



The Flightline



Volume 38, Issue 4

Newsletter of the Propstoppers RC Club

AMA 1042

April 2008

Minutes of the Monthly Meeting

March 11th, 2008 at the Middletown library

President's Message

I can't believe this weather I don't think anyone could be flying but the weather has to change don't you think. *(But we had fun without you Dick; you must give up work and join us. See the following article; Dave)*

All fields are go so far and I'm going to a meeting at Williamson trade school Friday the 4th This is to look for a better spot, but it could be the same old spot, but it is a spot.

We could use some show and tells at the meeting. Try and think of some activities for this summer. See you at the meeting

Dick Seiwell

*Agenda for April 8th Meeting
At The Middletown Library;
Doors open 7pm, Meeting 7:30pm.*

1. Approval of March Meeting Minutes
2. Membership Report
3. Finance Report
4. Discussion of 2008 event plans
5. Plans for Middletown Community Pride Day
6. Show and Tell

The meeting was called to order at 7:30 p.m. by Vice President Dave Bevan

Roll-call by membership chair Ray Wopatek found 17 members present Minutes from the January meeting were approved as printed in the newsletter

The treasurer's report was presented by Phil Oetinger

Old Business:

President Dick Seiwell noted that both fields were still very wet. He recommended that we not drive in the soft areas when we visit the fields. He thought it would be several weeks until they dry out sufficiently.

New Business:

Middletown Pride Day this year will be on Saturday May 10th. We have agreed to participate as a club and will demonstrate models and flying as we have in past years.

The club discussed possible flying projects for the year. Mike Black suggested a foam kit that was being sold at sellout prices by BP hobbies. He thought this would be a good starting point for many members.

Show and Tell:

Phil Oetinger set up and showed his Real Flight G3 simulator program. He projected it on to our large screen at the meeting room. The system could be programmed for models from propeller types to jets and even helicopters. The simulations were extremely realistic.

Dave Harding showed the laser cut wing ribs he had made for his Boehle's Giant. He also showed the Forster 99 ignition engine that he plans to use with it.



Brian Williams showed an 8 ft. span glider, glow powered, that he bought at the Lebanon Fair. He seemed anxious to see it in the air.

Eric Hofberg showed his air hog with LiPo power and single motor with actuator controls. He said is available for less than \$20.

Mike Black showed the closeout Japanese Zero foam electric kit got from B.P. hobbies at the sale price of \$20. It was remarkably well equipped for a kit of that price.

Dick Bartkowski, Secretary

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Calendar of Events

Club Meetings

Monthly Meeting Tuesday 8th April 2008 at the Middletown Library Doors open at 7:00 pm Meeting at 7:30

Tuesday Breakfast Meeting
The Country Deli, Rt. 352 Glenn Mills
9 till 10 am. Just show up.

Regular Club Flying

At Middletown / Sleighton Field

Monday - Friday;

10 am until dusk - Electric Only
Saturday

10 - 3pm-for FUEL PLANES and
10 - Dusk for Electric

Sunday - 12 - Dusk - Electric Only

At Christian Academy; Electric Only

Monday through Friday after school till dusk

Saturday 10 am till dusk

Sunday, after Church; 12 pm till dusk

Special Club Flying

Saturday mornings 10 am Sleighton Field

Tuesday mornings 10 am Sleighton Field
weather permitting after breakfast.

Beginners using due caution and respecting club rules may fly GWS Slow Stick without instructors.

Club Flying Begins

Good weather and Spring Break gave the impetus for the commencement of regular club flying at Sleighton Field in late March.



Mike Black and Jim Barrows continue Jim's training on his electric powered Trenton Terror, last year's club model. Jim is using the A123 battery cells and has made five four-cell packs from DeWalt tool batteries. AXI outrunner powered the model has adequate performance but was originally a bit of a handful. So a consultation took place and wise old owl input solicited. A little shim under the back of the wing helped a lot.

