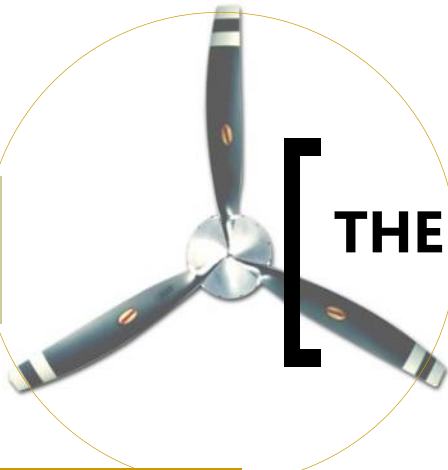


THE SLIPSTREAM

THE NEWSLETTER OF GREEN RIVER EAA CHAPTER 441 KENT, WA

MAY 2019



PRESIDENTS COLUMN:

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Presidents Column:

Helpful, Creative Controllers

Every now and then, we get a nice surprise from our colleagues in ATC land. Last week, I went out to get my instrument approaches current. Every 6 months, whether I need it or not, I accomplish the required currency: 6 instrument approaches, holding, and practice intercepting and tracking electronic navigation signals.

My airplane has all the latest wiz-bang IFR avionics equipment you'd find in any 1968 product. I have 2 VOR receivers, an ILS, and ADF (that's the radio that can receive AM radio broadcasts...and point you to the antenna. I could always tell when Gil had been flying the airplane: the ADF would be tuned to the Mariner's game).

The only problem was that last week, the wind was blowing the wrong direction: it was from the North. Why is this a problem? Most of the traditional instrument approaches in Puget Sound are to the South. With one or two exceptions, all of the Northbound approaches require new-fangled radios: RNAV, IFR GPS, DME, etc. The exceptions are the NDB approaches. Except that when I asked for the NDB to Tacoma, I could not find the chart for it, and then the controller told me that it was no longer available. Bummer.

One could always fly a Southbound

approach with a North wind...you'd just have a tailwind. The big issue is with prevailing traffic. When Seatac is in a North flow, everyone else (with a tower) goes to the North as well. Tacoma, in particular, does not like IFR practice approaches (to the South) when they're in a North flow. It really messes up their traffic pattern. I get that.

Olympia, on the other hand, does not have nearly the amount of traffic that Tacoma has, and their tower controllers were happy to let me fly VOR and ILS approaches to the South. That's really great, and I appreciate their hospitality. The challenge with Olympia is that they're a ways from Seatac (and Seatac's radar), so on the missed approach, they're not going to see you or hear you below about 1500-1700 feet. And the missed approach procedure for the ILS has you going what seems like nearly to Chehalis before you can turn around and come back North.

I discussed this with the helpful approach controller. He came up with a superb solution: fly the approach downwind, but do a circle-to-land Northbound. We don't practice circling approaches very often, so it's a good idea in its own right. BUT, with a final approach back to the North, the controller could issue a missed approach of "Runway Heading to 3000 feet". This put me back North of the airport to start another approach to the South. Brilliant! Made my life more convenient AND let me

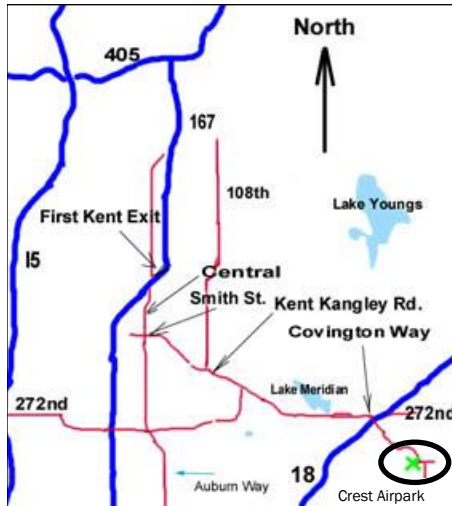
SPECIAL POINTS OF INTEREST:

Norm Grier Field Flyin and Barbecue June 8 2019
See Poster, Page 7

Wings and Wheels Fly and Drive in Saturday August 17, 2019 Richland, Washington
See Poster on Page 8

EAA 292 From Independence Oregon Fly-In and STOL Expo August 16-18 2019
See Poster on Page 9

WHERE DO WE MEET THIS MONTH?



