officers.

Lyndell D Taylor

Stephen Zigelstein

2007 Johnston Tiger Cub, Single Seat LSA, Rotax 503 DCDI, TT ACFT/ENG 70hrs, Basic VFR instruments, Custom 9 gal aluminum tank, Cleveland Brakes, Custom cargo storage compartment behind seat, Folding wings, Can be flown with Doors open or Off , Stall 27 - Cruise 75 MPH
Asking \$9K

Stephen Zigelstein. Best way to contact me is Cell Phone



Long Ez Project for sale

I will no longer be able to get my pilot's license due to medical issues. The URL below will take you to my website that shows most of the components included in the sale. The price is \$2500, but I am open to partial or complete trades(looking for enclosed trailer or SCCA project car), open to all offers, the worst I can do is say no. I can store this project until spring if needed. Please email with any questions, or use the reply box on the website.

<https://longezforsale.godaddysites.com/>

Thank You,
Allen (aabebay@evertek.net)

Purchased RV12iS Empennage/ Tailcone and Wing Kits from Van's Aircraft in 2018. Completed the Empennage at Synergy Air and Tailcone in Arizona. Only sorted and labelled all Wing Kit parts and fittings. The cost of all the items is \$11,400. Also have the complete tool kit for the RV-12iS, including a pneumatic squeezer - \$2000 + value. All available for \$8,000. Tool Kit is free and there is no tax applicable. If interested, please contact John Twyman at: Tel: 520.207.5002 (voice only) or Email: john.w.twyman@gmail.com



Check out our Chapter Facebook Page!
<https://www.facebook.com/ea81.org>

**Please send items of interest, classifieds, etc
to
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or to Dave’s address on front page.**



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