



# The Flightline



Volume 43, Issue 5    Newsletter of the Propstoppers RC Club    AMA 1042    May 2013

## President's Message



Middletown Community Day is May 11th. Set up time 9:30 till 10:30. Jeff has published a map in this issue to show the locations for parking and flying. A good turnout would be great PR for the Club.

C/A field is in top shape and Thursday night is ready for flying.

Elwyn field has been cut and ready for flying. We plan to have a meeting with the authorities so we can increase the size of the field but until then keep flying. Bring in your show & tell we will make time for all. Club business will be after show & tell.

See you at the meeting.

**Dick Seiwell, President**

### Agenda for May 14th Meeting At Middletown Library; Doors open 6:00, meeting at 6:30

1. Membership Report
2. Finance Report
3. Plans for June Picnic
4. Show and Tell

### Minutes of the Propstoppers Model Airplane Club April 9, 2013 at the Middletown library

Call to order by Vice-President Jeff Frazier took place at 6:30 PM

Roll call by membership chair Ray Wopatek showed 14 members and 1 guest present

Treasurer's report by Pete Oetinger was presented and accepted

Minutes of the March meeting were approved as published

### Show and Tell:

Al Tamburo showed a 1948 control line model Super Clown. It was advance for its time with flaps elevator coupling for stunt flying.

Jeff Frazier showed a foam cut out F - 22 powered by an electric outrunner ducted fan. He built it especially light for better performance.

Joe Paradine showed a Laser - one man sailboat RC model. He has had it for 20 years and says it is fast on the water.

Phil McQuilling showed a Depron foam RC that you can fly on water or land. It looks more like a speedboat than a plane but it flies - although slowly. It is powered by a 3S LiPo. It has flown at the field and now he plans to try it on water.

Photos of these models were posted by VP Jeff Frazier in a message to the club's Yahoo group.

Adjournment took place at 745 PM.

**Dick Bartkowski, Secretary**

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- 21 **A Glorious May Flying Day at CA Field**

## Calendar of Events

### Club Meetings

Monthly Meetings  
Second Tuesday of the month.  
Middletown Library  
Doors open at 6:00, meeting at 6:30 pm.  
**Next Meeting; 14th May**

Tuesday Breakfast Meeting  
Tom Jones Restaurant on Edgemont Avenue in Brookhaven. 9 till 10 am. Just show up.  
Flying after in the summer at CA Field or Chester Park; 10 am. Weather permitting.

### Regular Club Flying

**At Christian Academy; Electric Only**  
Monday through Friday after school till dusk  
Saturday 10 am till dusk  
Sunday, after Church; 12 pm till dusk  
**At Elwyn Field; Gas or Electric**  
Monday through Saturday 8 am till dusk  
Sunday 12 pm till dusk

**Indoor Flying** Wait till the Fall!

### Special Club Flying

Saturday mornings 10 am  
Wednesday Helicopter evening in summer  
Thursday evenings in the summer  
Tuesday mornings 10 am weather permitting after breakfast.

Check our Yahoo Group for announcements;  
<http://groups.yahoo.com/group/propstoppers/>

### Picnics and Special Events

- Middletown Community Day Saturday  
11th May 11am to 3 pm  
Penn State Campus on Rt. 352
- June Picnic 15th
- September Picnic 28th

### Beginners

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

The club also provides the AMA Introductory Pilot Program for beginners without AMA insurance.

### Propstoppers RC Club of Delaware County, Pennsylvania. Club Officers

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*"Community, Businesses and Township Government  
working together to celebrate the vibrancy  
and hometown pride of Middletown Township."*

Hi all,

As a club, we participate every year at the Middletown Community Day <http://middletownprideday.com> (previously called "Pride Day"). It is scheduled for Saturday May 11th this year. I usually coordinate the logistics and planning for us - so here we go 2013!

We would like to make this year bigger than ever simply by having more club members present to attend, demonstrate airplanes / helicopters and to fly if you are comfortable doing so. I think there is a misconception that you are expected to actually fly - that is not the case, attending to talk with the kids or just demo'ing a plane is more than enough.