Meets 4th Mondays 7:00 pm
 17605 SE 288th PL, Kent
 The Mellema Hanger



MAY PROGRAM

Program is being confirmed:
 Raspberry pi

Possibly John Marzulli Buld a HUD with

Program

May Program

Mark is confirming the program. It is planned to be John Marzulli and building a HUD with Raspberry pi. Stay tuned for an update.

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PIETENPOL UPDATE, CHIPPER TOO, DARINS RV ADVENTURES:

practice a procedure not so often flown.

This was a great experience!

Fly Safe.

Brian

Other notes: The Normandy Aircraft open house in June will require some volunteers. Chapter 441 will have a tent (awning), a couple of tables, and home-made ice cream.

Pietenpol Update:

Hello 441,

Progress continues on my 1931 Pietenpol.....

Even though I am a few months away from needing the leather for the cockpit surround, I thought it would be a good thing to order an extra batch of the same leather that was used to upholster the seats. It's a good thing I did now because the shop that ordered it for me (the shop that did the upholstery) said that the tannery is discontinuing that leather style/color and the spare piece which I ordered is the LAST ONE available....! I realize it may not be a big deal if the cockpit surround leather matches the seat upholstery - I would just find a leather that is close in color/texture - but it sure is a nice little day when something



like this works out for the positive...!

In other activity I have been punching some holes in the sky in a 172 and I learn something every time.

Having fun and learning a lot....

Jake

Chipper Too:

Chipper TOO Serial #002 receives its airworthiness certificate! Thanks to Mitch and Janice from the Wichita MIDO.

An intense thunderstorm was rolling over the airport, and a beautiful light comes through on the translucent hangar door. Chipper TOO sits in the hangar and wishes it could be flying.

To Read More, about the Chipper Too and their new Single Seat Chipper [Click Here](#)

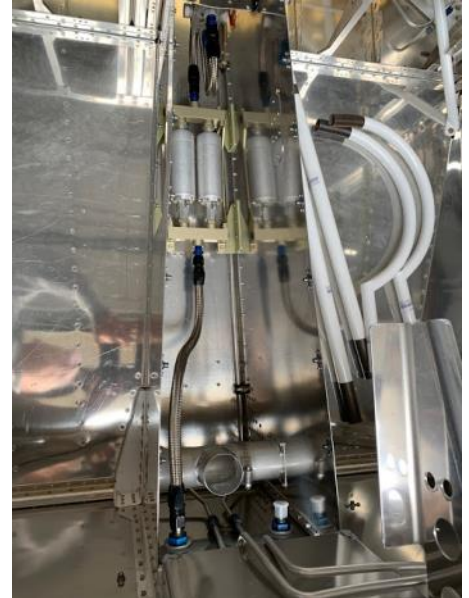
Chipper Aerospace LLC

Darins RV Adventures:

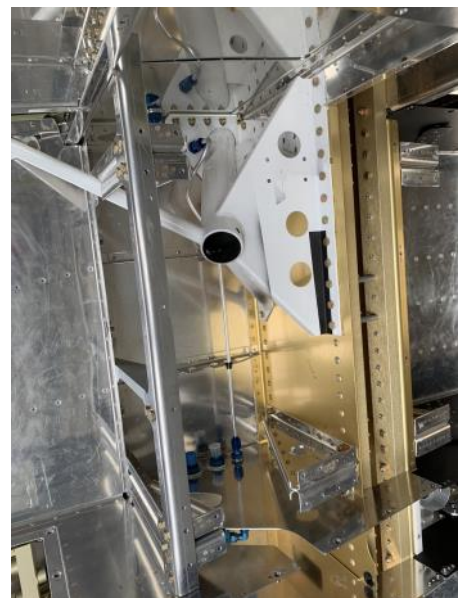
Section 35 and 36 complete

I am done with section 35 (Access Covers and floor Panels) and section 36 (brake lines). I started section 37 which is the fuel system but quickly ran into a lack of parts. Since I plan on using electronic fuel injection I need to have a return line. A return line means more and non standard fuel supply lines and the fittings I purchased a few months ago are not enough. So, I have an order in to Summit Racing as well as Aircraft Spruce for several more parts.

