

# THE SLIPSTREAM

THE NEWSLETTER OF GREEN RIVER EAA CHAPTER 441 KENT, WA  
 JANUARY 2022

**INSIDE THIS ISSUE:**

**PRESIDENTS COLUMN** 1  
**PIETENPOL UPDATE** 1  
**SCOTTISH HIGHLANDER UPDATE** 3  
**XB-35 DEVELOPMENT CONTINUED** 3  
**GUESS THAT AIRPLANE** 4  
**GUESS THAT INSTRUMENT PANEL** 4  
**A MOVIE AND AN**  
**EDITORS CORNER** 6  
**I LEARNED ABOUT FLYING** 6  
**MOVIE AND AN AIRPLANE** 7  
**DECEMBER PART 1 GUESS THAT AIRPLANE** 8  
**DECEMBER PART 2 GUESS THAT AIRPLANE** 9  
**DECEMBER PART 1 INSTRUMENT PANEL** 10  
**DECEMBER PART 2 INSTRUMENT PANEL** 11  
**ADDENDUM EAA ON-LINE WORKSHOPS** 12

It is that time of year where EAA has many on-line courses for us to move forward in our building an aircraft. Please see the Addendum 1 for more information. Please sign up if you are able. Note that Ron Wanttaja has a session scheduled, please support him if you are able.

**PRESIDENTS COLUMN, JEFF MILLER TECH VISIT, PIETENPOL UPDATE:**

**Presidents Column:**

Well, 2022 has shown its face. We are past the Solstice, so the days are getting longer (Yea!). I do feel a bit cheated by the weather: the snow and cold after Christmas significantly altered my airplane working plans. I could not even get out of the driveway for several days! Then, last week we had 3 days without rain. The weather guessers told us that this (3 days) was the longest dry spell since September. Ugg. Now, this week, we've got 6 or 7 dry days forecast, but we will have thick fog. Ugg, again.

Nevertheless, days are getting longer, April is coming, and we're into a new year. We will celebrate the new year with a project visit for this month's meeting: Jeff Miller wants to show us the custom airplane he is designing and building. I don't think a virtual meeting will be possible with this project visit. Bring a mask to try to keep everyone safe. See details and directions in the newsletter. For those not familiar, I'd suggest driving by in the daylight; it is still pretty dark at 7PM.

Fly safe.

Brian

**Tech Visit: Jeff Miller:**

Hello everyone – I am looking forward to hosting the Chapter meeting at my hangar this month.

My address is:

17621 SE 299th PL

Kent, WA 98042

I am the 2nd house from the corner after the turn on 299th. The mailbox has "Miller" on the mailbox. The house is set back from the road with large parking area close to the house. Feel free to park in the drive way... fill it up.

I also have a relatively small heater for the hangar so dress warmly.

c.206-390-7848

Jeff Miller

**Pietenpol update:**

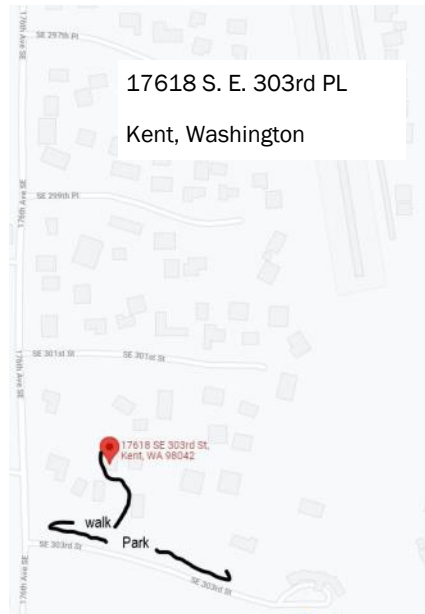


Hello 441,

Hope you are all starting out the New Year 2022 safe and healthy. Denise and I are doing well here in Independence Oregon at the airpark.

We are having the magnetos and exhaust replaced on our 1946 Globe Swift. Sharing photos of Mike and his team at Flight Wing in Salem, OR who are doing excellent work. Looking forward to the work being completed so I can continue the transition training in the aircraft. It took 9 months but we finally got the official

## WHERE DO WE MEET EACH MONTH?



## JANUARY PROGRAM

Tech visit with Jeff Miller

### Program:

Tech Visit:

Hello everyone – I am looking forward to hosting the Chapter meeting at my hangar this month.

My address is:

17621 SE 299th PL  
Kent, WA 98042

I am the 2nd house from the corner after the turn on 299th. The mailbox has "Miller" on the mailbox. The house is set back from the road with large parking area close to the house. Feel free to park in the drive way... fill it up.

