

Skywords

The Newsletter of :
Burlington Radio Control Modelers Club
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The Fokker D-VIII WWI Fighter

Jim Reilly

Somehow, WWI fighters have always captured my affections. Maybe it's because one of the first models I ever built as a kid was a Fokker D-VII, or maybe they are just so ugly they have to be cute.

But even if you do consider them cute, they are very curmudgeonly flyers. Because the engines were so heavy, the aircraft required a large wing area. But because a large enough mono-wing was structurally unsound with the materials available at the time, the biplane construction was the only practical configuration that was sturdy enough to fly. These aircraft were very slow flyers, partly because the wings had to be thick to generate the required lift, but also because the assortment of guy wires, struts and undercarriage produced a lot of drag. All this made them susceptible to tail spins

NEXT MEETING

ANNUAL GENERAL MEETING

JANUARY 27TH 2011

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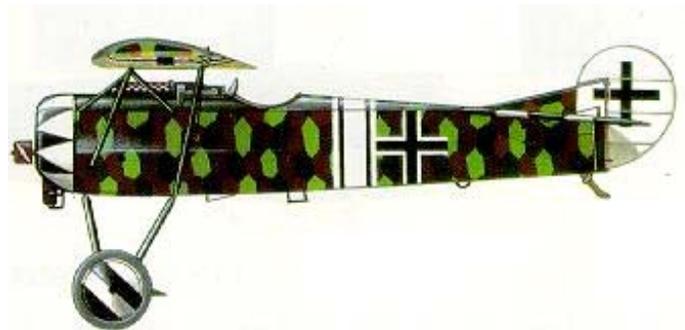
**To Elect the new board and set the budget for 2011.
It's your club,
better be there**

P.S. Airplanes are always welcome

The 2011 Frost Fly
Thanks to Dale Eldridge who came through as the organizer



Left to Right at the Frost Fly 2011, Paul Gentile, Ivan Wis-mayer, Ted Pritlove, Dennis Smart, Gary Arthur, Bill Swindells and Lawrence Cragg. About 30 members showed up, not much flying due to rain but a lot of comradely chat. There is another picture on page 6.



on a slow turn. They also had a lot of problems on the ground. For some reason unbeknownst to me, they are highly prone to ground loops on take-offs and cartwheels on landings. It is said more pilots were killed on the ground during WWI than in the air. Given the state of the typical aircraft in those days, it is amazing that aviation

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An Unexpected Experience.

December 2010

It was a very windy day at Bronte field, but I decided I could handle it with my 60 Twist. The take off was hairy, the wind trying its best to challenge my reflexes but I won that contest. The subsequent flying was fun with the down wind ground speed being quite spectacular while flying up wind challenged the OS 60 to work its way into it. All in all, not a bad flight. Now for the landing. That shouldn't be hard given an apparently steady wind which would lower the landing (ground) speed to near zero. And so it proved to be - until a gust caught it and cartwheeled the model accompanied by nasty sounds of breaking balsa. The wing wasn't too badly damaged but the fuselage was a write off. Not to worry, one can buy a replacement fuselage and it should be easy to fit the existing pieces into the new fuse without difficulty. *Wrong!*

Nothing fitted. To start with, the tail assembly bolts on to the fuselage with three long bolts - but these do not line up with the holes in the fuselage. So drill new holes and fix that problem. Now let's bolt on the landing gear. Nope, the fuselage has a four hole pattern and my landing gear has three - as shown in the manual - so I have to fix that. Next, install the engine. Nope, the engine mount does not line up with the blind nuts in the firewall. Find another mount and fix it that way. Next it would be logical to install the fuel tank but that doesn't fit either; the exit hole is in a totally wrong position and I have to fabricate a new mounting for the tank.

Now for some servos; that ought to be easy. Nope, there is no way the throttle servo can be linked to the throttle without an intervening offset crank. So I make up a suitable crank to solve that problem. Now for the tail servos. Well there *are* holes for them but the servos are positioned such that the original links no longer work. What's more, the links have to be fashioned with nasty kinks in them in order to get a reasonable mechanical configuration. Nah! That's ugly and it really won't do. However, if I move the rudder horn to the other side and the elevator horn to the starboard half then I can get

straight control rods to work. This, of course, is opposite to the way they were and contrary to the configuration shown in the manual.