Its getting toward that part of the build where you don't just follow the instructions quite as much. I have a back-order with Van's that is supposed to ship at the end of this month. That order includes a few parts I need to finish up section 34



as well as start on the firewall (finishing kit). In the mean time there are a number of things to do including section 38 (rudder pedals and brake system), section 39 (control systems) and section 40 (flaps). I suspect those three sections will keep me busy for the better part of a month or two. Once those are done its time to start buttoning



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 ENGINE

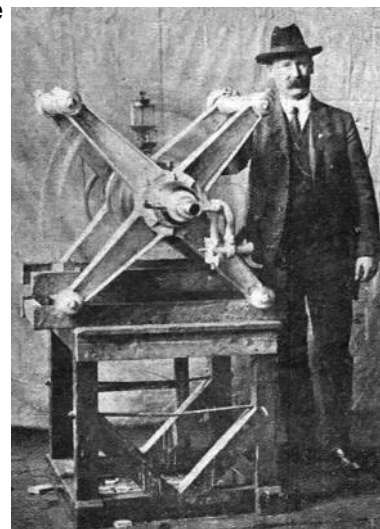
This months entry:

Go to Page 10 for the March airplane



This months entry:

Go to Page 11 for the March Engine



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DARINS RV ADVENTURES CONTINUED:

the fuselage up but as I said the plans get pretty vague at this point and I have lots of modifications planned so it's going to take longer than I would want. :-)

To Read More, [Click Here](#)

EAA News:

EAA Virtual Flight Academy:

Need to knock some rust off your flying skills without burning av gas? Your new virtual flight instructor in EAA Virtual Flight Academy will help you refresh your knowledge of FAA requirements while you practice maneuvers on the ground before you take your next flight in a plane.

The EAA Virtual Flight Academy will offer a complete set of flight lessons to take you through all of the FAA's Airman Certification Standards for Private Pilot1.

Get Stage One FREE2!

To Read More, [Click Here](#)

Extensive Enhancements Made to Homebuilts Area Ahead of AirVenture 2019

The introduction of a new, more centrally located exhibitor area, a new Homebuilts in Review area, and additional homebuilt parking highlight some of the significant enhancements made to the Homebuilts area ahead of EAA AirVenture Oshkosh 2019.

Formerly known as the North Aircraft Display, the renamed Homebuilt Aircraft Display is now located directly east of the forums buildings, in the space that used to be occupied by the Federal Pavilion. This space will be home to kit manufacturers and related companies exhibiting some of the best and newest in homebuilding offerings.

To Read More, [Click Here](#)

Be Your Own Mechanic — The Secondhand Homebuilt Aircraft Owner's Guide to Maintenance

By Lisa Turner, EAA 509911

This story first ran in the August 2018 issue of EAA Sport Aviation.

Scott slid into the cockpit of the two-place Kolb Mark III after getting a nod from the owner. He looked at the custom avionics panel above him – breaker switches neatly aligned within easy reach were joined by master and ignition switches, ammeter, fuel quantity, oil pressure, and Hobbs meter. The center console contained the latest Garmin electronics.

“Exactly what I’m looking for,” he said to the Kolb owner. “But if I buy this, will I be able to take care of it?”

“Anyone can maintain an experimental,” the owner said.

“Well, sure, if they know what they are doing,” Scott said.

Secondhand homebuilts can be a great way to go if you don't have the inclination to build one. But, if you didn't build the plane, will you know how to take care of it? Each homebuilt is unique and much less standardized than certified aircraft that are built on assembly lines. This isn't a bad thing, but it does add more work to developing inspection checklists and understanding the quirks that specific aircraft may display.

To Read More, [Click Here](#)

Flying Wing Coming to Oshkosh

German startup Horten Aircraft, named in honor of the World War II-era design firm, announced that it plans to bring the prototype of their new two-seat HX-2 to EAA AirVenture Oshkosh 2019

VICTOR HUGO

After three years of development, we are very proud to present our prototype flying wing, which is already undergoing flight testing – the Horten HX-2.

This aircraft is a highly modern economical two-seat tailless light aircraft without a fuselage. It will be dis-



AAA NEWS, CONTINUED, EDITORS CORNER

played in public for the first time at the air show in Friedrichshafen.

Due to its low aerodynamic resistance, the flying wing flies farther and faster than a comparable aircraft with a fuselage. The design of the airframe makes it easily adaptable for installing new propulsion technologies we anticipate will become available in the future.

We are planning further developments, such as unmanned or multi-seat versions of the current prototype. The HX-2 was built at our headquarters at Kindel Airfield (EDGE) near Eisenach.

To Read More, [Click Here](#)

XTI Aircraft Makes First Tethered Flight

A 65-percent-scale prototype of the TriFan 600 hybrid-electric VTOL aircraft hovered for the first time earlier this month.

Hover tests mark major milestone for company
DENVER, CO, May 8, 2019 — XTI Aircraft Company (XTI) announced today it successfully completed the first test flights of its 65% scale prototype of the TriFan 600 VTOL aircraft as the company continues its progress on its long-range commercial vertical takeoff airplane.