I also have a relatively small heater for the hangar so dress warmly.

c.206-390-7848

Jeff Miller

### 2022

#### OFFICERS

**President:**

Brian Lee

(253)-639-0489

**Vice-President:**

Mark Owens

**Secretary:**

To be determined

**Treasurer:**

Steve Crider

**Tech Counselors/ Flight  
Advisors:**

Brian Lee

(253)-639-0489

Dave Nason

Jonathan Lee

(253) 508-1376

**Newsletter Editor:**

Berling Schert

(206) 713-9910

windridershaman@gmail.com

**PIETENPOL UPDATE CONTINUED, SCOTTISH HIGHLANDER UPDATE, XB 35 DEVELOPMENT CONTINUED FROM LAST MONTH:**

registration yesterday from the FAA!



I assisted with a webinar last night for EAA on the Aerocar. It will apparently be available to stream at a later date after they edit and upload it to the EAA website.



Not much progress on the Pietenpol as we're completing some renovation projects in the home. "Salem Tent and Awning" and Denise did sew a 15' screen for our hangar so we can watch aviation movies in the hangar...!

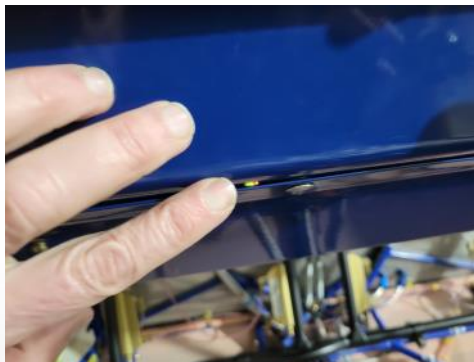
Hope you all are doing well....

Jake

**Scottish Highlander update:**



Starting Final Assembly on my Highlander. I hope to have it completed by the 22nd. Here is a shot of it in the 'Final Assembly Area'. It looked pretty awesome when I put the bush tires on... 8 degrees of nose-up attitude! I took the tires back off for the next bit just to reduce the potential for altitude sickness climbing up ladders to finish off the windshield, etc. I also tried out using fiber optic cable to see the status of my ADS-B In box (FlightBox). It is hidden in my avionics tray, but the status lights were meant to be seen when it was plopped on top of the glareshield. I temporarily mounted 6 strands of fiber optic cable taped into a flat strip inserted into the FlightBox and routed it to the gap between my



instrument panel and the avionics tray. It works pretty slick.

My biggest thing about this build was getting sucked into doing it

someplace other than home, where I could get people I trust (from our Chapter) to come look at it while it was being built. Jim Huber made a couple very valuable Tech Counselor visits last year, but my build assist person moved 140 miles away so it is now too far for anyone to travel (except the DAR!).

The next action steps include a diagnostic engine run (simulating a complete flight) to collect data to send to the guy who built the tuner for the Apex snowmobile engine I'm using. This has proven valuable already, because I sent him some data a couple weeks ago when starting the engine for the first time. It was starting hard. He discovered there was a sync error between the cam shaft and start signal in his tuner that needed corrected. This next data will make me feel more comfortable about the engine's readiness for flight.

Steve

**XB-35 Flying Wing Development Continued:**

This month I am going back a little to discuss some of the technical issues around the N1m and N9M before moving into the XB-35.

**N-1M:**

The aircraft utilized "pure drag" rudders in the outboard tips of the wing. These were utilized as roll trim tabs as well. Since there was no rudder, side forces on the aircraft were non-existent, although the extended landing gear and engine nacelles did provide some side force. What this meant to the pilot was that it was harder for him to determine that he was

## 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

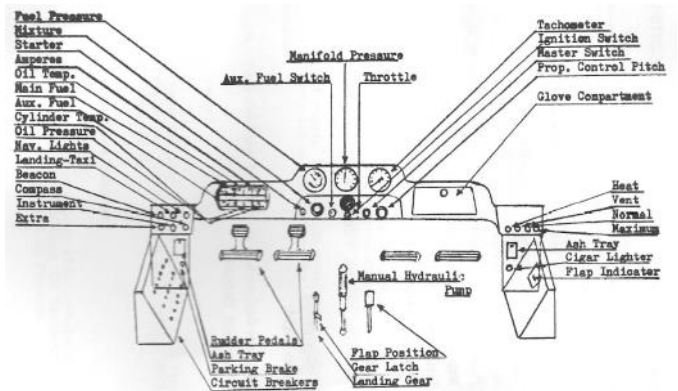
This month's Guess that Airplane:

See Page 8 for December Part 1 2021 and Page 9 for December Part 2 2021:



This month's Instrument Panel:

See Page 10 for December Part 1 Instrument Panel and Page 11 for December Part 2 Instrument Panel



**DISCLAIMER:** The "SLIPSTREAM" Newsletter is published as a clearing house for ideas, opinions, experiences and member information. No responsibility or liability is expressed or implied. Anyone using or purchasing parts or product is doing so at his or her own risk, and is

**XB-35 DEVELOPMENT CONTINUED:**

side-slipping. You will see on gliders a small length of yarn taped to the canopy that gives a graphical show of the side slip that is occurring in all realms of flight. It is not known whether Northrop used this technique as photographic evidence does not show any yarn strings on the canopy.

