The Flightline

Volume 32,Issue 11 Newsletter of the Propstoppers RC Club AMA 1042 November 2002

Editorial; Club Elections.

Most successful organizations are run from many levels, the members talk and think (sometimes in this order), the club officers, who are also members listen, talk and perform their functions with a sense of duty and commitment. In the really successful organizations there is a third element, the "wise old birds". These are the people who have lived life to the full and learned its lessons. The really good ones work with a sense of need and timing, rarely imposing themselves on routine matters but they are there when those special needs arise. So it is with the Propstoppers.

If you attended the October meeting you know what I am writing about. Faced with the situation where our stalwart leader Mike Black has said he will not serve another term, and deafening silence from the usual volunteers, Jess Davis deftly lead us to a solution. By explaining the essence of the duties of President, a post he once held for us, he invited our Presidential candidate to volunteer. He then went through the other board member positions eliciting willingness to serve another term from Vice President, Dick Seiwell and Treasurer, Al Gurewicz. Only the absence of Rusty Neithammer and not knowing if he wants to serve another term prevented Jess from filling the slate.

So, when we vote for our officer candidates at the November meeting give a big public hand and a wholehearted private one to Jess Davis who lies at the very heart of our club.

We do still need a replacement for Rusty who has asked to be replaced. So, what does the job of Secretary involve? Well, first you have to be committed to attending most of the club monthly meetings. At those meetings you take the minutes, notes about what happened. Rusty types up these minutes immediately after the meeting when they are fresh in his mind then he sends them to the President for his review. The corrected minutes are then e-mailed to me for publication in the following Flightlines.

All in all, a fairly straightforward job that many of you could perform, so how about throwing your hat in the ring. The club needs a little more support right now. Think about it, if you volunteer for the Secretary position you will be protected when Jess performs his magic to find the "volunteers" for the Field Search Committee.

Actually, John Zebuski willingly accepted Jess's invitation to throw his hat in the ring. One of the first steps in taking the helm, should we elect him at the next meeting, is this troublesome Field Search Committee. Perhaps we really do need someone who has "been there" to explain just what is involved in this task. Clearly one person does not have to do all the work himself. So, perhaps if we can get a definition of the task and slice the job into various roles it will look more manageable and appealing. It is really not fair to expect Chris Catania to ride to the rescue all-alone again.

Another related issue is what to do with the current Sleighton field. The lack of rain this last two years has been the primary cause of the poor surface as the grass that was planted by the farmer did not grow to maturity during the summer of last year. It is filling in now, aided by the additional grass seed we planted this summer. But the surface is still rough and members are concerned about its effects on their airplanes. Since we may find ourselves flying at Sleighton next year it would seem to be prudent to invest some money and effort in improvements. Rolling the surface should be a priority but how and with what needs to be worked. Perhaps we should organize a field improvements committee to work out the details.

Meanwhile, Mike DiDomenico has arranged for us to have the Tinicum School gym for four evenings of indoor flying again this season so read the article on indoor flying in this issue and build something, anything, or just come out an help.

Mick Harris is moving forward with the request for Society of Antique Modelers charter for our Propstoppers Chapter. In doing the research he has found that the former SAM 76, a Philadelphia chapter, has been defunct for a while so SAM will reissue it to us. Therefore we will become SAM 76 Propstoppers Chapter when the board duly sanctifies the application.

So, get focused on the business at hand for the next club meeting on Tuesday 5th of November at the Marple Library. Be there, we need you!

Dave Harding, Editor

Agenda for November 5th Meeting at Marple Library 7:30 pm

?? Approval of October meeting minutes
?? Finance report
?? Membership report
?? Nomination of Officers
?? Field Search Committee report
?? Bylaws Revision Status
?? New business
?? Indoor flying plans
?? Show and Tell.

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Calendar of Events

Club Meetings

Regular Meting 7:30 pm
Tuesday 5th November
At Marple Newtown Library

Regular Meting 7:30 pm
Tuesday 3rd December
At Marple Newtown Library

Flying Events

Propstoppers Indoor Flight Demo.
Interboro High School gymnasium
Wednesday, Nov. 6, 2002, 7 to 9 PM.
See Mike Black to volunteer.

Indoor flying at Tinicum School
Friday December 13, 2002
Friday January 10, 2003
Friday February 7, 2003
Friday March 7, 2003

Regular Club Flying

At Moore and Sleighton Fields

Daily	**10 am til Dusk**
Saturday	**10 am til Dusk**
Sunday	**12 p.m. till Dusk**

Propstoppers RC Club of Delaware County, Pennsylvania.
Club Officers

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Propstopper's Web Site;
www.propstoppers.org

Check the web site for back issues of the newsletter, pictures of club events and the calendar of future events.
Pictures courtesy of Bob Kuhn and Dave Harding

