

THE SLIPSTREAM

APRIL 2022

THE NEWSLETTER OF GREEN RIVER EAA CHAPTER 441 KENT, WA

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PRESIDENTS COLUMN, SCOTTISH HIGHLANDER:

Presidents Column:

Calling all Chapter Members!

Chapter 441 has been asked (and we've accepted the invitation) to put on a Young Eagles Flight rally to be held in conjunction with Auburn Airport's "Airport Day", 9 July, 2022.

Mark is the designated chair for this event. That was the easy part. We met with the airport manager and his staff last week, and have some sense of what they want to do and how it will be set up. They're expecting maybe 200 kids to fly (there is LOTS of pent-up demand).

The more difficult part is that Mark is going to need lots of help. We need volunteers, and that's you. We will need ground staff (to process registrations, keep track of certificates, pilots, parents, etc. We will need marshalls to escort kids to and from airplanes, and generally provide crowd control. We need an airplane as a static display so the kids can do a walk-around "inspection" while they're waiting their turn to fly. We need volunteers to conduct the ground inspection, answer questions, point out features, etc. And of course, we need pilots and airplanes to actually conduct the flights.

We'd like to have enough volunteers so that we can do this in "shifts" and spread the work. The airport will provide food (yes, free food), and Tim said he's working on a fuel discount for the day.

Of course, EVERYONE involved will

have to pass the EAA's Youth Protection process (a computer-based exam and a background check. It does not take long to complete, but we cannot allow participation without that step being cleared.

Mark will have more details at the meeting.

Fly Safe

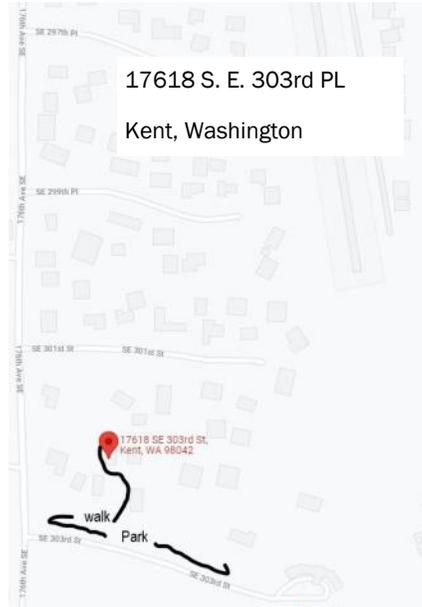
Brian Lee



Scottish Highlander Update:

I finished the build on 4/14 after the installation of my vortex generators and a few other clean-up items. I put the plane into the FAA AWS system for certification on Friday the 15th. I asked for Matt Bauermeister, from Paladin Aero at Auburn, to be the DAR. Edwin Sharp is graciously allowing me to use his Auburn hangar for the certification and some initial flights while he has his Comanche at S36. After doing that, I discovered some leaks in the fuel system... so I'm tracking those down before I have the cert inspection. Fingers crossed

WHERE DO WE MEET EACH MONTH?



APRIL PROGRAM

Norms Aviation Experiences

Program:

Norms Experience in Aviation

2022
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SCOTTISH HIGHLANDER, SEARCH FOR VERTICAL FLIGHT, EAA NEWS:

that it is just fittings that need tightening, and not a leaking header tank -- that has been a problem with some of the welded aluminum header tanks from this particular supplier. Here's a shot of the plane, tied to a tree in my cul-de-sac where I did the WOT engine runs to dial in the prop pitch to match the peak power/torque rpm of the Yamaha Apex engine (9,500 rpm)... a real crowd pleaser in the neighborhood

See you on Thursday!

Steve

The Search for Vertical Flight:

The next few articles will cover the development of several vertical flight aircraft. We will start with the first known single rotor helicopter of Ivan Sikorsky the V300 and then move into a couple of tail sitters developed for the Navy.



Sikorsky V300:

The Search for vertical flight has been around since man has dreamed of flying. This includes designs by Leonardo da Vinci. There were many stops along the way, mostly in the wrong direction. Igor Sikorsky was born in Russia and he developed a great aeronautical understanding by attending different Polytechnical schools in Russia and Paris. He was inspired by his love of literature and read Jules Verne science fiction along with studying the Leonardo da Vinci's designs.