So the flying improved but the ground handling was difficult. As with many tail draggers there is a tendency to ground loop. This phenomenon is all to do with the longitudinal location of the landing gear. We tend to put it far forward so as to prevent nose-over on landing, particularly on grass where the drag can be high. When the gear is far forward of the CG a yaw upset and deceleration produces a divergent yaw motion, and if you don't catch it with fast rudder, the plane ground loops. Same happens on takeoff sometimes.

Propstoppers RC Club of Delaware County, Pennsylvania. Club Officers

President Dick Seiwel
(610) 566-2698 reslawns@verizon.net

Vice President Dave Bevan
(610)-566-9152 oldave@icdc.com

Secretary Richard Bartkowski
(610) 566-3950 rbartkowsk@comcast.net

Treasurer Phil Oettinger
610-627-9564 flvinaphil202@hotmail.co

Membership Chairman Ray Wopatek
(610) 626-0732 raywop@juno.com

Safety Officer Jess Davis
(610) 494-5070

Newsletter Editor and webmaster
Dave Harding
(610)-872-1457 daveiean1@comcast.net

Propstoppers Web Site; www.propstoppers.org
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Here Jim is setting up the Trenton Terror for another takeoff.



Yikes, it takes courage to be a Propstopper reporter.



This one went to the right but did result in a successful takeoff. It has turned out to be the satisfactory trainer that Jim expected when he elected to make it last year. This is his first stick-built airplane and he did a wonderful job with excellent craftsmanship. Of course, being Jim he had to add flashing navigation lights and end-of-battery warning horn, a loud one. No simple voltage threshold device this, but a full-on energy measuring device integrating current and voltage to compute the amount of charge expended. Jim, we will have to test your horn against the long standing Propstoppers field noise limit. Rusty, do you still have the noise meter?

With the invitation to fly on a decent day with my buddies I elected to resurrect an old and rather daunting Hot Liner; A Jerry from Hobby Lobby. I slipped in an old Aveox geared brushless motor and the only battery that would bring the CG far enough forward but take the current load; a seven cell AA NiMH pack from Cheap Battery Packs. I kept the current below 15 amps, well, actually I just picked a prop and that is what it pulled. Good enough, although this model can take three times this power or more, which is a great deal more than this pilot can handle.

Well, there is more to preparing a model than putting in a motor, ESC and battery. Yes, the Rx was easy but this plane has two aileron servos; it is an aileron and elevator controlled model. Now the fun starts, how to make the ailerons work! I had not triumphed over this particular hurdle before leaving home so I also took Don Edberg's book on programming the Futaba. And I expected some local knowledge from the gas fliers I thought might be in attendance.

Sure enough, Al Tamburro and Mike Black gave some advice and Don Edberg did the rest so we achieved a satisfactory lash up and things moved in the right direction.

However it was prudent to have Al fly the thing until it was proven to be tamed, and it was, as Al quickly set the trims and declared it a good flyer. I took it at altitude and proceeded to soar under the clouds for some time. This sucker is a great glider and just wouldn't come down. But come down it must and that is where the trouble begins for me. You don't just bring it in as it never loses altitude or speed, or so it seems. My best pass was ragged and Al suggested a go around, which I did. But although the next pass was at the right altitude I was sawing away on the sticks and tip stalled it in.....again.



Hobby Lobby Jerry Hot Liner

Nevertheless, it was a fine start to another good season and as you can see here the model is almost ready to fly again.

Dave Harding

Pulse Jets

Once again we have been invited to participate in the Middletown Township Community Pride Day at the Williamson Trade School. And, as in the past we are encouraged to make as much noise as we want. This is actually a good thing for our efforts too as we are placed on the sports field which hidden from the main activities beyond the brow of a hill. So, if we occasionally make a lot of noise during the day perhaps we will attract more attention to our flying and displays.