The President's Message

Dear Fellow Propstoppers,

I have thoroughly enjoyed my tenure as President of this organization. Overall, we have grown in size and the treasury is in good condition. I must thank Al for the excellent job he has done as our treasurer. Ray has kept membership near our goal of seventy. Rusty has taken excellent minutes, transcribed and forwarded them in a very timely manner. Dick is always there when any kind of work or help is needed. He finds the equipment and gets the job done. Al and Jess have done fine jobs as Field Marshall and Safety Officer. Bill and Monica Shellhase organized and ran the last few picnics. Del Glennon arranges and delivers rolls for events where we serve food. Dick Bartkowski and Mickey Callahan have volunteered to help run events. Chris Catania helped us to secure Sleighton Farms. Bud McClellan took care of fuel sales, which were both a convenience and a fundraiser for the club. Mike DiDomenico helped us to secure our indoor fun fly site. Others have organized caravans to sales and fun fly events. Dave has brought new life and spirit to the club meetings and in particular to the *Flightline.* Bob Kuhn led us into the technology age with our website. Mick Harris is leading us into SAM. Tom, Bob and Jess have made sure that we have coffee and snacks at the meetings. Our by-law committee has done and excellent job. Al has been a constant fundraiser by running the 50-50 and the auctions. Many of you volunteer and work industriously at the field workdays and at events. Our meetings have been entertaining, educational, and thought provoking. The club in general and I, myself am grateful to all of you for everything you have done. Without you we would not be where we are today. Thanks to each and every one of you for your support, help and guidance. I hope I have not missed anyone. My sincere apologies if I have.

Now we must turn our attention to the future. John will have some challenges ahead of him as our new leader. He needs the same level of help and commitment to the organization that you gave while Jess and I were president. Maybe more so with the unknown field situation. We must help him search out, secure, and develop a permanent flying site. I am confident that John will provide us with direction, work diligently for the club, and be an able leader. Now lets resolve to support and help him.

Let us keep our wings level, Mike ***Black***

Current Club President Mike Black and Presidential candidate John Zebuski examine Bob Crowell's Sig Extra 300

Message From John Zebuski, Candidate for Club President.

Hi, I am John Zebuski and I am a candidate for the position of Club President. I currently fly a Gee Bee funfly from Great Planes, and have two more planes in the works. The first one is a Top Flite F4U Corsair and the second one is Tower Hobbies 60 size Uproar.

As club president I would like to continue the progress and leadership Mike and the current club officers have provided. I would also encourage the club members to become a more active part of the club.

Two things that I can think of are, first our field situation. As Mike has pointed out before, it is of great importance. Finding a new and more permanent home will have a positive outcome on the club now and in the future.

The second is club events. We all have ideas that would enhance our enjoyment of our chosen hobby, share them and get involved with the planning of the events.

And one last thing, I would like to thank Mike Black and all of club officers for the great job they have done over the last several years.

John Zebuski

October 1st Meeting Minutes

Call to Order – Dick Siewell called the meeting to order at 7:35 P.M.

Roll Call – Ray Wopatek called roll. There were 24 members and 3 guests present.

Minutes – Jess Davis moved that the minutes be approved as printed in the newsletter.

Seconded by Bob Crowell, Passed unanimously.

Treasurer's Report – Al Gurewicz reported income of $27.50 and expenses of $300. The treasury balance is $2.903.09 and there is petty cash in the amount of $37.89. There is $2,940.98 available. The treasurer's report was filed for audit.

Old Business –

Field Search Committee – Mike Black referenced the recent *Inquire*r article on Sleighton Farms and the conflict between Pulte Homes and Elwyn. Elwyn is showing the property again. The community wants an institutional buyer or to keep the land as open space. It was also noted that the community wants to put the church and some of the other buildings on the Historical Register. The above may have a positive impact on ability to continue to lease the property.

By-Law Committee – There were no changes or discussion of the proposed by-laws. Mike Black thanked the committee for their fine work. He asked them to forward their work to Carl Moroney (AMA Legal) for approval. Dave Harding was asked to place a note in the *Flightline* as he did last month referencing the September newsletter for the language of the new by-laws. We will vote on accepting them as a local club at the November meeting.

SAM – Mick Harris gave a brief overview of the Society of Antique Modelers to those present. A show of hands was requested to see who might be interested. Five members indicated they would be willing to join.

Pennsbury Land Trust – Mike Black reported on the successful demonstration and thanked Brian Boardman for the aerial photography work with his on-board camera.

Wildwood Report – Al Tamburro reported that he and John Zebuski represented the Propstoppers at the annual summers end fun fly at the beach.

Rotofest – This annual event will be held on October 19 and 20 in West Chester.

New Business –

SAM Chapter – Dave Harding moved that Propstoppers endorse a local SAM Chapter. Seconded by Bob Crowell. Passed unanimously.

Web Site Upgrade – Bob Kuhn and Dave Harding contacted President Mike Black with the information that the web site had used up all of its available space. Bob Kuhn recommended that we double our web space at a cost of approximately $25. Mike questioned the expenditure and the need to cycle out some old material. Bob provided Dave and Mike with our web site hit statistics. Our website takes thousands of hits monthly, but in months where there are activities it was utilized by over 4,000. With this data as a guide, Mike gave Bob the go ahead. Dave will save old articles that are instructional and cycle out old newsletters as he gets the chance.