He started on his journey of vertical flight in 1909/1910. He built a couple of versions of test rotors and used the Ansani engine that he had purchased in Paris France. He found that the his rotor system only produced about 160 kg of lift and that he was just shy of the 200 kg lift needed to lift the engine and rotors. His first model had four rotors and the second model was a better design in 1910. That model had more stable rotors and blades with higher lift. It flew in a tethered environment (without the pilot and main body) for up to 12 seconds for its longest flight. This model brought out issues that he would have to resolve later that included better controls, rotor and blade resonances. He went on to work with multi-engine fixed wing aircraft for the Russian Armed forces that became very successful bombers against the Germans in WWI and then on into amphibious aircraft which helped many new airlines get started opening up world travel.

Sikorsky emigrated to America through Paris France in 1918 and continued his work with fixed wing aircraft. He built an aircraft for the

NY to Paris run, but it crashed and just before departing for Paris. Charles Lindbergh completed his flight just before the Sikorsky aircraft could be rebuilt. He never lost his passion for perusing vertical flight. While there were many multi-rotor helicopters, especially in Europe that depended on multiple rotor much like the drones of today, no one had come up with a single rotor until in 1931 Sikorsky filed for and received a patent for the single rotor direct flying machine. His concept had a single engine that turned the main rotors and back propellor for directional control. First flight occurred in Sept 14 1939. He found that the he could hover, fly backwards and turn in any direction, except move forward. This resulted from the rear rotors losing effectiveness when attempting to tilt the plane forward. The resolution was to move the aft rotor further back on the plane. Once he did that he was able to fly forward. The base size and weights were increased which enhanced the stability and reduced rotor resonance. The VS 300 has set the standard for helicopters since 1931.

To Read More:

Wikipedia: [Click Here](#)

YouTube: [Click Here](#)

YouTube: [Click Here](#)

YouTube: [Click Here](#)

EAA News:

Meet the winners of the adventure writing contest:

Based on the enthusiasm from last year, we weren't surprised to get a lot of entries for EAA's Pilot

TECH COUNSELORS AND FLIGHT ADVISORS



Chapter 441 is fortunate to have two tech counselors.

Feel free to call Brian (253)-369-0489 , or Dave Nason any time. You don't need to wait for some significant milestone in your project. Remember, this is not an "inspection".

The shop doesn't need to be cleaned for a visit. All are quite used to looking at pieces, parts, and assorted bits, and will be happy to answer questions, offer advice, and generally talk about projects, building, flying, or whatever.



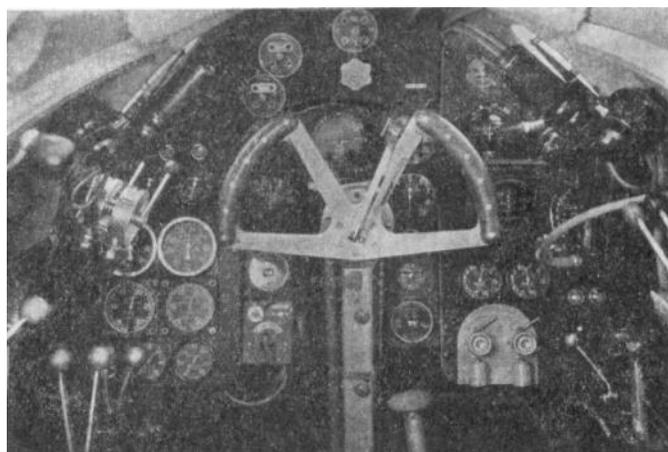
GUESS THAT AIRPLANE; GUESS THAT INSTRUMENT PANEL

This months Guess that Airplane:

See Page 7 for March's Airplane:

This months Instrument Panel:

See Page 8 for March's Instrument Panel



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EAA NEWS CONTINUED, EDITORS CORNER MARCH MEETING MINUTES, MOVIE AND AN AIRPLANE

Your Own Adventure Contest, supported by Flight Outfitters. Our panel of judges read nearly 200 stories, and, while it was an extremely close race, ultimately chose five winners. You'll be able to read their stories in July, as we will publish them, both online and in the daily AirVenture Today newspaper, during this year's AirVenture.