It is always a fun day. There is food, entertainment and a lot to see. For our stuff, the community really enjoys the aircraft - especially the kids. Try to make it if you can. I think one demo what would be really neat would be AI T's control line planes. I think that would be great.

**Please Note:** There is a parade at the beginning of the day - so unless you plan to come after it, **you need to be parked and set up between 9:30AM and 10:30AM.**

I have annotated a picture from Google earth below for guidance. The parking area is usually where we are asked to park. If this changes, we will let you know if advance of the event.

#### Event Address:

Penn State Brandywine Campus  
25 Yearsley Mill Road  
Media, PA 19063

If you have questions, either email me or call me - glad to help.

Email: [jfrazier@comcast.net](mailto:jfrazier@comcast.net)

Mobile: 610-357-4557

I hope to see everyone out there!

Jeff Frazier, Vice President





With no picnics scheduled for July and August should we pick a theme for a flying day. The Cox Warbird Day was quite a success back in 2007 (was it really that long ago?)





## ***Widener University Engineers on the Line at SAE Aero Design West***

I have reported the progress of the Widener University Senior Mechanical Engineering student's progress in designing, building and developing a model to compete in the SAE Aero Design West competition. Their development process was "completed" with one final flight on a windy and turbulent day in March. The model at last seemed controllable after modification to the ailerons into spoilerons, if there is such a word. But they were rapidly running out of time but they decided to build two new airframes to ship to California. While doing this one last series of flight tests were planned to ascertain the best propeller and maximum payload they might carry.



These tests showed the model would takeoff in less than 200 ft with a 30lb payload on two different 14 inch APC props. Here our Chuck Kime is indicating the 175 ft point to allow the pilot Pete Noel to judge when to pull up.



Meanwhile the crew built the two additional airframes and prepared to ship them to California via Greyhound Bus Company, the method Dick Bartkowski and I have used for four different trips to the SAM Champs in Nevada. Although we

warned them to watch the weight and size of their box it was a struggle to bring it under the 100 lb Greyhound limit. Worse, when they did take it to the Philadelphia bus station they found the Greyhound scales read up! Their 90+ lb box weighed 107 lb! So some non essential material was removed and the package sent. They were told it should be four days but might be seven.

Early in the project when they decided to fly in the West competition vice the East because it gave them an additional month of preparation. I told them I would support the flying by spending the month at my daughter's in South Pasadena and transporting the box and supply support equipment and tools etc. We maintain a Chrysler T&C van as our Cal transport and it was ideal for the purpose, in much the same way my Pennsylvania Dodge does here. They also shipped several packages of essential parts and supplies via Post to my daughter's house. These packages included two small Fixed Rate Priority boxes containing the tungsten rods ~ a real heavy weight shipment! In the event only one arrived in time, the other appearing a week after the contest. But it was to work out as you will see.

Anyway, the box did not arrive when expected and I advised them to start calling the various bus stations on the route to see if it could be located. You see Greyhound freight goes as second priority to passenger's luggage and if a bus is boarded at some down the line station and they need the space the freight is removed and awaits the next bus with space. Worse, there is no tracking in Greyhound freight and they don't usually answer the phone when you try to find out. So with this knowledge and the threat of not having a model for the event they started calling. I believe they made something like 50 calls but found the box in Dallas. It seems there had been a bad snow fall in Denver, the original route and the box had been re-routed. By the time they discovered the location there was only just enough time to get the box to Los Angeles before their arrival on the Thursday, the day before the event was scheduled to begin.

So, with all the knowledge they now possessed they made calls to each station along the route to explain their problem. Fortunately they did because the box was removed from the bus in El Paso but they talked them into replacing it, and so on down the line until it arrived in LA at seven a.m. on the Thursday. They flew into Los Angeles arriving at two p.m. and we rendezvoused at the bus station at about five. Here is the team carrying the box to my van.



The next task was to assemble the model and prepare for the next day's events: A scored project briefing in the morning and tech inspection in the early afternoon.