A lot of the early testing was accomplished by paper and balsa models at the local dance hall. NACA demonstrated that the full-size N-1M was very unlikely to spin, but there were stability issues that did need addressing such as changing of the location of the C.G as fuel was burned, turning stability, and the usual lack of symmetry when an engine failed. The use of dropped wing tips that could be raised to a straight configuration where the outboard rudders existed was hoped to provide extra stability, but they provided almost no directional stability at the cost of lift and load bearing structure. The N-1M on its first flight only lifted above 10 feet when the undercarriage hit a bump in the runway. They discovered that it required a higher Angle of Attack (AoA) and the nose gear was lengthened and a bump tail-wheel was added to prevent hitting the props on rotation. The N-1M was 200 pounds over weight and the engines were underpowered for the actual needs of the aircraft. The elevons were extended back because the airflow at the high angle of attack needed for take off and climb, separated from the wing and the rudders and aileron's became ineffective. They made many towed flights behind a C-47 between Hawthorne and Muroc which demonstrated that once flight was made into more normal angles of attack, the airplane did handle moderately well.

**N-9M:**

The N-9M had acceptable stall and spin characteristics but did have a tendency to tumble around the pitch axis. Wing tip slots were added and eventually a fully powered hydraulic control system that would be used in the XB-35 was installed. The first N-9M had forward opening airbrakes but were never fully tested. Many flight tests were cancelled due to engine issues. The N-9M experienced elevon control reversal at a high angle of attack. It was also had a C.G. situated near the rear. This combination caused a nose-down spin and did not respond the left anti-spin parachute which streamered in the airflow. The pilot (Max Constant) was unable to bail out due to the full aft stick pinning him into the seat, on May 19, 1943. The fully hydraulic powered system was not available and they put in a hydraulic ram pusher to assist the pilot out of this situation. Control reversal of the rudders occurred at AoA above 34 degrees and tumbling could happen if it entered a spin while pitching up and down. Once the fully integrated "artificial pitch feel" hydraulic intended for the XB-35 was installed, flying through the extreme AoA regions became less of a problem.

The N-9 had two paint schemes, the original all Northrop flight test yellow and the second was a light blue lower surface and a yellow upper surface which facilitated observer seeing whether it was looping or rolling whether it was observed from in flight or on the ground. The aircraft was reported on favorably by the USAAF personnel and the N-9M went on to familiarize the USAAF pilots for flight testing the XB-35. A N-9MB was restored and flown again on November 11, 1994 by Planes of Fame Museum at Chino California.

**XB-35 Development, RFP specs:**

The XB-35 and its competitor, Convair's XB-36 Peacemaker was designed around a requirement that the US Government felt was needed if Great Britain fell to Nazi Germany. The general specifica-

## **XB-35 DEVELOPMENT, CONTINUED, EDITORS CORNER, I LEARNED ABOUT FLYING FROM THAT:**

tion was for a 10,000 pound load of bombs and 10,000 mile range to allow the US to hit Europe from North America and return. The prototypes, the N1M and N9M proved that the Flying Wing concept was viable despite many developmental issues. Jack Northrop was familiar with the progress that the Horten Brothers were making in Germany on flying wings.

The XB-35 had excellent all around vision, for the pilot, though his rearward views were limited by the wing. The Co-pilot had a much lower range of view due to the wing and even though all of the instruments and controls were available to him, he could not land or take-off due to the obstructed views. The other crew members were in windowless cabins. The main gear had two wheels and retracted forward and the nose gear was a single wheel that retracted to the left and were electrically actuated. The brakes were linked to the rudders, but required one of three switches had to be pushed and held to actuate the brakes

To be Continued next month.

### **Editors Corner:**

The daylight is getting longer and the temperatures are getting better. Remember that there are opportunities to learn more about building an airplane, While you may have built an airplane, why not look at a different method through the lens of these opportunities? Please see the Addendum at the back of this Newsletter. Please note that I had to launch the site and the email provided did some auto-fill from my email and I am fairly certain that I was not able to scrub my information out of the URLs I provided in the Addendum.

The Northwest Aviation Conference and Trade show is still on and scheduled for February 26-27th. Please [Click Here](#) for more details. Make sure that you follow the site for any announcements and if I hear of any changes, I will pass them on.

I am slowly coming out of my winter hibernation, I have ordered a couple of shelves to help get the stuff off of my workbench that was moved there while we complete some upgrades to our house to make it more comfortable for my wife to work from home. I hope to be able soon to ask for assistance in welding some control horns to the elevators and rudder.