By this time I'm wondering just where that replacement fuselage came from. It looks like a genuine Hangar-9 component but, to say the least, it's different from the original and from the on-line manual. So where the heck did it come from?

Down to the nitty-gritty now; install the radio switch. I carefully cut a hole in the fuselage and install the switch complete with harness. Dammit! The wire is too short to reach the receiver and I really don't want to use a 2" extension. To make matters worse, I then see that there is a nice laser cut hole for the switch in a much better position; I simply hadn't seen it. Oh well, move the damn switch and cover the hole.

Now what else is this simple repair going to throw at me? Well, I haven't tried to fit the wing yet.....

Lawrence Cragg

From Carl Finch

My electric Twist (Twistee?) is complete.

Weighs in at 2,145 grams (75.8 Oz) with a 4900 mAh 4S LiPO. The Turnigy SK4250-650 motor produces over 800 Watts with a 13 x 10 APC



prop, so it won't be underpowered!

Thanks Carl. So an electric Twist is a "Twistee" and presumably the pilot is a "Twister".

This from Carl Finch

Although now better known for their ejection seats, Martin Baker produced a short series of innovative fighter prototypes in World War II, the culmination of which was the MB 5. Its immediate predecessor the MB 3, designed in response to specification F.11/39, was armed with six cannon and was powered by an early Napier Sabre. One of its design features was ease of maintenance, with external metal panels removable from the tubular



structure for replacement or access to systems. Unfortunately R2492, the sole example of the MB 3, had an in-flight engine failure only two weeks after its first flight and crashed on 12 September 1942, killing pilot Capt. Valentine Baker. The MB 5 was similar, and based on the same specification, but powered by a Rolls-Royce Griffon; the armament was reduced to four 20 mm. cannon, and a large “teardrop” canopy gave excellent all-round visibility. It first flew from Harwell on 23 May 1944, and was subsequently passed to Boscombe Down for evaluation; it received excellent reports on both its design and its performance, being flown by test pilots Eric 'Winkle' Brown and

Tom Neil. Unfortunately the Martin Baker MB 5 came too late to replace earlier piston-engine fighters in production, and its appearance coincided with the introduction to service of the first jets. Consideration was given after the war to an attempt on the world speed record, and trials from the Rotol airfield at Staverton recorded a speed of 484 mph. As with its potential service this plan was overtaken by the jet, with the RAF setting up an attempt with the Meteors of its High Speed Flight that achieved a speed of 606 mph.

11/4/2010 - EDWARDS AIR FORCE BASE, Calif. (AFNS) – Engineers with the 418th Flight Test Squadron are currently testing a C-130H3 cargo plane equipped with Hamilton Sundstrand NP 2000 propellers.

The new eight-bladed composite propellers are shaped to provide additional thrust in the takeoff and low airspeed range while using the current C-130 engines.

Regular C-130 “legacy” planes use four-blade propellers. With eight blades, the NP 2000 props are designed to perform with more power and efficiency.



“A major limitation propellers have is the wave drag generated by shockwaves when the propeller tips go supersonic,” said Dustin Marschik, a 418th FTS performance and flying qualities engineer. “Newer propeller designs aim to reduce this wave drag, which improves efficiency and performance. Instead of four similar airfoil blades pounding around up there, you have these eight highly tuned blades that make it smoother with less vibration,” Major Cain said. “From a maintainability standpoint, you can change one blade at a time. On the legacy four-blade C-130, you have to change out the whole prop.”

This flight testing is a continuation of a process to improve the capability of the Air Force’s workhorse C-130 fleet. The C-130J “Super” Hercules already employs a six-bladed composite propeller.

persisted long enough to “get off the ground” as it were, and survive into the modern era.

My latest project is a 1/4-scale Balsa USA Fokker D-VIII. They were a rather amazing aircraft for the time, being one of the first successful monoplanes



ever to emerge. So, I have become rather intrigued with these planes and thought it would be interesting to do a little investigation on this formidable icon of the WWI era.

A messy workbench with the beginnings of an outer wing panel from a Balsa USA 1/4-scale Fokker D-VIII kit.