Nominations of Officers -

President	– John Zebuski
Vice-President	– Dick Seiwell
Secretary	– Open
Treasurer	– Al Gurewicz

Elections will be held at next months meeting. All candidates were informed that they could send statements to Dave Harding for print in the *Flightline* by the October 15th deadline. .

Proposed Budget – Al Gurewics presented the expected costs and income for next year. His information was based on 70 adult paying members, which we do not have at this time. He will have to revise his income figures based on the actual membership and his expense figures on field rental. He will present a final budget at the November meeting for approval. It was decided that we drop the $20. Assessment. The dues projection for the 2003 flying year was $80.

Interboro Demo Night – Wednesday, November 5, 2002 the club will be putting on an indoor flight demo in the Interboro High School gymnasium for the benefit of the Interboro Night School Program. This facility is located in the high school at the corner of 16th and Amosland Roads in Prospect Park, PA. It will begin at 7 PM and end at 9 PM. Members volunteering to participate in both flight and static displays should plan to arrive at 6:30 PM.

Indoor Fun Flying – Mike Black is working to secure the Tinicum School gymnasium for four evening indoor fun flys again this year. The proposed dates are all Fridays. They are 12/6/02, 1/10/03, 2/7/03, and 3/7/03. Mike will inform Dave Harding as soon as plans have been finalized.

Indoor Fun Flying II – Dave Harding will try to make arrangements with the Salvation Army in Chester to use their gym facility for indoor fun flying throughout the winter months. When Dave finalizes plans he will inform the membership.

Breakfast Club – Dave Harding raised the question of forming a club breakfast club that would meet on a regular basis. Discussion was tabled till next month.

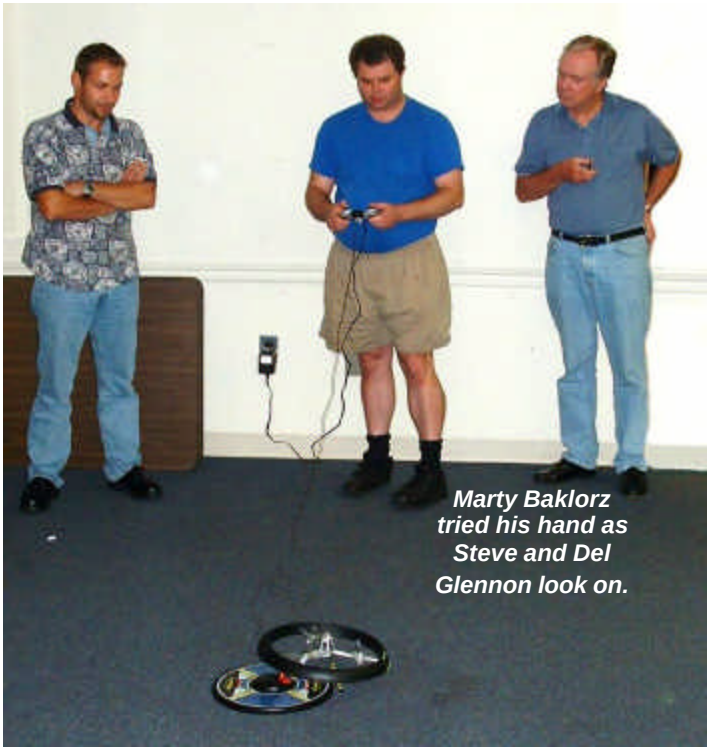
Break

Show and Tell

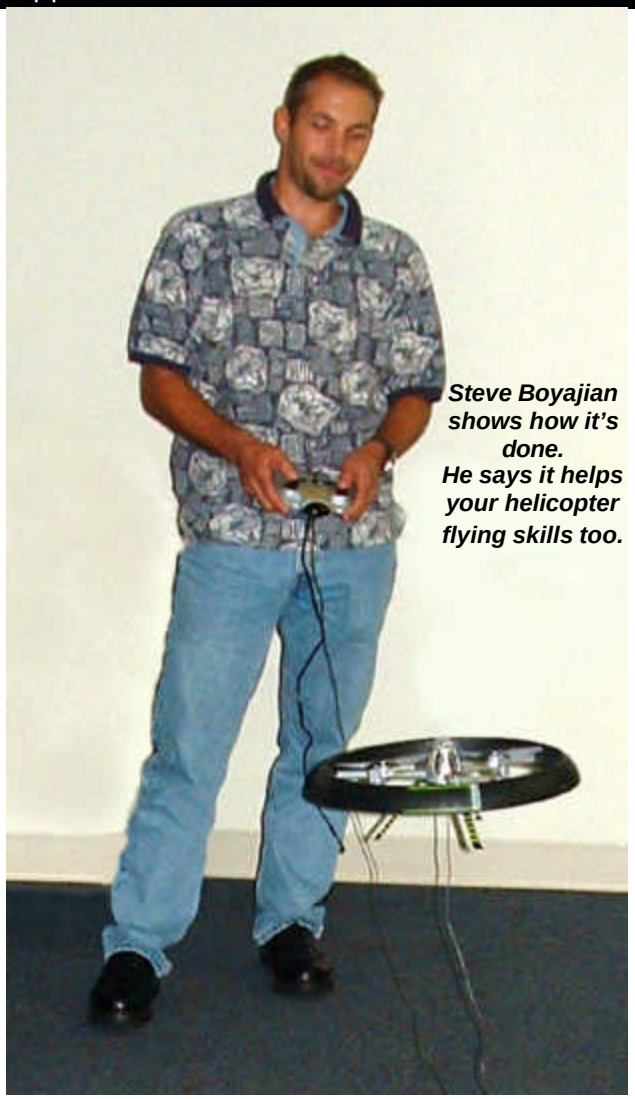
Bob Crowell showed his SIG Extra 300 XS with a SAITO 180 swinging a 16 X 8 prop. He stated that it was an ARF kit that was easy to build with a 24 oz. fuel tank. It has been flown three times thus far.