I have continued the XB-35 development article to include some of the issues with the N1M and N9M that was experienced in their development, and I hope to complete the article next month.

Is there an aircraft development or technical details about aircraft, or even flight instruction you would like to see in greater detail? This something I have wanted to write more about, even if it is not in Sport Aviation, Kitplanes or other venues. Please let me know and if I can, I will do my best to write something meaningful.

Do you have an embarrassing "I learned from that experience? Let me know and we will work through it together as gently as we can. I know that everyone here has some tale to tell, there is no judgement.

This Newsletter has to catch up on the 2 part Newsletter from December and thus may go a little long.

We will be visiting Jeff Miller in his hanger for a tech visit, see the location in the program section of the Newsletter. He is excited for us to visit his project. Many eyes, brains and hands make work a lot easier.

Build Straight

Berling

### **I learned about flying from that:**

Here is another situation I found myself in when I was instructing out of Xenia, Ohio.

I was instructing a truck driver in a Cessna 150 (Yes, in those days I could fly in a 150 with a passenger/student unlike today!). He had between 10 and 20 hours of pre-solo instruction. He managed the aircraft fairly well, his take off, landings and flight acuity was acceptable for the numbers of hours he had accumulated. So, I felt confident to let him fly solo. However there was one thing I missed. More on that shortly... His goal was to make 2 touch and goes and a full stop landing on the third time. He started down the runway and made two acceptable landings.

And that is when things went wrong. As he was powering up on his third go-around, he was suddenly skidding all over the runway. He did the right thing by chopping the throttle and stopped the airplane just before the end of the runway. He taxied in and he was almost as white as ghost. I debriefed him and asked him what had happened.

## I LEARNED ABOUT FLYING FROM THAT, CONTINUED, MOVIE AND AN AIRPLANE, DECEMBER MEETING MINUTES:

He said that his right foot slipped off of the rudder pedal and got caught between the rudder pedals. It turned out that he was wearing Cowboy high heeled boots that day and the boots were larger than his normal shoes and they jammed the controls when his foot slipped. It was then that I remembered that all of the glider instructors I knew had said to wear shoes like tennis or deck shoes when flying gliders. Unfortunately, he scared himself so badly, I never saw him again and a potentially good pilot was lost.

### What did I learn?

Be careful of your wardrobe when flying. Don't wear over sized articles like the great coat I wear in winter (imagine it out in the airstream beating against fabric or even metal with all of the metal snaps and other accoutrements), high heeled shoes (Yes I was height challenged and felt embarrassed and wore 3 inch heels for about a year, but wearing those shoes shortened my Achilles tendon and made glider flying painful, (Ok I am still height challenged), big cowboy boots (over-sized shoes), etc. Leave the high heels for walking around and not on the flight deck.

Notice if your student is wearing clothing inappropriate to the flight deck and suggest a change before flying. As an Instructor, it is your responsibility to notice any and all potential threats to flight safety, especially in todays climate of no tolerance.

Berling

### Movie and an Airplane:

Last months Movie and an airplane  
Movie (1927)

Also Known As : Slavia L-BROX 7

Starring:

Nelly (Irena) Ardenova (Tessy)

Sala (Alexander) Hess (Karel Smelý)

Jaromír Cikánek (Karen)

Anuse Studecká (Karel's Mother)

There is not much detail on what the movie is about other than it involves a Czechoslovakian attempt to break a flying record. The airplane is sabotaged, but the pilot saves the airplane in flight.

The airplane appears to be an Aero A.11

The Aero A.11 was a biplane light bomber and reconnaissance aircraft built in Czechoslovakia between the First and Second World Wars. It formed the basis for many other Czechoslovakian military aircraft of the inter-war period. Around 250 were

built, with some remaining in service at the outbreak of World War II.

To Read More:

Movie: [Click Here](#)

Airplane: [Click Here](#)



This months Movie and an Airplane



Decembers minutes were in December Part 2.

## GUESS THAT AIRPLANE—DECEMBER PART 1:

### Kaman HH-43 Huskie:

The Kaman HH-43 Huskie is a helicopter with intermeshing rotors used by the United States Air Force, the United States Navy and the United States Marine Corps from the 1950s until the 1970s. It was primarily used for aircraft firefighting and rescue in the close vicinity of air bases, but was later used as a short-range overland search and rescue aircraft during the Vietnam War.