Here are the University teams entered in the Standard Class. Many of them repeat successful competitors.

|  |  |  |
|--|--|--|
| 001 Ecole Polytechnique De Montreal        | 003 Ecole De Technologie Superieure      | 008 Polish Air Force Academy in Dyblin   |
| 002 Politechnika Poznanska                 | 005 Ecole National D'Aerotechnique       | 010 ITESM Campus Toluca                  |
| 011 Univ of Windsor                        | 013 Universite Laval                     | 015 Widener Univ                         |
| 012 Dayananda Sagar College of Engineering | 014 Union College                        | 016 Kalinga Institute of Industrial Tech |
| 017 Universidad Autonoma de Ciudad Juarez  | 019 Vellore Institute of Technology      | 021 Kansas State Univ                    |
| 018 Virginia Tech                          | 020 Univ of Calif Davis                  | 022 Northern Arizona Univ                |
| 023 Concordia University                   | 025 M.S. Ramaiah Institute of Technology | 027 Univ of Hawaii Manoa                 |
| 024 Cetys Universidad                      | 026 College of New Jersey                | 029 PES Institute of Technology          |
| 030 Univ of Akron                          | 033 Colorado School of Mines             | 035 Univ of Wisconsin Platteville        |
| 032 Anadolu Universitesi                   | 034 Alexandria Univ                      | 037 Warsaw University of Technology      |
| 039 National Institute of Tech Jamshedpur  | 040 Univ of Calgary                      | 041 Northern Illinois Univ               |

The national breakdown was;

|        |    |
|--------|----|
| USA    | 14 |
| Canada | 8  |
| India  | 6  |
| Poland | 4  |
| Mexico | 3  |
| Turkey | 1  |
| Egypt  | 1  |

And, walking around the hotel it was beginning to look like those magnificent men and their flying machines, although there were quite a few women engineers too.

The teams had all submitted design reports on their designs and these were scored by the judges who then received a briefing from each team and that too was scored. Our Widener team ran a little over time and received a mark down but otherwise they thought they had done well.

The next step was the technical inspection for conforming to the rules and safety. This was performed in the hotel ballroom which was a sea of models and competitors.



Having passed this test the team thought they should get some photos in the lush gardens in the hotel grounds.





And here is one for the reports!