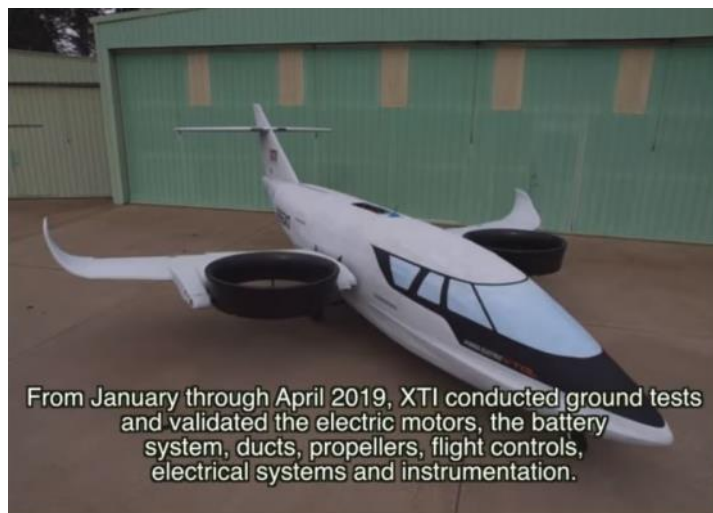
The TriFan 600 prototype completed multiple take-offs, hover, and landings, which tested and validated the electric motors, battery power system, ducted fan propulsion, flight controls, other electrical systems and instrumentation. The aircraft was on a short tether during the tests due to its location at an airport in northern California where it was constructed. Future flights at a certified UAV test facility will be untethered in hover and will also test forward, wing-borne flight, as well as the transition phase between vertical and forward-flight modes.

“This is the moment the entire XTI team, our investors, customers, and many others have been waiting for and working toward. In one year, we have progressed from conceptual design to a flying prototype,” said XTI Chief Executive Officer Robert LaBelle. “The aircraft proved to be stable in hover and had no problems throughout several runs.”

To Read More, [Click Here](#)

Electric Aircraft Charging Stations Installed at LA County Airport

Pilots flying Pipistrel Alpha Electros will be able to charge their aircraft in about 45 minutes thanks to



the new facilities at the Compton/Woodley Airport (KCPM) in Compton, California.

The new Pipistrel SkyCharge stations will be able to charge a Pipistrel ALPHA Electro Light Sport from empty to full battery in about 45 minutes. These charging stations are built by Pipistrel specifically for the Pipistrel Alpha Electro Light Sport, which is two seater all-electric aircraft built specifically for flight training. Although the ALPHA Electro is currently only certified for rural areas, full certification for urban flight in Los Angeles is anticipated soon.

To Read More, [Click Here](#)

Editors Corner:

Tom and I have been discussing the next steps on the Luscombe. We both are finding time constraints that is limiting the amount of work that can be accomplished on it. We are looking for one or two additional partners for the Luscombe.

Is there anyone who is interested in participating in re-building the Luscombe in our Chapter. If so, please contact Tom or myself.

I have found to my chagrin, that I have mislaid the notes for the last months meeting.

NORMAN GRIER FIELD FLY-IN AND BBQ FLYER:



Dear FAHA Members:

Summer is soon upon us and fly-in activity is picking up, including at Norman Grier Field! Normandy Aircraft located here on the airport is sponsoring their second annual fly-in and potluck BBQ on Saturday, June 8, 2019. Normandy Aircraft owner, Logan Shepard, is expecting an even larger turnout than last year and would love to see more Flying Acres homeowners join in the fun. Here is a short description from the Normandy Aircraft Facebook events page about the event:

The 2019 Norman Grier Field Fly-In BBQ, organized and sponsored by S36's own Normandy Aircraft & Dirty Bird Squadron!

This is a great even to meet other local aviators and enthusiasts while enjoying great company. You never know what traffic may arrive as last year had an amazing turn out of warbirds, antiques and modern civil aircraft. Also on display will be many amazing aircraft based out of S36 as well as other aircraft flown by the freelance airplane club, Dirty Bird Squadron.

In honor of the late Norman Grier, we ask folks bring something to share while we man the grills for your delicious consumption! As we did last year, we will have a donation jar that we plan on presenting to the airport for upgrades/repairs so we can continue to enjoy the happiest hidden place on earth.

As always, this is also *our* 2nd Annual thank you to our community for all the friendship and support we have received from you from day one.