Under the aircraft designation system used by the U.S. Navy pre-1962, Navy and U.S. Marine Corps versions were originally designated as the HTK, HOK or HUK, for their use as training, observation or utility aircraft, respectively

### Design and development

In 1947 Anton Flettner, a German aviation engineer, was brought to New York in the United States as part of Operation Paperclip. He was the developer of Germany's Flettner FI 282

"Kolibri" (Hummingbird), a helicopter employing the "synchropter" principle of intermeshing rotors, a unique design principle that dispenses with the need for a tail rotor. Flettner settled in the US and became the chief designer of the Kaman company, where he designed new helicopters using the synchropter principle.

### Operational history

This aircraft saw use in the Vietnam War with several detachments of the Pacific Air Rescue Center, the 33d, 36th, 37th, and 38th Air Rescue Squadrons, and the 40th Aerospace Rescue and Recovery Squadron, where the aircraft was known by its call sign "Pedro". During the war, the two-pilot HH-43 Huskie flew more rescue missions than all other aircraft combined, because of its unique hovering capability. The HH-43 was eventually replaced by newer aircraft in the early 1970s

### To Read More:

Wikipedia: [Click Here](#)  
 Tillamook Air Museum: [Click Here](#)  
 Helis.com: [Click Here](#)  
 NHA Historical Society: [Click Here](#)  
 Dark Skies (YouTube): [Click Here](#)  
 Huskie walk around and flight (Olympic Airshow 2018): [Click Here](#)

### General characteristics



Crew: 2 flight crew + 2 rescue crew  
 Capacity: 3,970 lb (1,801 kg) maximum payload  
 Length: 25 ft 2 in (7.67 m) fuselage  
 Height: 15 ft 6.5 in (4.737 m) to tip of highest blade  
 12 ft 7 in (4 m) to top of rotor pylons  
 Empty weight: 4,620 lb (2,096 kg)  
 Gross weight: 6,500 lb (2,948 kg)  
 Max takeoff weight: 9,150 lb (4,150 kg)  
 Fuel capacity: 350 US gal (291 imp gal; 1,325 l)  
 Powerplant: 1 × Lycoming T53-L-11A turboshaft engine, 825 shp (615 kW) (de-rated from 1,150 shp (858 kW))  
 Main rotor diameter: 2 × 47 ft 0 in (14.33 m)  
 Main rotor area: 3,470.34 sq ft (322.405 m<sup>2</sup>)  
 Blade section: - root: NACA 23012; tip: NACA 23011

### Performance

Maximum speed: 120 mph (190 km/h, 100 kn)  
 Cruise speed: 110 mph (180 km/h, 96 kn)  
 Range: 504 mi (811 km, 438 nmi) at 5,000 ft (1,524 m) and 8,270 lb (3,751 kg) TOW  
 Service ceiling: 23,000 ft (7,000 m)  
 Hover ceiling IGE: 20,000 ft (6,096 m)  
 Hover ceiling OGE: 16,000 ft (4,877 m)  
 Rate of climb: 1,800 ft/min (9.1 m/s)



## GUESS THAT AIRPLANE—DECEMBER PART 2:

### Blohm & Voss BV 141:

The Blohm & Voss BV 141 was a World War II German tactical reconnaissance aircraft, notable for its uncommon structural asymmetry. Although the Blohm & Voss BV 141 performed well, it was never ordered into full-scale production, for reasons that included the unavailability of the preferred engine and competition from another tactical reconnaissance aircraft, the Focke-Wulf Fw 189.

### Development

In 1937, the German Air Ministry – the Reichsluftfahrtministerium (RLM) – issued a specification for a single-engine reconnaissance aircraft with optimal visual characteristics. The preferred contractor was Arado with the Ar 198, but the prototype proved unsuccessful.[1] The eventual winner was the Focke-Wulf Fw 189 Uhu; even though its twin-boom design using two smaller engines did not match the requirement of a single engined aircraft. Blohm & Voss (Hamburger Flugzeugbau) although not invited to participate, pursued as a private venture something far more radical.[1] The proposal of chief designer Dr. Richard Vogt was the uniquely asymmetric BV 141.

### Design

The Plexiglas-glazed crew gondola on the starboard side strongly resembled that found on the Fw 189, and housed the pilot, observer and rear gunner, while the fuselage on the port side led smoothly from the BMW 132N[1][a] radial engine to a tail unit.

At first glance, the placement of weight would have induced tendency to roll, but the weight was evenly supported by lift from the wings.