To Read More: [Click Here](#)

EAA is closely monitoring an ongoing FAA enforcement case involving social media personality Trent Palmer.

While the case has been quietly underway since 2019, Palmer disclosed details of the case in a widely circulated YouTube video published late last week.

The case involves an "inspection pass" that Palmer says he undertook over a friend's property, to determine if his modified backcountry Kitfox was capable of landing on a small strip normally used for model flying. He decided that it was not safe to land at the strip and abandoned the landing attempt. According to Palmer's account, a neighbor of the friend documented the flight on a surveillance camera and reported the incident to the FAA, which charged Palmer with violating FARs 91.13, prohibiting careless and reckless operation, and 91.119(a) and (c), which specify minimum safe altitudes. 91.119 does not apply to operations necessary for takeoff and landing.

To Read More: [Click Here](#)

Editors Corner:

The impossible Newsletter:

I hope that this finds you well. I find myself in a suddenly un-healthy state and have had 4 trips to the hospital during the time I should have finished the Newsletters. I am truly sorry that I have been late with the Newsletter so many times, but my health comes first. These episodes have made me think about what I want versus what I can do and thus I am letting go of a few things to be more in line with that.

I love the idea of building an airplane, but history has shown, I never make any progress. Therefore I am giving to Mark the Wag Aero 2+2 with his consent in the same manner I received it. donated to him to build. I plan to help work on it, health allowing. I plan to continue to write the Newsletters for a while and will make every effort to be better on my timing.

This Newsletter is written as if it is yet to happen, but

will be a little shorter. I appreciate your understanding and patience as I move through the medical system and their appointments.

Chapter 72 has a raffle that they are promoting. It is for a RANS S-19 and the brochure with all of the details will be sent separately.

Build Straight.

Berling



Movie and an Airplane:

Last months selection:

This Months Movie and an Airplane:

MOVIE AND AN AIRPLANE CONTINUED:

Documentary (2017)

German title : Soldaten der Lüfte

English title :The Aces' war

Starring:

Jérémie Duvall (Georges Guynemer)

Thomas Debaene (Manfred von Richthoffen)

Fabien Wolfrom (Ernst Udet).



To Read More: [Click Here](#)

This months Movie and an Airplane:

March's Meeting minutes:

Steve Cameron provided a presentation on his Scottish Highlander and his experiences with and details of the "unbreakable" Lexan windshields. Due to circumstances, no photos were taken..

Didi you know that our airfield has or had (I haven't walked the airport hangers in a couple of years so the status is unknown) a Bamboo Bomber and also a lot of controversy about the claims the owner makes.



LAST MONTHS GUESS THAT AIRPLANE:**Cessna UC-78/AT-17/T-50:**

The Cessna AT-17 Bobcat or Cessna Crane is a twin-engine advanced trainer aircraft designed and made in the United States, and used during World War II to bridge the gap between single-engine trainers and larger multi-engine combat aircraft.

The commercial version was the Model T-50, from which the military versions were developed.

In 1939, three years after Clyde Cessna retired, the Cessna T-50 made its first flight, becoming the company's first twin-engine airplane, and its first retractable undercarriage airplane. The prototype T-50 first flew on 26 March 1939,[1] and was issued Approved type Certificate 722 on 24 March 1940.

Design and Development

The AT-8, AT-17, C-78, UC-78 and Crane were military versions of the commercial Cessna T-50 light transport. The Cessna Airplane Company first produced the wood and tubular steel, fabric-covered T-50 in 1939 for the civilian market, as a lightweight and lower cost twin for personal use where larger aircraft such as the Beechcraft Model 18 would be too expensive. A low-wing cantilever monoplane, it featured retractable main landing gear and trailing edge wing flaps, both electrically actuated via chain-driven screws. The retracted main landing gear left some of the wheels extended below the engine nacelle for emergency wheel-up landings. The wing structure was built around laminated spruce spar beams, truss-style spruce and plywood ribs, and plywood wing leading edges and wing tips. The fixed tailwheel is not steerable, but can be locked straight. The Curtiss Reed metal fixed-pitch propellers were soon replaced with Hamilton Standard 2B-20-213 hydraulically-actuated, constant-speed, non-feather able propellers. Power was provided by two 225 hp (168 kW) Jacobs L-4MB engines rated at 245 hp (183 kW) for takeoff. Production began in December 1939.