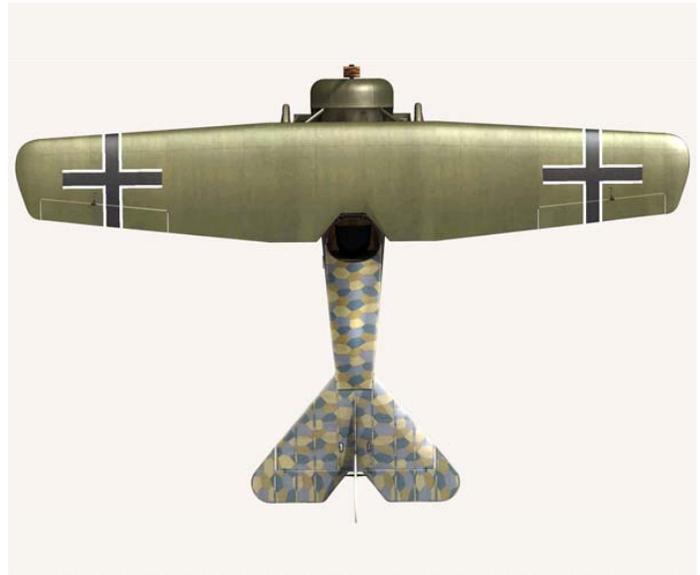
The Fokker D-VIII was originally called the E-V (“E” for eindecker, or monoplane). It used the standard Oberursel UR.II 9-cylinder rotary engine, producing only 82 kW (110 hp). While this engine was obsolete, the E-Vs low drag and light weight due to its monoplane construction meant that it was nevertheless quite fast.

The first production E.V aircraft were shipped to the front in late July of 1918. Lieutenant Emil Rolff scored the first kill in an E.V on August 17, but two days later he himself was killed when his aircraft's wing collapsed in flight. After another E.V crashed, the air force grounded all E.V aircraft and all construction of the aircraft was halted.

According to most accounts, the source of the wing failures lay not in the design, but in shoddy and rushed construction. Apparently there had been an order from the air force to strengthen the wing spars from their original design, but due to poor quality control at a piano factory subcontracted to

manufacture the wings, the modified spars did not fit properly through the ribs, and were subsequently planed down to remedy the problem. However, the modification severely weakened the spars, leading to the wing failures. Other problems with the aircraft included water damage to glued parts, and pins that splintered the spars, rather than securing them.

Tests showed that when properly constructed, the original design of the E.V wing had a considerable margin of safety. Satisfied that the basic design was safe, the air force authorized continued production after person <http://www.youtube.com/watch?v=nTOBiBEJXwMnel> changes and improved quality control measures at the factory. Deliveries resumed in October of 1918. The modified



aircraft was re-designated as the D.VIII. The first new examples of the D.VIII started arriving at frontline units late that month and started operations on October 24, 1918.

A total of 289 aircraft were produced. Some reached Holland, Italy, Japan, the United States, and England as trophies, but most were scrapped in accordance with the terms of the Armistice.

Even with the low-powered UR.II engine, the D-VIII was faster than its biplane counterparts. It was considered easy to fly and sensitive to the controls. The allied pilots referred to the D-VIII as the “razor”, since its mono-wing construction rendered a very small cross-section when viewed straight-on, making it difficult to see as it was approaching.

Perhaps it was a blessing to the allied forces that this aircraft entered the theatre of operations too late to have made an impact on air superiority during the war. But in the end, perhaps its impact on the evolution of aviation was far more profound- it demonstrated the monoplane concept was indeed feasible, and as such heralded a new era of aircraft design. A testament to this effect was that the early spitfire prototypes followed less than 20 years later.

For further fun, checkout a You-Tube video of a full-sized D-VIII at

<http://www.youtube.com/watch?v=nTOBiBEJXwM>



Building one the old way

It's been a few years since I built from a kit as ARF's took over my shop, but this winter I decided to build a Balsa USA Smoothie, mainly because I



like the one Harry Bernard has so much. It started out as a 46 powered float plane version like Harry's but has somehow transformed into a E version with a 4260-500 900 W motor and a 6s battery. On the left is the unusual sight of balsa shavings in



my waste bin. There is a lot of wood in this kit and most of it gets itself into shavings it seems. I built the "power module" in one and this slides vertically into the fuselage. I had yet to figure out what stops it sliding vertically out however.