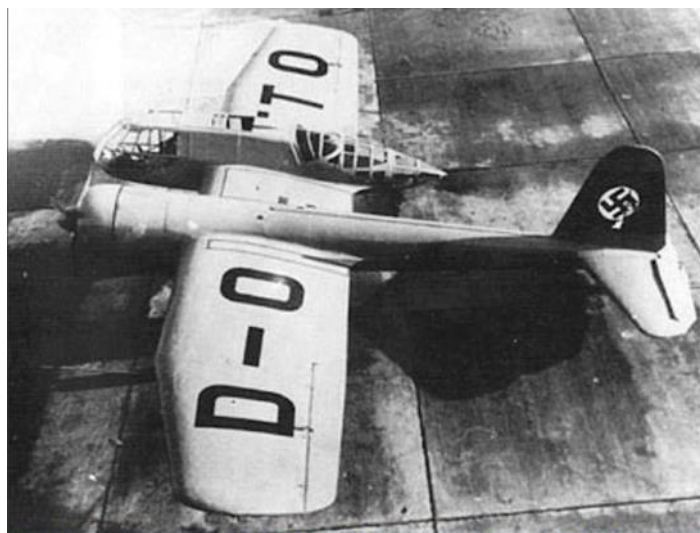
In terms of thrust vs drag asymmetry, the counteracting of induced yaw was a more complicated matter. At low airspeed, it was calculated to be mostly alleviated because of a phenomenon known as P-factor, while at normal airspeed it proved to be easily controlled with trimming.

The tailplane was symmetrical at first, but in the 141B it became asymmetrical – starboard tailplane virtually removed – to improve the rear gunner's fields of view and fire.

### To Read More:

Wikipedia: [Click Here](#)

Plane Encyclopedia: [Click Here](#)



Military Factory: [Click Here](#)  
 Dark Skies (YouTube): [Click Here](#)  
 Plane Encyclopedia (YouTube): [Click Here](#)

### General characteristics

Crew: 3  
 Length: 13.95 m (45 ft 9 in)  
 Wingspan: 17.45 m (57 ft 3 in)  
 Height: 3.6 m (11 ft 10 in)  
 Wing area: 52.9 m<sup>2</sup> (569 sq ft)  
 Empty weight: 4,700 kg (10,362 lb)  
 Gross weight: 5,700 kg (12,566 lb)  
 Max takeoff weight: 6,100 kg (13,448 lb)  
 Powerplant: 1 × BMW 801A 14-cyl. air-cooled radial piston engine, 1,147 kW (1,538 hp) for take-off at sea level

### Performance

Maximum speed: 368 km/h (229 mph, 199 kn) at sea level; 438 km/h (272 mph) at 5,000 m (16,404 ft)  
 Range: 1,900 km (1,200 mi, 1,000 nmi) maximum  
 Service ceiling: 10,000 m (33,000 ft)  
 Wing loading: 107.75 kg/m<sup>2</sup> (22.07 lb/sq ft)  
 Power/mass: 0.204 kW/kg (0.124 hp/lb)

### Armament

Guns: 2 x 7.92mm MG 17 machine guns (fixed forward), 2 x 7.92mm MG 15 machine guns (rear-mounted flexible)  
 Bombs: 4 x SC50 bombs

## GUESS THAT INSTRUMENT PANEL--DECEMBER PART 1:

### Mil MI-6 Hook

The Mil Mi-6 Hook is a heavy transport helicopter developed in Russia in the course of the 1950s. It has established many firsts: it was the first Soviet (twin) turbine powered helicopter to enter in production and for several years the largest, both for its size and for its load capacity. The Mil Mi-6 Hook also set 16 world records.

Unfortunately, the pilots manual I have is really strong in its technical detail and in Russian and the actual Instrument Panel is non existent. So....

#### To Read More:

Wikipedia: [Click Here](#)

Aviastar: [Click Here](#)

Heli Archive: [Click Here](#)

Viewat.org: [Click Here](#)

YouTube: [Click Here](#)

And: [Click Here](#)

And: [Click Here](#)

#### General characteristics

Crew: 6 (pilot, copilot, navigator, flight engineer, radio operator, technician)

Capacity: 90 passengers / 70 airborne troops / 41 stretcher cases with 2 medical personnel

Payload: 12,000 kg (26,455 lb) maximum internal cargo

9,016 kg (19,877 lb) at 44,000 kg (97,003 lb) TOW

7,516 kg (16,570 lb) at 42,500 kg (93,696 lb) TOW

5,516 kg (12,161 lb) at 40,500 kg (89,287 lb) TOW

Maximum slung load: 8,000 kg (17,637 lb)

Height: 9.156 m (30 ft 0 in)

Wing area: 35 m<sup>2</sup> (380 sq ft) auxiliary wing (when fitted)

Gross weight: 40,500 kg (89,287 lb)

Max takeoff weight: 44,000 kg (97,003 lb)

Fuel capacity: 8,250 l (2,180 US gal; 1,810 imp gal) (6,315 kg (13,922 lb)) in 11 fuselage tanks + 4,500 l (1,200 US gal; 990 imp gal) in two external tanks + optional 4,500 l (1,200 US gal; 990 imp gal) in auxiliary cabin tanks

Powerplant: 2 × Soloviev D-25V turboshaft engines, 4,100 kW (5,500 shp) each equivalent for take-off 2,312 kW (3,100 shp) at 3,100 m (10,200 ft) and 250 km/h (160 mph; 130 kn)