In the past we have sought to entice some engine guys out to run what they brought, but to no avail. My efforts to

run some diesel engines last year came to an embarrassing nothing. I will blame it on very old fuel because ether is highly volatile and the fuel is five years old. (You would think being stored in a metal can should hold in the good stuff... But that is another story). Anyway, once again Ed Goretzka informs me that his buddy from Reading will be in attendance and he will run some interesting old ignition engines; we will see.

Meanwhile, kicking these thoughts about with Mick Harris I just happened to say that the most noise we could make would be with a Dynajet pulse jet. Blow me down; Mick says "I have a Dynajet"! Wow, the ultimate noise maker, in hand yet! And here it is;

But hold your horses, Mick isn't sure what he has and if it is complete, then you need some support equipment; different from any other kind of engine. And finally, you need to know what you are doing!

First things first, Mick says he was given the engine and doesn't know if it complete. Particularly, if it has the valves inside. Well, we surely need those but the nose cone was reluctant to yield to unscrewing, but wait. Let's see if they work. So I blew down the exhaust and darned if it didn't close the valves; they are there. This is what they would look like if we were able to remove the front end;

Next to unscrew the jet assembly and it came right off. Not much to that so I declare it is complete and the valves seem to seat. That is about all there is to a pulse jet, so we maybe in business.



This is a picture of a valve assembly from a Dynajet together with the fuel feed tube. The picture on the right is of the air/fuel assembly from Mick's engine. It is complete and ok.



But wait, what is a pulse jet, how do they work and why are they so noisy?

Here is an explanation from this website;

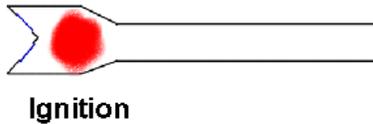
From <http://www.aardvark.co.nz/pjet/howtheywork.shtml>

Pulsejets are very simple engines but their operation is not always easily understood -- after all, how can an almost empty pipe run as a jet engine? This page is an attempt to explain the four basic phases in the pulsejet's operational cycle.



1. Ignition

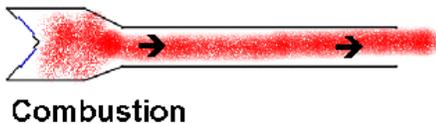
lets just assume that there is an air fuel mixture in the combustion chamber to begin. Then a spark is introduced. This is the instant that the fuel and air in the pulsejet are ignited.



The effect is that a fireball is produced inside the engine which creates a great deal of heat and pressure. The reed valves are held closed by this pressure, effectively leaving the flame and hot gasses only one place to go...

2. Combustion

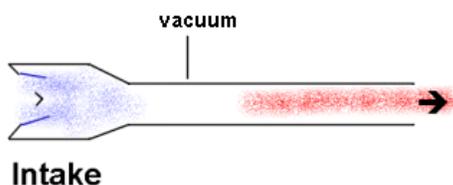
After ignition, the air and fuel continues to burn and expand in a phase called the combustion phase.



During this phase the burning gases expand and travel down the tailpipe, exiting at the rear of the engine. The force of the gases leaving the engine in a rearwards direction creates an equal and opposite force that tries to move the engine forwards -- this is thrust.

3. Intake

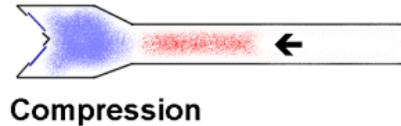
Because gases are elastic (they can be compressed and stretched) and because they have mass, the rapidly exiting exhaust gases have a tendency to keep moving -- even after the pressure inside the engine drops below the pressure outside. This causes a partial vacuum to be created inside the engine.



The effect of this vacuum is to draw air and fuel in through the valves at the front of the engine -- which are pushed open by the higher pressure outside the engine.

4. Compression

As mentioned above, gases are elastic -- so now, having been stretched out to create a partial vacuum, some of the hot exhaust gases are now drawn back towards the front of the engine by the vacuum that was created.



Once again, because they have momentum, the gases in the tailpipe continue to move even after the pressure inside and outside the engine is equalized. This means that the gases continue heading towards the front of the engine -- towards the fresh charge of air and fuel that has just been drawn in.