Bob Crowell with his new Sig Extra 330 XS

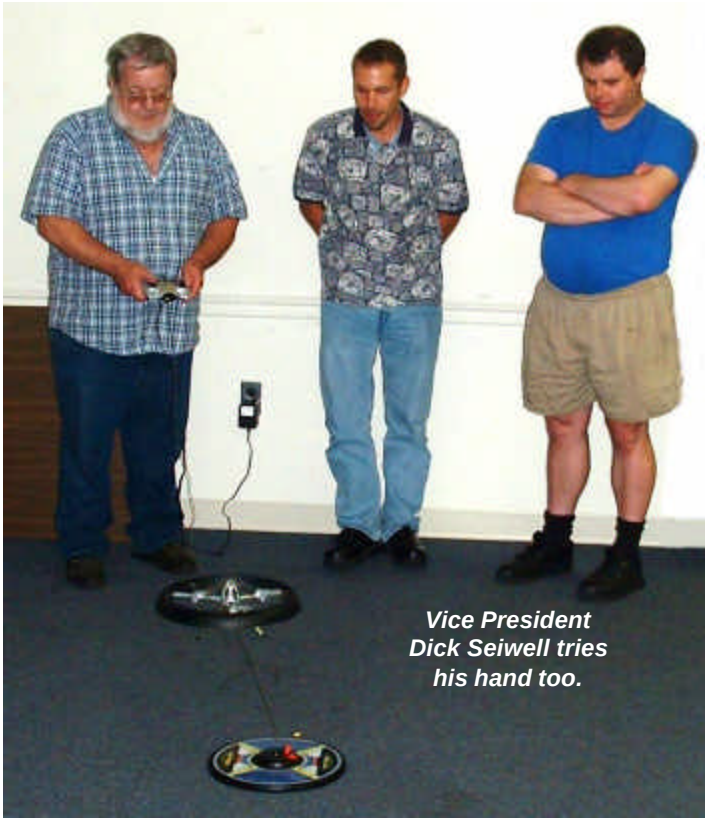
Steve Boyajian showed his $80 Blackhawk Hovercraft. It is a tethered RC model with a message ring on the outside. Steve impressed all with his indoor flying. He allowed several others to attempt indoor flight with a significantly shortened tether and trainer board.



Marty Baklorz tried his hand as Steve and Del Glennon look on.



Steve Boyajian shows how it's done. He says it helps your helicopter flying skills too.



Vice President Dick Seiwell tries his hand too.

Al Tamburro showed Ray Wopatek's Giant Panda, which looks a great deal like a giant Lazy Bee. It is an ARF powered by a Thunder Tiger 42. Al noted that the plane would easily lend itself to electric conversion.

Al Tamburro shows the Crazy Panda

Adjournment – The meeting was adjourned at 9:10 PM
Respectfully submitted,
Mike Black, President

The Indoor Season Begins

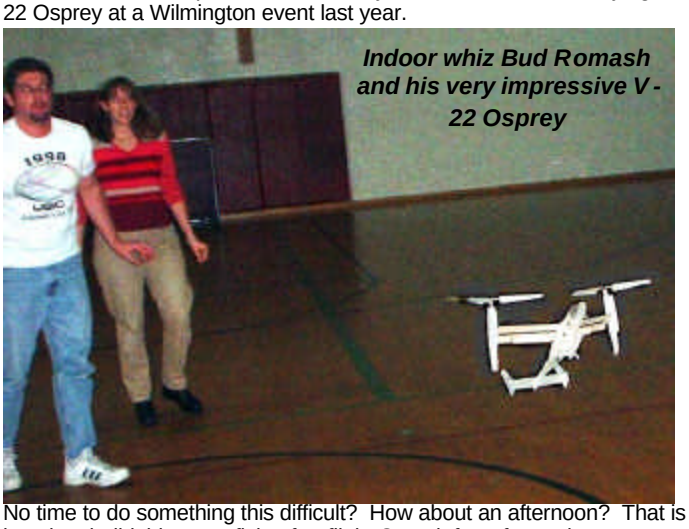
Thanks again to the efforts of Mike DiDomenico we have four dates in the Tinicum School gym. The dates are;

Friday December 13, 2002
Friday January 10, 2003
Friday February 7, 2003
Friday March 7, 2003

Our friends from the Silent Knights Soaring Society of Wilmington have also arranged for a number of events including a monthly meeting in a huge building at a location just into Maryland off I-95. They are also arranging for a monthly freeflight meeting at a Wilmington high school gym. More info on these dates soon.