Mark your calendars. This is a great opportunity to meet your neighbors and other aviation enthusiasts so bring your appetites and your airplanes!

Best regards, Jeff Miller

P.S. You can find more information about Normandy Aircraft , [Click Here](#)

EAA Chapter 441 will be providing homemade ice cream. Volunteers are needed.

EDITORS CORNER, CONTINUED HISTORY TID-BITS:

WINGS & WHEELS
2019

**FLY AND DRIVE IN DAY
SATURDAY AUGUST 17TH
7:00AM TO 2:00PM**

STAGING STARTS AT 7:00AM
AT THE RICHLAND AIRPORT (KRLD)
1903 TERMINAL DR., RICHLAND WA.

EAA BREAKFAST 7:00 - 9:30AM - ALL ARE WELCOME
WAR BIRDS & EXPERIMENTAL & ANTIQUE AIRPLANES
HOTRODS & CLASSICS CARS
MOTORCYCLES & MILITARY VEHICLES
FOOD VENDORS & NO ENTRY FEE
FREE TO THE PUBLIC

PORT OF  BENTON

For More Information Contact: Scott Urban 509.551.0432 or John Haakenson 509.375.3060

WINGS OVER WILLAMETTE FLYIN AND STOL EXPO:

Wings Over the Willamette

Fly-in & STOL Expo
Aug 16-18 *Van's Homecoming*

2019



CUBCRAFTERS  **LIGHTSPEED**  **VAN'S AIRCRAFT**
TOTAL PERFORMANCE

Independence, OR 7S5
EAA 292 for info go to: eaa292.org/fly-in

©rockerr

GUESS THAT AIRPLANE:**Fairey Fulmar MkII**

The Fairey Fulmar was a British carrier-borne fighter aircraft that served with the Fleet Air Arm (FAA) during the Second World War. Fairey Aviation built 600 Fulmars at its Stockport factory between January 1940 and December 1942. The design was based on that of the earlier Fairey P.4/34 that was developed in 1936 as a replacement for the Fairey Battle light bomber. Although its performance (like that of its Battle antecedent) was unspectacular, the Fulmar was a reliable, sturdy aircraft with long range and an effective armament of eight machine guns. It was named after the northern fulmar, a seabird native to the British Isles.

Design and development

The Fairey P.4/34 was built to Specification P.4/34 as a light bomber capable of being used as a dive bomber, in competition with the Hawker Henley and an unbuilt Gloster design. Despite its high speed of 284 mph, the 300 mph Henley won the competition and was eventually ordered as a target tug

The Fulmar was a version of the P.4/34 adapted for naval use and submitted to meet Specification O.8/38 for a two-crew, observation (reconnaissance) fleet defence fighter. As it was not expected to encounter fighter opposition (Germany, Britain's only potential enemy, possessed no aircraft carriers), manoeuvrability was not considered as important as long range and heavy armament. A navigator/wireless operator was considered essential for the long, ocean flights that would be required.

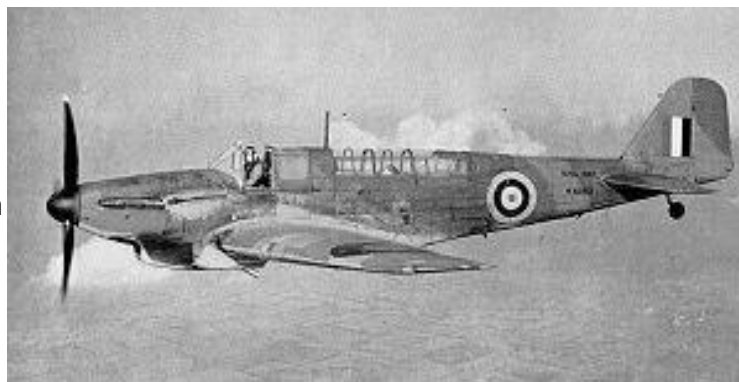
N1854, the first production Fulmar at Farnborough at the SBAC show on 8 September 1962

To Read More:

Wikipedia, [Click Here](#)
 Armored Carriers.com, [Click Here](#)
 Pacific Eagles, [Click Here](#)
 WW2 Headquarters, [Click Here](#)

Specifications (Mk II)**General characteristics**

Crew: Two
 Length: 40 ft 2 in (12.25 m)
 Wingspan: 46 ft 4¼ in (14.13 m)
 Height: 14 ft 0 in (4.27 m)
 Wing area: 342 ft² (32 m²)