Of course, as soon as the pressure inside the engine becomes higher than the air pressure outside, the reed valves slam shut -- stopping the air/fuel mixture from escaping.

This continued movement of the exhaust gases causes the air-fuel mixture to be compressed -- until the hot gases finally travel so far up the pipe that they touch the explosive air/fuel mixture and; - BANG and -- back to step one!

This cycle repeats hundreds of times a second -- producing the characteristic buzzing sound of the pulsejet engine.

The Dynajet repeats this process at about 240 Hz, or cycles per second in old money. Or a bit below middle C for you music buffs. But there is absolutely no muffling or mechanical expansion of the exploding (actually burning, but who is counting when there is so much noise) so it is LOUD.

You can see and hear a more detailed explanation and demonstration of a Dynajet running on youtube; <http://www.youtube.com/watch?v=IjgkHJ2zWPY>

But what about the Middletown Pride Day, and the Propstoppers opportunity to actually run one of these exquisite things? Well that gets back to the second step; support equipment.

First we need a mount for the engine. It can be a simple couple of bent steel straps attached to a board, which in turn can be attached to our firmly anchored engine test stand.

Next, and maybe the most difficult, we need a source of ignition sparks. In the old days guys (I have never seen a girl play with a pulse jet) used Ford Model T ignition coils, sometimes called trembler coils as the tremble while producing a constant stream of sparks. This could be a difficult one.

But wait, what we need is a reliable stream of sparks to a conventional spark plug. There are at least two ways we could do this;

1. Chuck Kime could dig out an old distributor assembly and conventional ignition coil. Then someone could connect an electric motor (remember them?) to drive it and the whole thing could be powered by a 12 volt battery. Hey, you could even use the ignition switch.
2. Joe Mesko could design and build a simple oscillator circuit to send the stream of DC pulses directly to the ignition condenser and voila; same result, lots of sparks.

3. Or I guess someone could just throw a switch at a high rate.

The fuel system should be easy, just a tank mounted adjacent to the jet and a means of filling it. They run on gas usually (well, that is another story, but we won't get into it here).

Finally we need a source of compressed air. In the old days of model flying this was produced by an energetic person and a bicycle pump. This person always ran out of energy before anyone else ran out of enthusiasm! But nowadays we could use compressed air, and because these things are notoriously recalcitrant; you need a lot of it. Maybe we need a gas powered generator driving a compressor..... This could be done, I could supply it, or my son as his is more portable.

But mainly we need a person who is willing to pull all this together. Any volunteers?

Oh, yes, of course there are alternatives to all this stuff and the most interesting is the method I saw used at the Dayton, OH, Cold Cash Speed Bash in the mid '60's (they still hold this meet and still fly jets).

The process was simple and it worked, at least for them. Oh, did I mention that pulse jets run with almost all of the body at cherry red heat? This is the ignition source once you remove the spark. Their method was to bring the fuel up to the jet some way, I don't remember how, tip the nose down, heat the combustion chamber with a blow torch and then give it a squirt of fuel down the tailpipe. When it worked the backfire that ensued started the engine. But remember they had already gone through the whole process of getting everything else right so they knew it would run.

Whew, I can't wait

Dave Harding

Vernon Boehle, Aeromodeling Pioneer

Two years ago I began to build a new SAM contest model that I hoped would be even better than the big Stardust Special I have been flying for a while. I was inspired by the 70% sized version flown by buddy Glen Poole.

Glen Poole with his 70% Boehle Giant at the 2006 Muncie SAM Champs



My other flying buddy and hero, Jack Hiner, said it was the best flying SAM airplane he had ever flown. And Jack is a League of Silent Flight Level IV twice over, and a World record holder with RC sailplanes. What better commendation could you have? I had to build one, but in FULL SIZE, all 14 ½ feet of it.