We had great time last year with all kinds of models, hand launched gliders, rubber and electric powered free flight and of course all kinds of RC models. We may also arrange some dates at the Salvation Army gym in Chester. With multiple opportunities it pays to build something and get involved.

Here is a picture of Nationally ranked Bud Romash flying his V-22 Osprey at a Wilmington event last year.



Indoor whiz Bud Romash and his very impressive V-22 Osprey

No time to do something this difficult? How about an afternoon? That is all it took to build this great flying freeflight Corsair from foam sheet.

Your Editor with his free flight foam Corsair

I have enough wings, motors and paint to make another five. Anyone want a "kit"?

But you are an RC pilot? Well there is the wholly satisfying GWS J-3 Stick like Mike Black's one here.

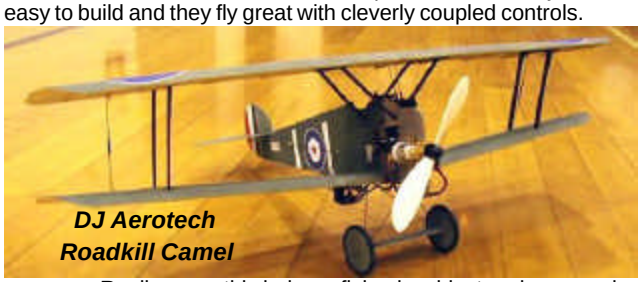
Mike Black and his J-3 Stick

Oh, you are an aerobatic RC pilot! How about one of these;

Dan Kreigh and his latest IFO Trainer at the AMA Symposium 2002

This is designer Dan Kreigh with the latest Indoor Flying Object, the IFO-T or trainer version. This one has a rudder control and two-wheel landing gear. These are as close to the ultimate aerobat as you can come. Construction is super easy and like most indoor models they are rugged. Invest in a set of lithium poly batteries and fly all evening without charging.

How about DJ Aerotech's Roadkill Series? Profile balsa three channel scale models like this Sopwith Camel. They are real easy to build and they fly great with cleverly coupled controls.



DJ Aerotech Roadkill Camel

Really guys, this indoors flying is a blast and you can be as creative as you want and still not invest much in time or money. You can still fly them throughout the following outdoor season. Join us over at Moore field on the calm summer evenings.

Dave Harding

Heat Engines

Last flight of the day, switch on the juice pump and put in another ten ounces of Powermist finest. Reach for the glow driver and crank the starter. Immediate response from a burbling exhaust sound and a slowly humming prop. Houston, we have ignition.

Ignition? Powermist, Glow Driver? What is going on here, we just want to fly an airplane.

Heat engines, that's what!

Heat engines? What's that? Well, heat engines turn heat to useful work.

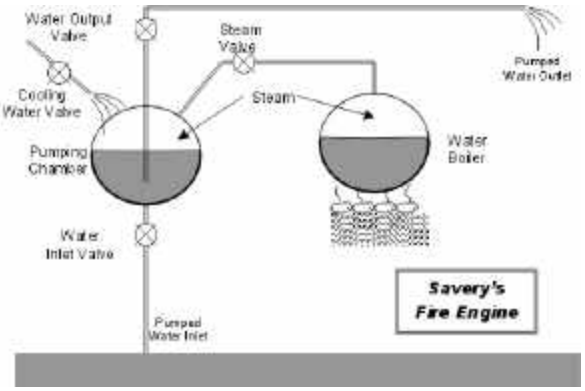
Motive power or working energy sources have been sought and developed to help mankind for centuries. The motivation for early heat engines was in the need to keep water from flooding mines. Real commercial motivation here. As mines were dug deeper this became a major problem.

"In many cases, the cost of drainage left no satisfactory margin of profit. In one mine, 500 horses were employed raising water, by the then usual method of using horse gins and buckets".

The Heat Engine is the term we apply to devices that burn a fuel to make heat that is then converted to useful mechanical effort.

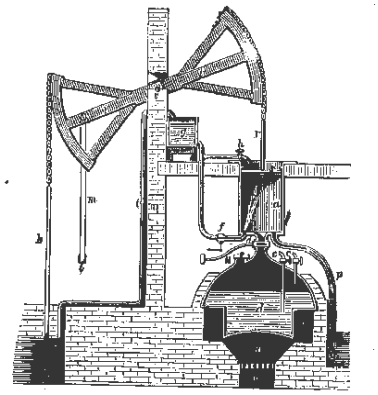
The first practical Heat Engine was patented by, Savery, an Englishman, in 1698 and put in use in the early 1700's. It worked exactly like the high school experiment where water is boiled to steam in a metal can which is then tightly closed. In high school the can cools and then collapses.