Empty weight: 7,015 lb (3,182 kg)
 Loaded weight: 9,672 lb (4,387 kg)
 Max. takeoff weight: 10,200 lb (4,627 kg)
 Powerplant: 1 × Rolls-Royce Merlin 30 liquid-cooled inline V-12, 1,300 hp (970 kW)

Performance

Maximum speed: 272 mph at 7,250 ft (438 km/h at 2,200 m)
 Range: 780 mi (1,255 km)
 Service ceiling: 27,200 ft (8,300 m)
 Wing loading: 28 lb/ft² (137 kg/m²)

Armament

8 × 0.303 in (7.7 mm) or 4 × 0.50 in (12.7 mm) Brown-ing machine guns wing-mounted,[7][18] and occasionally 1 × .303 in (7.7 mm) Vickers K machine gun in rear cabin
 2 × 100 lb (45 kg) or 250 lb (110 kg) bombs



GUESS THAT ENGINE:**Walter HWK 109-509**

The Walter HWK 109-509 was a German liquid-fuel bipropellant rocket engine that powered the Messerschmitt Me 163 Komet and Bachem Ba 349 aircraft. It was produced by Hellmuth Walter Kommanditgesellschaft (HWK) commencing in 1943, with license production by the Heinkel firm's facilities in Jenbach, Austria.

Design and development

An early Walter HWK 109-509A-1 rocket motor, believed to be one of the best preserved in existence and possibly used for instructional purposes. The cockpit of the Me 163 Komet is a mockup. (Shuttleworth Collection, UK)

Early versions of the Me 163 had been powered by an earlier design running on a "cold engine" fueled with Z-Stoff. This fuel tended to clog the jets in the combustion chamber, causing fluctuations in power and potentially explosions. Worse, however, was the fact that the engine could not be throttled, and when the aircraft leveled off after its climb to altitude it quickly accelerated to speeds that caused serious compressibility issues. The RLM demanded that a version be developed with a throttle.

HWK 109-509 A-1 Rocket Engine at Steven F. Udvar-Hazy Center Virginia, USA.

During this period Walter has also been working with a new fuel known as C-Stoff that gave off significant heat and was thus known as the "hot engine". C-Stoff was a mix of 30% hydrazine hydrate + 57% methanol + 13% water with a small amount of potassium-copper-cyanide. The oxidizer, known as T-Stoff, consisted of an 80%-concentration hydrogen peroxide-based formulation. The two reacted violently on contact. The violent combustion process resulted in the formation of water, carbon dioxide and nitrogen, and a huge amount of heat sending out a superheated stream of steam, nitrogen and air that was drawn in through the hole in the mantle of the engine, thus providing a forward thrust of approximately 17 kN (3,820 lbf).

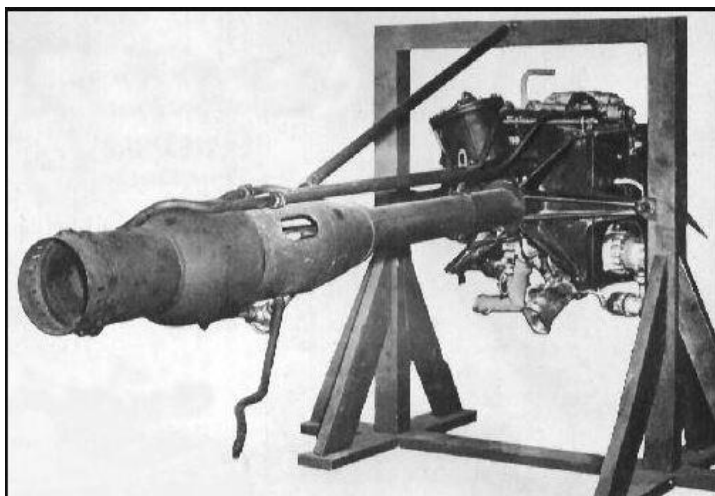
To Read More,:

Wikipedia.org, [Click Here](#)

Smithsonian: Air And Space, [Click Here](#)

Walterwerke: [Click Here](#)

Revolv, [Click Here](#)

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

Type: Liquid-fuelled rocket engine

Length:

Diameter:

Dry weight: 165.5 kg (365 lb)

Fuel: T-Stoff (Hydrogen peroxide) oxidizer and C-Stoff (hydrazine hydrate/alcohol mix) fuel propellants

Components

Pumps:

Performance

Thrust: 14.7 kN (3,300 lbf)

Burn time:

Thrust specific fuel consumption: 20 lb/hr/lbf (1800 N-s/kg)