Vernon Boehle was an extraordinary aeromodeler in the early and mid 1930's, the period when much of what we know and do was developed and perfected. Here is an article on Boehle written by Canadian David Owen and published in SAM 35 Year Book No. 10

Vernon Boehle

'A prolific builder and experimenter'

The above quote, by Bob Cahill, late of Indianapolis, Indiana, USA, accords well with the Depression era memories of his fellow clubman Jim Pulley, who noted that "Boehle was hard to beat at any contest... truly a fine builder ... He was a go-getter ... " These comments, graciously offered almost 60 years after the fact, succinctly attest to an exemplary member of the air-minded youth produced in the heady years of aviation.

Born on 26 May, 1915, Vernon Arthur Boehle [pronounced "Bailey"] graduated from high school in 1933 in Indianapolis, Indiana, after completing a four-year course. Unlike so many in that period he worked steadily after leaving school, initially as a sheet metal worker and later as an elevator mechanic. At least one source has indicated that he returned, at least for a time, to the latter employment after 1945.

The genesis of Vernon's aeromodeling is unfortunately unknown to me. It is obvious that he was a willing student of experimentation and practice, but the identity of any mentor during his early years has yet to come to my attention. An examination of the annual Nationals records in the modeling portion of American Boy magazine from the late 1920s to 1931 fail to find any mention of him, but it is likely that this period was the formative one in which he developed the skills which were to bring him to the attention of aeromodelers internationally.

The 1932 Nationals at Atlantic City, New Jersey, were to prove to be seminal for both the burgeoning hobby of aeromodeling and Vernon personally. Charles Grant opined in Model Airplane News that the 1932 Nats were " ... the last stand of the twin-pushers" in a class now dominated by the single tractor designs that modelers such as Vernon were developing.

Twin Pushers ruled prior to Vernon Boehle



Picture Copyright Nancy Kapitanoff, 2006

Jim Cahill, himself an outstanding product of the era, commented that Vernon " ... did well outdoors ... " at this particular meet in which he took 5th in Wakefield and 3rd in Mulvihill. As this accomplishment was his first at the Nationals level, his star was quickly rising. Looking back in the January 1937 issue of Air Trails, Gordon Light credited Boehle with single-handedly eliminating twin-pushers as the leading edge of outdoor aeromodeling. In 1993, Bob Cahill, the other half of the famous team of brothers, remembered clearly that Vernon did more practice flying than anyone else in their club. A field

across the street from his home afforded daily flying sessions, usually in the evening, and as a result Vernon was renowned for wasting no time trimming at contests. Such dedication was starting to pay off

But Boehle was not the only modeler at the 1932 *Nats* whose star was in the ascendant; Maxwell Bassett was to bring considerable change to both Vernon's modeling and the hobby generally. Many modelers welcomed innovations as they, in a sense, paralleled the constantly exciting developments heralded almost daily in the media of the era. Flying a Brown-powered gas model, later to be known as Miss Philadelphia II, through a loophole in the Wakefield rules, Maxwell Bassett took 4th place in the 1932 Wakefield competition, one place in front of Vernon. While it may seem strange to modern modelers that such glaring problems were tolerated, it is important to realize that such challenges of alternative power had surfaced before 1932 and had proved to be of little consequence. The hard fact remained that Maxwell Bassett's gas model had been beaten by three rubber-powered models and this tended to confirm the historic view concerning the superior reliability of rubber powered models, which were themselves improving as evidenced by the emerging tractor designs. The modeling of both Vernon Boehle and Maxwell Bassett was to develop in the next year.

It is possible to view the 1933 Nationals, whose outdoor events were held at Roosevelt Field on Long Island, New York, as the first modern American national contest as well as the watershed in Boehle's aeromodeling. Jim Cahill believed that Vernon's performance at the 1933 Nats was "sensational". With Vernon beginning to set records in rubber, his parents' home became a storehouse for his trophies, as Jim Pulley recalled. His 1933 "Weight Rule Model", published in Model Airplane News May 1934, held the official NAA record. By the following year it was published that he was the holder of the NAA record for Class C ROG Fuselage and the world record for both Senior Stick Class C and Senior Fuselage ROG Class D. The Zaic Yearbook of 1934 published his "World Record Outdoor Tractor (Class C).