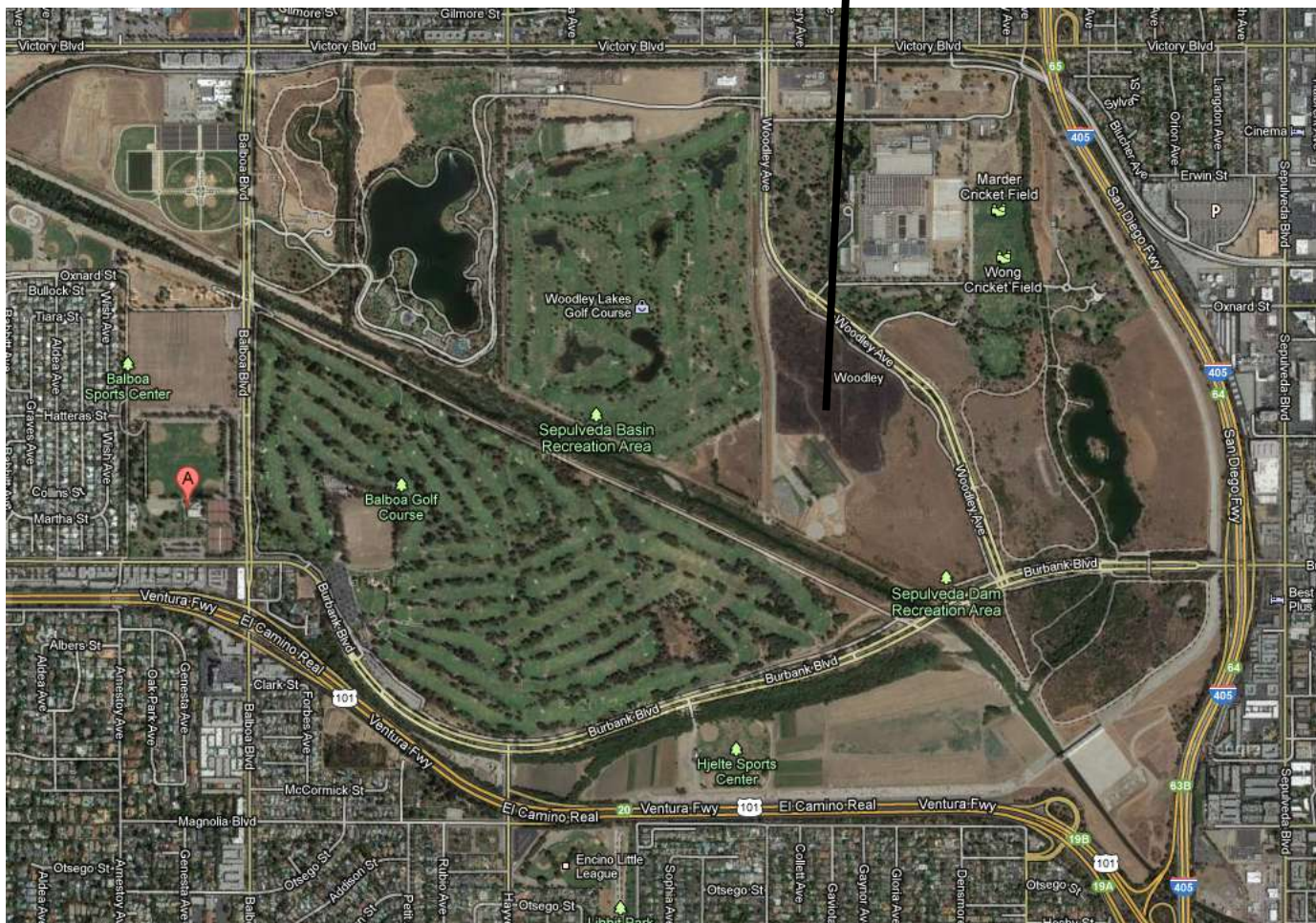
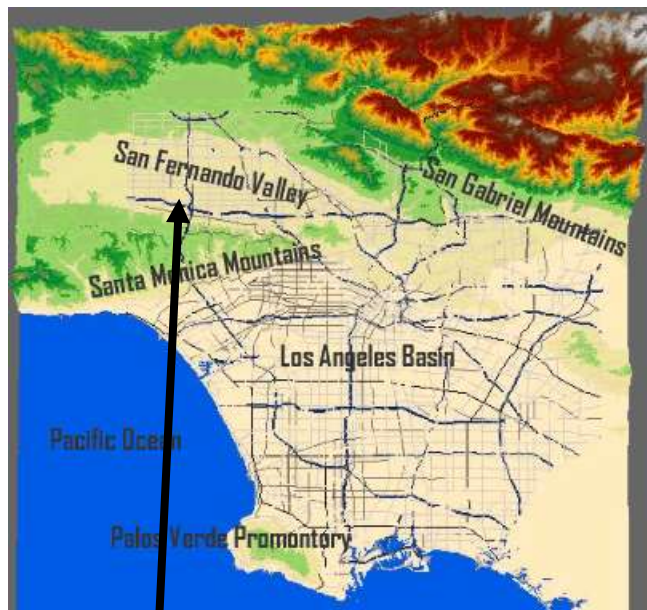
But now it was time to get serious as the model really had not been flown in good conditions and the handling wrung out. Besides, there was a new pilot to find and fuel to be found too. So off to Apollo Field, but first a little Los Angeles geography and its significance to model airplane flying.



Los Angeles and its surrounding communities lie between a series of mountain ranges and of course about the Pacific Ocean. The northern Pacific Ocean experiences a vast clockwise circulation called the Alaskan Current. The US west coast is bathed by this current which is cold all the way down the coast and beyond.