Main rotor diameter: × 35 m (114 ft 10 in)

Main rotor area: 962.1 m<sup>2</sup> (10,356 sq ft)

Blade section: root: NACA 23011 mod; tip: TsAGI

#### Performance

Maximum speed: 300 km/h (190 mph, 160 kn)



Cruise speed: 250 km/h (160 mph, 130 kn)

Range: 970 km (600 mi, 520 nmi) at 1,000 m (3,281 ft) at 40,500 kg (89,287 lb) TOW

Ferry range: 1,450 km (900 mi, 780 nmi)

Endurance: 2 hours 51 minutes at 140–160 km/h (87–99 mph; 76–86 kn) at 1,000 m (3,281 ft) and 40,500 kg (89,287 lb) TOW

Service ceiling: 4,500 m (14,800 ft) up to 42,500 kg (93,696 lb) TOW

3,000 m (9,843 ft) at more than 42,500 kg (93,696 lb) TOW

Wing loading: 32.15 kg/m<sup>2</sup> (6.58 lb/sq ft) at 40,500 kg (89,287 lb) at cruise speeds

Disk loading: 44.17 kg/m<sup>2</sup> (9.05 lb/sq ft)

Power/mass: 0.21 kW/kg (0.13 hp/lb)

#### Armament

The navigator's station can be equipped with a 12.7 mm (0.500 in) Afanasev A-12.7 machine-gun with up to 270 rounds

## GUESS THAT INSTRUMENT - DECEMBER PART 2:

## Alaparma Baldo

The Alaparma Baldo was an unusual two-seat light monoplane produced in Italy shortly after World War II. Designed by Adriano Mantelli, it featured an egg-shaped fuselage with cabin doors that hinged upwards and to the back. The conventional tailplane with single fin and rudder was carried on twin booms, either side of a pusher engine installation. The undercarriage consisted of a single mainwheel under the fuselage pod, a small tailwheel not far behind it, and outrigger wheels on the wingtips.

To Read More:

Wikipedia: [Click Here](#)

Aviastar.org: [Click Here](#)

**Specifications:****General characteristics**

Crew: 2

Length: 5.08 m (16 ft 8 in)

Wingspan: 7.00 m (23 ft 0 in)

Height: 1.45 m (4 ft 9 in)

Wing area: 8.5 m<sup>2</sup> (91 sq ft)

Empty weight: 280 kg (617 lb)

Gross weight: 490 kg (1,080 lb)

Powerplant: 1 × Praga D 4-cylinder horizontally-opposed piston engine, 56 kW (75 hp)

**Performance**

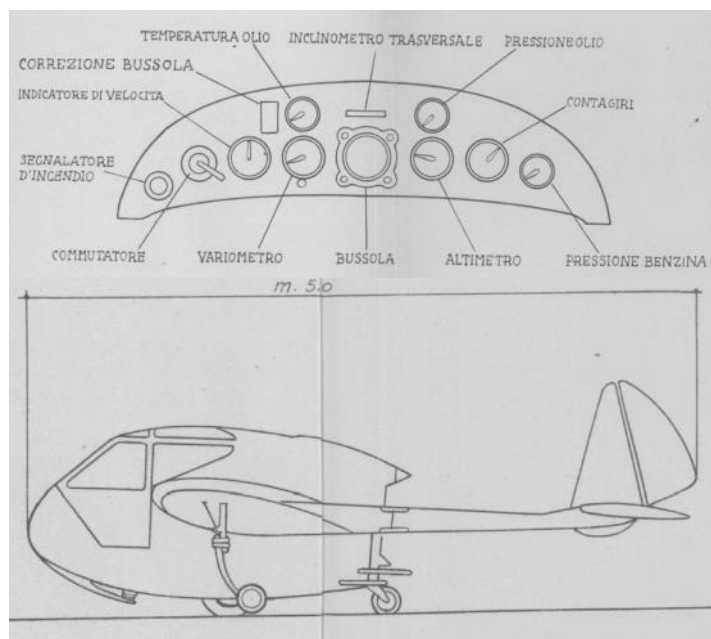
Maximum speed: 217 km/h (135 mph, 117 kn)

Cruise speed: 192 km/h (119 mph, 104 kn) (75% power)

Range: 660 km (410 mi, 360 nmi)

Service ceiling: 4,800 m (15,700 ft)

Time to altitude: 5 min to 1,000 m (3,300 ft)



**ADENDUM: EAA HOMEBUILDERS WEEK EVENTS:**

Register to attend the second-annual EAA Homebuilders Week online event on January 24-28, 2022! The full schedule of events is detailed below, where you can click the presentation title to register.