See the "Master Razor Plane" which is my new best friend.

I'm looking forward to flying this, my first non-Arf electric in the Spring. I have floats for it as well as the usual U/C, but electricity and water don't mix too well I'm told so I'll fly it first in the dry. (My last float plane spent so much time under water I re-named it Nautilus).

Now if someone can tell me how to keep balsa dust out of the living room my wife says I can go to the sanding stage. Tom Gwinnett

Happy New Year to all.

Here we are in 2011 already, what happened to 2010?

The big thing for the club was the three successful events held at Bayview, in spite of the weather which tried very hard to spoil them all. The highlite of the year for me was Warbirds over The Bay, go figure. We managed to attract 29 pilots and around 600 spectators and almost broke even on expenses, for a first year that's not bad at all. The coming year event should see us go for gold, with sponsors such as MAAC, Great Planes, Balsa USA, Model Airplane News and of course our friends at Skycraft plus many more we should have a bumper event.

The rest of the year saw Bayview field take on a life of its own, with improvements and events, plus numerous days when the weather actually cooperated the field saw a lot of use, many thanks must go to our Field Manager Nick Moskal for his sterling work on the field, even when he had surgery he kept Dave and myself on our toes cutting grass. With Bronte field hosting Canada Day as usual we have been fortunate to have the few volunteers who put on these events, and of course the Frost Fly which was run by Dale at very short notice, so the new year got off on the right foot.

For 2011 lets all put our best foot forward and volunteer some of our free time to keep both of our fields in great shape and running smoothly and also give some time to the events and make them a credit to BRCM.

I wish you all a very happy and prosperous new year and try not to crash too much.

Paul Chitty
President BRCM

Two "full size" one liners

Q: What is the ideal cockpit crew?

A: A pilot and a dog...the pilot is there to feed the dog, and the dog is there to bite the pilot in case he tries to touch anything.

Q: What's the purpose of the propeller?

A: To keep the pilot cool. If you don't think so, just stop it and watch him sweat!

EVENTS 2011

<u>DATE</u>	<u>HOST CLUB/LOCATION</u>
January 15	KW Swap Meet K/W Flying Club
JANUARY 27	AGM - ELECTIONS BRCM
February 12	Forest Snow Fly Forest Lakeside Flyers
February 13	Oakville Swap Meet Oakville
February 20	Orillia Swap Meet Orillia
FEBRUARY 24	GENERAL MEETING BRCM
February 27	Whitby Swap Meet Whitby
February 27	Tillsonburg Swap Meet Tillsonburg
MARCH 24	GENERAL MEETING BRCM
March 27	Aurora Swap Meet Aurora Flying Club
April 1, 2 & 3	Toledo Weaksignals Expo Toledo
April 27 - May 1	Top Gun Lakeland, Florida
APRIL 28	GENERAL MEETING BRCM
May 7 - 14	Joe Nall Woodruff, South Carolina
MAY 26	GENERAL MEETING BRCM
May 28	Forest Fun Fly Forest Lakeside Flyers
JUNE 18	FATHERS' DAY SCALE RALLY BRCM
June 19	Oakville Air Show Oakville Model Club
JULY 1	CANADA DAY FUN FLY BRCM BRONTE
July 9	Forest Scale Rally Forest Lakeside Flyers
July 9 & 10	Chatham Scale Rally Chatham
July 16 & 17	Olean Scale Rally Olean N.Y.
JULY 23 & 24	WARBIRDS OVER THE BAY BRCM
August 6	Glider Tow Oakville, South Field
August 6 & 7	Hamburg Scale Rally Hamburg, N.Y.
August 13 & 14	SOMA Stoney Creek Airport
AUGUST 27	CORN ROAST BRCM
September 10 & 11	KW Scale Rally KW Flying Dutchmen
SEPTEMBER 22	GENERAL MEETING BRCM
OCTOBER 27	GENERAL MEETING BRCM
October ??	AZM MAAC Middle Zone Meeting
NOVEMBER 24	GENERAL MEETING BRCM
DECEMBER TBA	GENERAL MEETING BRCM

Thanks to Bill Swindells for this list. If you know of anything else or corrections please let me know.



Sheltering from the rain at the Frost Fly