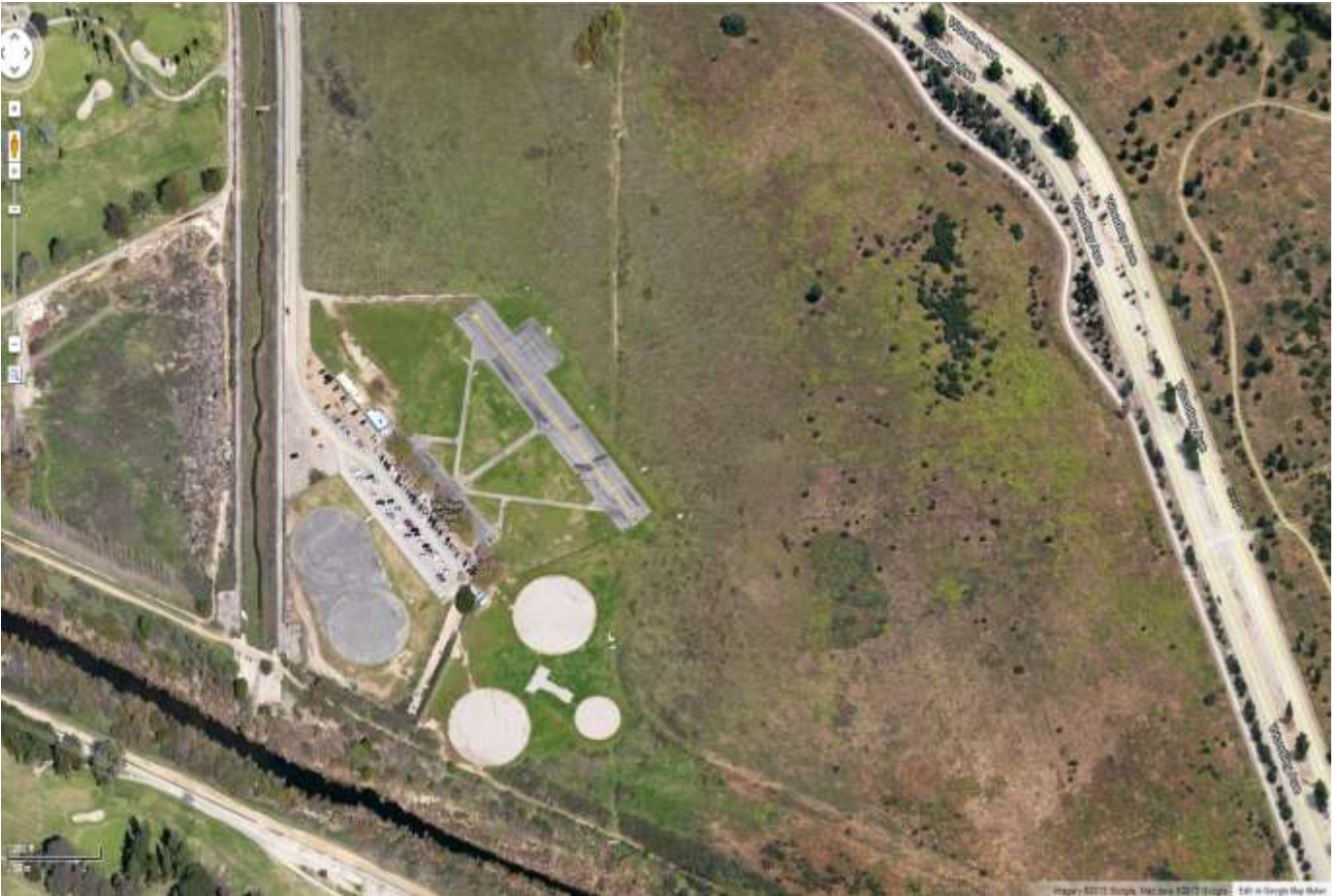
The prevailing winds are from the South West and are of course quite moist and cool. These air currents striking the mountains cause the rain and snow, which of course then flows down into the basins of Los Angeles, the San Fernando Valley and the San Gabriel Valley. Sometimes these rain flows are substantial even by East Coast standards so you will find most rivers in the Los Angeles area are channeled in concrete and dammed at strategic points. Mountain flows are something to see.