**MONDAY, JANUARY 24**

**11:30 a.m. - 12:45 p.m.** [Building An Aircraft – What You Need To Know](#)

Presenter: Charlie Becker

Company: EAA

**1 - 2:15 p.m.** [Panel Planning and Wiring](#)

Presenter: Marc Ausman

Company: Aviation Author

**2:30 - 3:45 p.m.** [Wiring Basics](#)

Presenter: Dick Koehler

Company: EAA SportAir Workshops

**4 - 5:15 p.m.** [Sonex Aircraft](#)

Presenters: Mark Schaible and John Monnett

Company: Sonex Aircraft

**5:30 - 6:45 p.m.** [Sheet Metal Basics](#)

Presenter: Mark Forss

Company: EAA SportAir Workshops

**7 p.m. - 8:15 p.m.** [Kit Selection](#)

Presenter: Paul Dye

Company: Kitplanes Magazine

**TUESDAY, JANUARY 25**

**11:30 a.m. - 12:45 p.m.** [Composite Construction Basics](#)

Presenter: Mark Forss

Company: EAA SportAir Workshops

**1 - 2:15 p.m.** [What Kills Us: A Look at Fatal Homebuilt Accidents](#)

Presenter: Ron Wanttaja

Company: Aviation Author

**2:30 - 3:45 p.m.** [Fabric Covering Basics](#)

Presenter: Mark Forss

Company: EAA SportAir Workshops

**4 - 5:15 p.m.** [Buying A Used Homebuilt](#)

Presenter: Vic Syracuse

Company: Base Leg Aviation

**5:30 - 6:45 p.m.** [Dynon Avionics](#)

Presenter: Michael Schofield

Company: Dynon

**7 p.m. - 8:15 p.m.** [Engine Selection Basics](#)

Presenter: Tom Wilson

Company: Kitplanes Magazine

**WEDNESDAY, JANUARY 26**

**11:30 a.m. - 12:45 p.m.** [EAA's Homebuilt Movement: Past, Present, and Future](#)

Presenter: Jack J. Pelton

Company: EAA

**1 - 2:15 p.m.** [TIG Welding with "Mr. TIG"](#)

Presenter: Wyatt Swaim

Company: TigDepot.com

**2:30 - 3:45 p.m.** [Zenith Aircraft Kits & Plans](#)

Presenters: Roger Dubbert and Sebastien Heintz

Company: Zenith Aircraft

**4 - 5:15 p.m.** [Gas Welding](#)

Presenter: Budd Davisson

Company: Airbum.com

**5:30 - 6:45 p.m.** [Advanced Flight Systems](#)

Presenter: Rob Hickman

Company: Advanced Flight Systems

**7 p.m. - 8:15 p.m.** [Selecting, Preserving, and Preparing Your Engine](#)

Presenter: Mike Busch

Company: Savvy Maintenance

**THURSDAY, JANUARY 27**

**11:30 a.m. - 12:45 p.m.** [Working With Wood 101](#)

Presenter: Marty Feehan

Company: Wag Aero 2+2 Builder

**1 - 2:15 p.m.** [Lycoming Engine Installation](#)

Presenter: Dave Prizio

Company: Aviation Author & FAA DAR

**2:30 - 3:45 p.m.** [Plansbuilt Aircraft: The Affordable Option](#)

Presenter: Tim Hoversten

Company: EAA

**4 - 5:15 p.m.** [Garmin Experimental Avionics Solutions](#)

Presenter: Brad Brensing

Company: Garmin

**5:30 - 6:45 p.m.** [Painting Your Plane: DIY or Use an Expert?](#)

Presenter: Craig Barnett

Company: Scheme Designers

**7 p.m. - 8:15 p.m.** [Van's RV Aircraft Kits](#)

Presenter: Greg Hughes

Company: Van's Aircraft

**FRIDAY, JANUARY 28**

**11:30 a.m. - 12:45 p.m.** [Amateur-Built Aircraft Certification Process](#)

Presenter: Joe Norris

Company: FAA DAR

**1 - 2:15 p.m.** [Liability of Selling Your Homebuilt](#)

Presenters: Kathy Yodice and Pat Phillips

Company: EAA Legal Advisory Council

**2:30 - 3:45 p.m.** [Government Issues for Homebuilders](#)

Presenter: Tom Charpentier

Company: EAA

**4 - 5:15 p.m.** [Flight Test 101](#)

Presenter: Paul Dye

Company: Kitplanes Magazine

**5:30 - 6:45 p.m.** [Sling Aircraft Kits](#)

Presenters: Mike Blyth and Jean d'Assonville

Company: Sling Aircraft

**7 p.m. - 8:15 p.m.** [Maintenance on Amateur-Built Aircraft](#)

Presenter: Vic Syracuse

Company: Base Leg Aviation