It was quite common in that era that aeromodeling events, due to their great popularity, were covered by even the major American newspapers and the normally staid New York Times judged his achievements to be "remarkable." In two of the Americans' oldest and most prestigious events, the Mulvihill and Stout, for outdoor stick and cabin respectively, he came second, defeated only by Maxwell Bassett's latest gas design which also captured the Moffett Trophy, in addition to taking first place in a new event for gas models sponsored in its first few years by Texaco.

It is possible to argue that Vernon was cheated in 1933 of the further achievements for which he had worked so diligently. His response to this reality is indicative of his determined intelligence: he ordered a set of Brown castings to machine his own gas engine. Although he was to continue in rubber events until 1936 at least, Vernon Boehle, like the NAA, agreed with the writing on the wall following the 1933 Nationals. By 1934, rubber and gas events were to be permanently separated, with Boehle competing in both by the following year.

In common with Gordon Murray, who was to come to prominence a few years later, Boehle was known to his contemporaries as a serious practitioner of the art of adjusting models. Writing to Frank Zaic in 1979, Jim Cahill noted that Vernon's 1934 Mulvihill certainly employed side thrust and that

he was, at least, among the first in the United States to do so. Although he was uncertain as to how long previously Vernon had known about side thrust, he was certain that after the 1934 Nationals, held at Akron, Ohio, Bill Atwood stopped at the Boehle residence and in the course of their discussions, realized that both had independently come to the same conclusions about such adjustments.

In the fall of that year, Vernon revealed the secret to the members of the Indianapolis club, as Jim Cahill recalled. Peter Michel, of Surrey, England, has noted to me that Vernon had at least experimented with the dethermalizer function of dangling a prop and nose block assembly in the 1930s. [*His idea was to get the model up just long enough to become one of the six remaining entrants and without being lost, so on the next flight the model was wound a little more, but with the prop so adjusted that it would come loose with part of the rubber strands and nose down, killing the glide.*] - Philip Zecchitella writing on the 1934 Mulvihill].

It is impossible to avoid concluding that he was a thoughtful modeler.

David Owen

For the 1936 Nats Boehle built the *Giant*, a Texaco entry with an almost 15-foot wingspan that used a Baby Cyclone engine. The *Giant* was made for the Texaco contests based on the theory that the bigger it is, the longer you can see it. (*Still true today-Dave*) It was a bit underpowered and never was overly successful.



Vernon Boehle with his Giant Texaco at the 1936 Nats

Around 1939 or 1940, Vernon joined the Royal Canadian Air Force. Not being a college graduate and therefore, not a candidate for a commission and pilot's training, he went to Canada and as a sergeant became a *Spitfire* pilot. When the United States entered the war, he transferred to the U.S. Air Force and finished the war as a *P-47* pilot.

Capt. Vernon A Boehle, Indianapolis, IN. 334th Fighter Squadron, Ex 71, Eagle Squadron.

Capt. Boehle was shot down on September 9, 1943 in his P-47C and spent about 2 days in the Channel before being rescued.

Dave Harding



Dave Harding – Editor
4948 Jefferson Drive
Brookhaven, Pa. 19015
610-872-1457

Propstoppers R.C. M.A.C



The wise men and the student
Training the Propstopper way.
Jim Barrows get advice from Al Tamburro.

The Boehle Giant, on the front burner again. Follow along at: <http://www.dhaerotech.com/giantblog.htm>



Membership Renewal For 2008

Membership renewal for 2008 is now available. You can renew by mail or at the club meeting in April

Bring cash or check and your AMA card.

Dues are \$60.

Please send a check to;

**Ray Wopatek
1004 Green Lane
Secane, PA. 9018**

Please enclose a copy of your current A. M. A. Membership card,

And Please, Please enclose a Stamped self-addressed envelope.

Ray Wopatek Membership Chairman