In Savery's Fire Engine, steam is generated in a boiler and admitted to the Pumping Chamber via a valve. When the chamber is full of steam the steam valve is closed and the water input valve opened. Spraying water on the outside of the can cools steam in the chamber. The can or chamber then sucks the water by virtue of the vacuum formed when the steam condenses. Then the steam and water outlet valves are opened admitting more steam that pushes the water out. This process is conducted continuously to pump the water. Thus, the fuel burns releasing energy that pumps the water: a Heat Engine



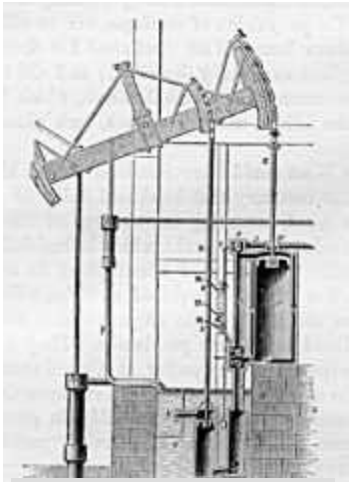
During the entire development of heat engines three attributes have driven development; efficiency, weight and cost. The efficiency issue, how much fuel is burned, drove the first major improvement to Slavery's engine.

In 1712 Newcomen, another Englishman devised an engine where the steam was injected into a cylinder fitted with a piston. Injecting water into the steam filled cylinder condensed the steam. The piston was connected to a beam that in turn was connected to a mechanical pump. This was the first engine mechanically connected to the output means. It begins to look like the familiar single cylinder / piston heat engine although the output was an oscillating linear motion rather than rotary.



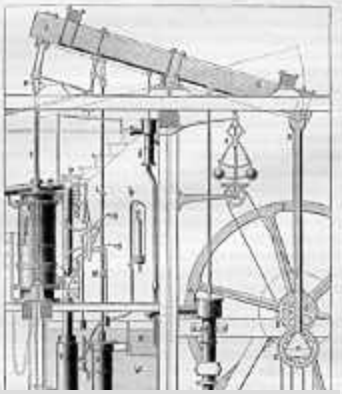
The next invention was also made in the interests of efficiency when in the 1770's James Watt, a Scotsman, recognized that the successive heating and cooling of the entire cylinder and piston assembly was wasteful. He devised an engine where the condensing of the steam was accomplished in a separate chamber. This chamber was connected to the cylinder via valves that alternated with the input of steam to the cylinder. The condensing chamber was continuously cooled by immersion in water and condensed water evacuated by means of a vacuum pump. Opening the valve between the condensing chamber and the cylinder sucked the piston down.

Having produced a more efficient pumping engine Watt then turned his attention to rotary output. He developed the familiar crank mechanism proposed by others but when an accomplice left his employ and patented the mechanism the furious Watt invented an alternative one. This employed a gear on the crank and another on the connecting rod to produce the rotary output by epicyclic motion.



James Watt's 1774 Engine

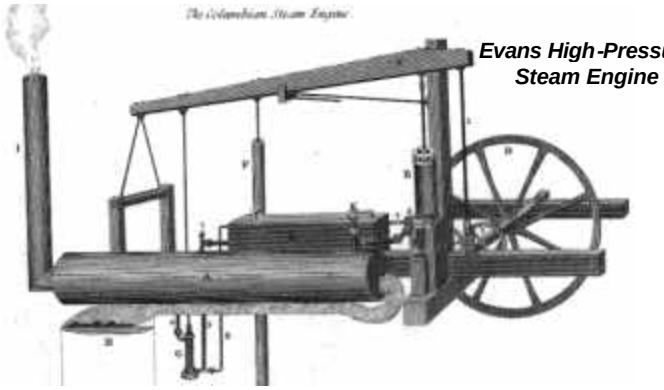
Thousands of Newcomen and Watt's engines were built; they literally powered the Industrial Revolution. So successful were they that Watt and his associates concentrated on refining the basic design rather than looking for the next great step although many significant improvements were made including the double acting cylinder where there is a power stroke in both directions.



James Watt's 1781 Epicyclic Drive

All of the foregoing engines were what is known as atmospheric. This is because the working pressures are atmospheric and lower (vacuum). The use of pressurized steam was deemed unnecessary and risky. Watt's boilers produced steam at only six or seven pounds per square inch so they could be made using simple processes and materials. Others saw the advantage of high-pressure steam and exploited it.

Oliver Evans from Newport Delaware, a farmer's son, pursued the development of high-pressure steam engines with compound cylinders. That is, the primary, or high-pressure cylinder exhausts into a second or low-pressure cylinder. Thus the high-pressure steam is expanded more completely in two stages.