Specifications:**General characteristics**

Crew: pilot + four

Length: 32 ft 9 in (9.98 m)

Wingspan: 41 ft 11 in (12.78 m)

Height: 9 ft 11 in (3.02 m)

Wing area: 295 sq ft (27.4 m²)

Empty weight: 3,500 lb (1,588 kg)

Gross weight: 5,700 lb (2,585 kg)

Max takeoff weight: 6,062 lb (2,750 kg)



Powerplant: 2 × Jacobs R-755-9 seven-cylinder, air-cooled, radial piston engine, 245 hp (183 kW) each

Performance:

Maximum speed: 195 mph (314 km/h, 169 kn)

Cruise speed: 175 mph (282 km/h, 152 kn)

Stall speed: 63–66 mph (101–106 km/h, 55–57 kn)

Range: 750 mi (1,210 km, 650 nmi)

Service ceiling: 22,000 ft (6,700 m)

Rate of climb: 1,150 ft/min (5.8 m/s)

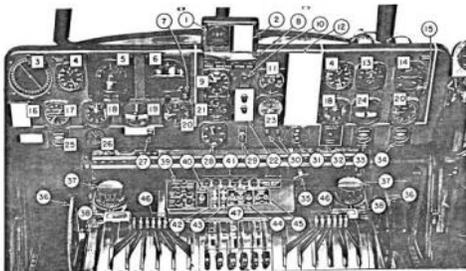
Take-off run: 650 ft (200 m) to 50 ft (15 m) [1]

Landing run: 1,400 ft (430 m) from 50 ft (15 m) with a 90 mph (140 km/h) approach speed

LAST MONTHS GUESS THAT INSTRUMENT PANEL:

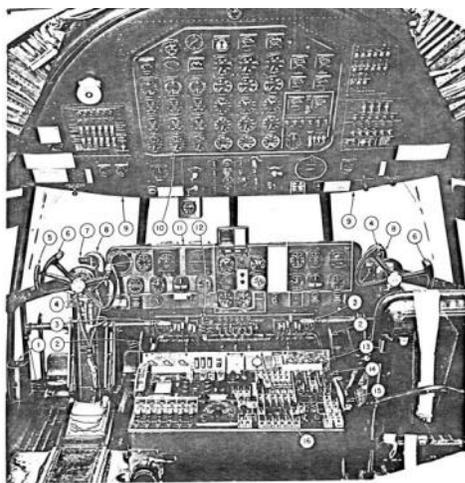
The Convair XC-99

The Convair XC-99, AF Ser. No. 43-52436, is a prototype heavy cargo aircraft built by Convair for the United States Air Force. It was the largest piston-engined land-based transport aircraft ever built, and was developed from the Convair B-36 Peacemaker bomber, sharing the wings and some other structures with it. The first flight was on 24 November 1947 in San Diego, California, and after testing it was delivered to the Air Force on 26 May 1949.