Evans High-Pressure Steam Engine

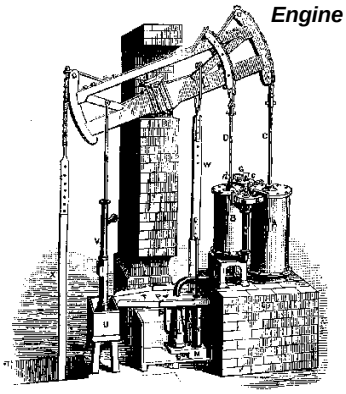
The use of high-pressure steam meant that the cylinder and piston could be very much smaller and lighter than those in an atmospheric engine. His initial engines used steam pressure of 150 pounds per square inch, more than ten times higher than the conventional Watt engines. Consequently his engines were dramatically smaller, lighter and less expensive. However, impressed by this apparent efficiency Evans deleted the condenser used in all Watt engines so his thermal efficiency was no better. So, the same amount of coal was required as the Watt engine to do a fixed amount of work.

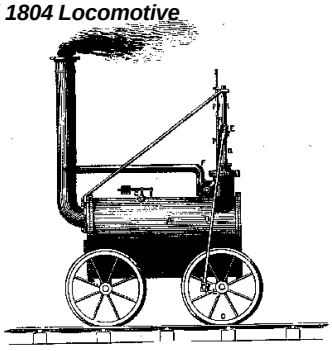
Nevertheless, Evans was very successful. His crowning achievement was the construction of the engine and boilers for the Fairmont Park Waterworks in 1818. This engine had a bore of twenty inches, a stroke of five feet and operated at a pressure of 200 psi. Fired by four boilers. Imagine the coal consumption!

Simultaneous with Evans, an Englishman, Jonathon Hornblower, developed a high-pressure compound engine and his did have the condenser. Although he failed in his attempt to market the engine, another Englishman, Richard Trevithick perfected the approach and went on to build some of the first successful locomotives.

High-pressure steam was the key to powered vehicles and vessels, which rapidly flourished following this invention.

Trevithick's High Pressure Compound Engine and 1804 Locomotive





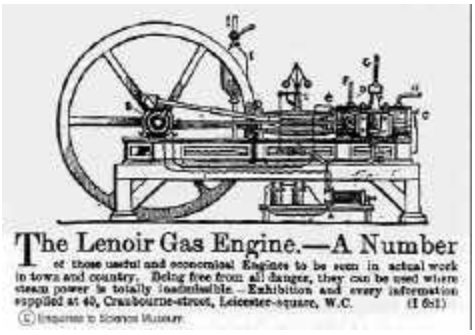
The steam engine today is just a very refined version of these engines with the same basic arrangement although with much higher pressures and temperatures.

The steam engine burns its fuel outside the working mechanism incurring thermal losses. This results in inefficiencies that led inventors to consider engines that burn their fuel internally;

the ***Internal Combustion Engine***.

Although there were a number of experimental engines the first successful internal combustion engine was the French Lenoir of 1860. This double acting cylinder engine was run on coal gas (lighting gas). It drew the gas mixture into the cylinder on descent, igniting it before reaching the end of the travel. The spent gases were exhausted on the next stroke, so the engine was essentially a two stroke but different from those you are familiar with.

Being basically an atmospheric engine, the pressures were low. These engines were very inefficient but they were simple and clean. Several hundred were sold.



The Lenoir Gas Engine.—A Number of those useful and economical Engines to be seen in actual work in town and country. Being free from all danger, they can be used where steam power is totally inadmissible.—Exhibition and every information supplied at 40, Craubourne-street, Leicester-square, W.C. (1 6d.)

The German Otto made the real breakthrough in Internal Combustion Engines in the 1870's by inventing the four-stroke cycle.

Here is one of Otto's early commercial single cylinder engines. Basically the same layout as your Saito! By the time of his death in 1891 more than 30,000 of his engines had been built.

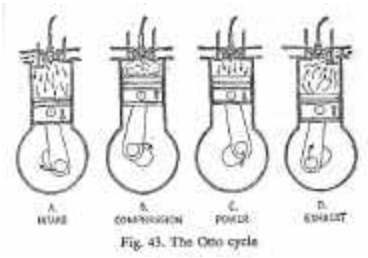
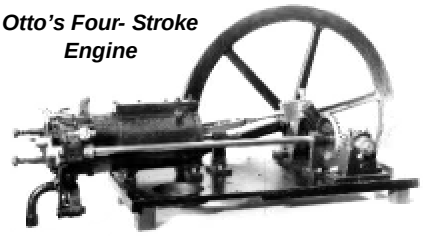


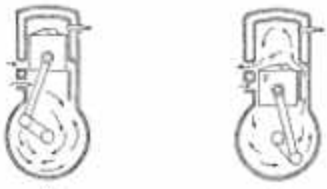
Fig. 43. The Otto cycle

The disadvantage of the four-cycle engine is that it produces power only on every other stroke so in 1878 Sir Dugald Clerk of Scotland invented the two-stroke engine that was further improved by Joseph Day in 1891.

Otto's Four- Stroke Engine



This two-stroke layout is lighter and simpler than the Otto cycle four stroke. This is basically the two-stroke engine we know today.