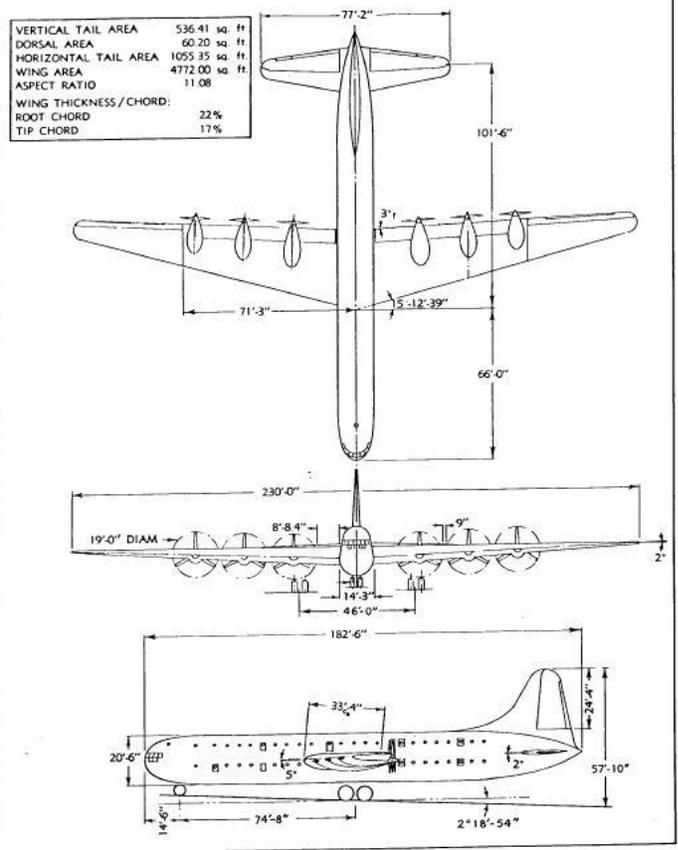
- | | |
|---|---|
| 1. Magnetic Compass | 25. Pilot's Oxygen Blinker |
| 2. Magnetic Compass Correction Card | 26. Clock |
| 3. Radio Compass | 27. Brake Low-Pressure Warning Light |
| 4. Airspeed Indicator | 28. Radio Altimeter (to be installed) |
| 5. Master Direction Indicator | 29. Altitude Limit Switch (to be installed) |
| 6. Vertical Gyro (Flight Indicator) | 30. Radio Altimeter Indicator Lights (to be installed) |
| 7. Caging Control | 31. Aileron Tab Position Indicator |
| 8. Propeller Reverse Pitch Indicator Lights | 32. Aileron Tab Position Indicator Calibrating Rheostat |
| 9. Manifold Pressure Gage | 33. Flight Engineer's Oxygen Blinker |
| 10. Barker Beacon Light | 34. Copilot's Oxygen Blinker |
| 11. Master Motor Tachometer | 35. Windshield Defrost Control |
| 12. Simplified Unrestricted Propeller Range Placard | 36. Elevator Tab Control |
| 13. Direction Indicator Repeater | 37. Rudder Tab Control |
| 14. Vertical Gyro (Flight Indicator) | 38. Aileron Tab Control |
| 15. Caging Control | 39. Cargo Door Position Indicator Lights |
| 16. Compass Correction Card | 40. Cargo Release Switch |
| 17. Flapgate Compass Indicator | 41. Mixture Control Indicator Lights |
| 18. Altimeter | 42. Pilot Heater Switch |
| 19. Rate Gyro (Turn-and-Bank Indicator) | 43. Windshield Wiper Switch |
| 20. Rate-of-Climb Indicator | 44. Recognition Light Switches |
| 21. Flap Position Indicator | 45. Position Light Switches |
| 22. Landing Gear Position Warning Lights | 46. Throttles |
| 23. Left and Right Indicator (Radio Loop) | 47. Mixture Controls |
| 24. Rate Gyro (Turn-and-Bank Indicator) | |

Figure 1-4. Flight Instrument Panel and Pilot and Copilot Control Pedestal



- | | |
|---|--|
| 1. Nose Wheel Steering Cylinder | 9. Overload Board |
| 2. Elevator Tab Control | 10. Flight Engineer's Instrument Panel |
| 3. Rudder Tab Control | 11. Flight Instrument Panel |
| 4. Pilot's or Copilot's Autopilot Disconnect Switch | 12. Pilot and Copilot Control Pedestal |
| 5. Nose Wheel Steering Lever | 13. Ignition Panel |
| 6. Pilot's or Copilot's Microphone Switch | 14. Flight Engineer's Control Pedestal |
| 7. Control Locks Switch | 15. Flight Engineer's Data Case |
| 8. Glide-Path Indicator | 16. Throttle and Mixture Control |

Figure 1-3. Flight Deck Looking Forward



Three-View Drawing