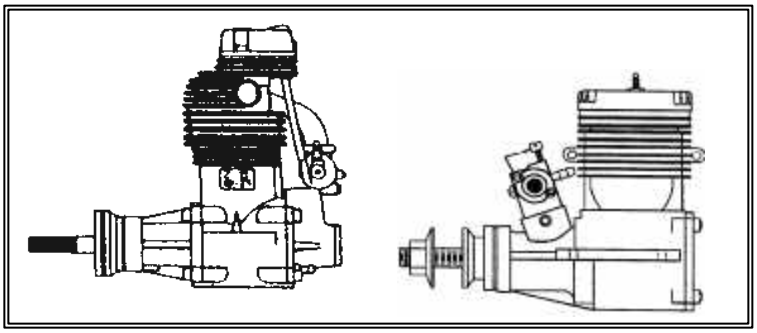
Two-stroke cycle gasoline engine

Day's Two-Stroke Engine

So now you know.
Gentlemen, start your heat engines!

Dave Harding

By the way, all these engines may be seen in the London Science Museum.



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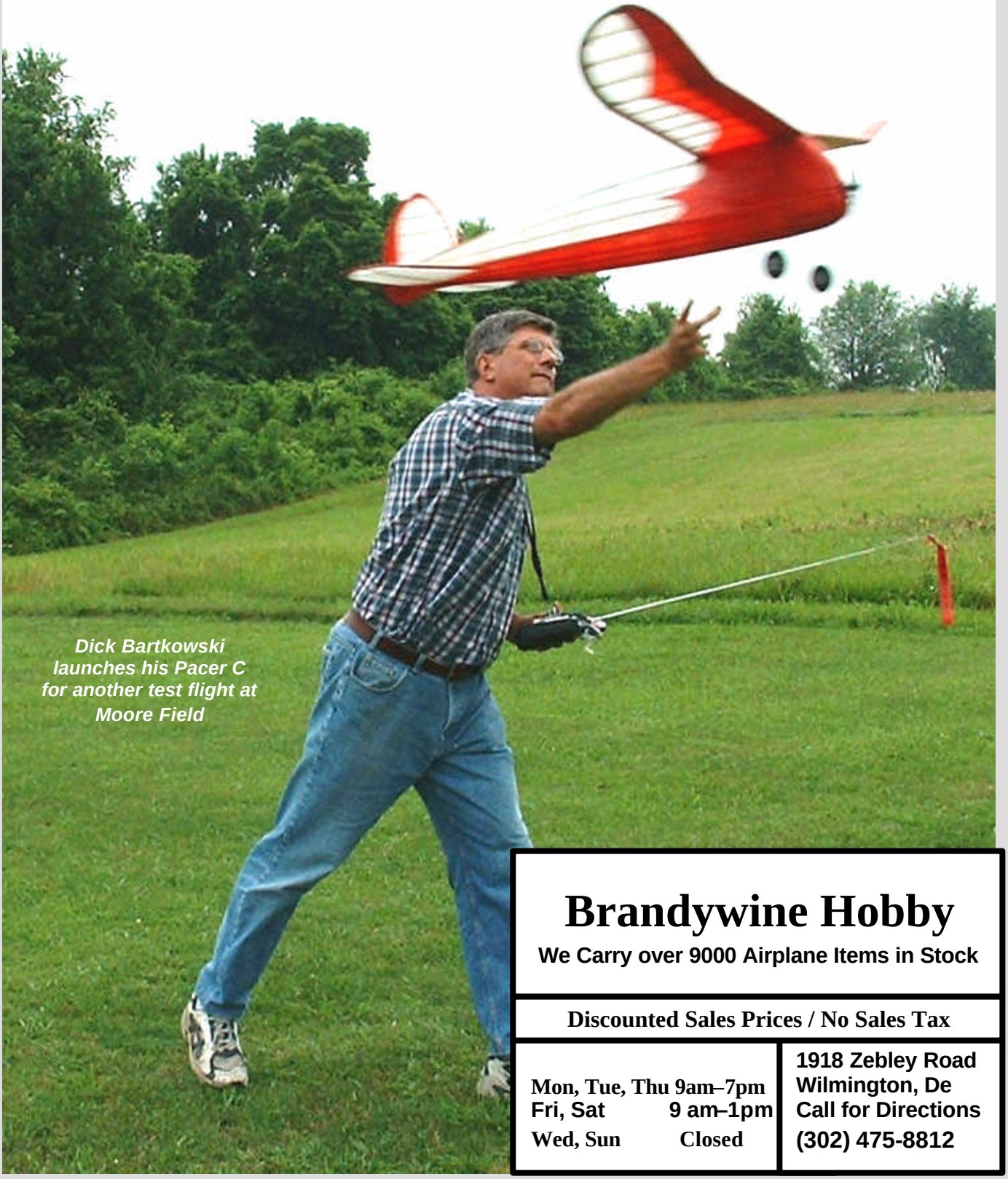
Propstoppers R.C. M.A.C



Dick Bartkowski launches his Pacer C for another test flight at Moore Field