So what you say? Well, Apollo Field and a wide swath of parkland, golf courses, riding paths and duck ponds are all contained in the San Fernando catchment at the Sepulveda Dam. The area behind it is Balboa Park. Yes, on rare occasions the area is flooded, but when it is not the area is a leisure paradise, including RC and U/C model airplane flying.



Apollo Field is a county park open to all but it is also the home of the Valley Flyers, a club of 700 members they claim to be the biggest in the World. They told us an average week sees 1500 flights or flyers, don't remember which. Anyway, they are the host club and when we at last went to the field the first things the team needed was fuel and a pilot. We had previously arranged for a pilot when I did my turn on the SAM stand at the AMA Expo in Ontario.





But before leaving Pennsylvania the team was told that this person, who also happened to be the club President, was off on a business trip for Friday and would not be available. So the team approached the first person who walked by wearing a Valley Flyers shirt. It turned out to be the President's son, a very experienced pilot who had flown the SAE Aero planes for the last four events. So we were set, or so we thought.



Running through the controls the team found the throttle was not following the commands properly. This was experienced during one of the Bridgeport tests but had not come up since. After about an hour of fiddling it was decided to replace the servo and that did the trick. It was one of those Hitec micro servos mounted right behind the engine so I imagine the vibration damaged the feedback potentiometer. But it worked perfectly for the rest of the flights. So nothing now held us back from a test flight, well, maybe it was getting a bit dark as the sun was about to set.



The first flight went very well although the performance was down. But the control seemed adequate as the pilot made a smooth takeoff, turn downwind and then turn to a smooth landing. A second flight was made with a different propeller which had indicated superior performance in a prior analysis. In the event the pilot was barely able to complete the circuit but made a satisfactory landing without damaging the model. See a video of the flight here; [http://www.youtube.com/watch?v=TNxFwz6hnME&feature=youtu\\_gdata](http://www.youtube.com/watch?v=TNxFwz6hnME&feature=youtu_gdata).

Subsequent engine run indicated the new engine was down 800 rpm over the old one used for all the testing to date. The evening's task was to change out the OS engine for the new Magnum and balance the model laterally; a problem discovered when the pilot asked the team to check it.

Saturday morning the team made the first official flight, an empty weight flight for a bonus score. Flying at this weight had never been attempted before so there was a degree of concern. Then the engine, the old one which had been test run earlier today, refused to start.

Each team is allowed just five minutes from the call to fly to execute the flight. The model was pulled off the line and the plug changed. That did the trick as it fired and ran ok. But then again, back in line with time running out it refused to start again. I couldn't watch!

But fire it did and our pilot did an outstanding job of flying the circuit all the while handling a very sensitive pitch control, or was it instability?

However, the old engine did not live up to its Bridgeport power taching at the same rpm as the new motor yesterday; not good for high weight flights. Bob, the engine man decided to do some diagnostics before the next flight.

The engine test produced the same results as previous day; about 1000 rpm down on the Bridgeport tests.





So the decision was to make the next flight with the 14 x 6 prop and 15 lb of payload.

The flight went perfectly with takeoff at about half distance, a good climb and excellent landing. The pilot really likes this plane. He said he hopes he doesn't break it.







Post flight technical inspection includes weighing the payload.



At this time results were posted and the Widener team found itself in eight place. The contest was progressing smoothly to the point that a fourth round was called precipitating a long debate among the team members and the pilot as to what payload should be tried. The last flight was made with power to spare so a higher payload seemed possible, but the scoring consists of both payload and reliability, which is a significant multiplier on the payload score.



In the end the decision was to go for more payload as the last flight seemed to indicate some more performance margin. Unfortunately it was a step too far as there was insufficient power to climb so the pilot set it down just off the runway with minimal damage which is easily repaired tonight with the spares on hand.

Here are the four flights attempted Saturday;

| Saturday Flights |            |
|------------------|------------|
| Result           | Payload lb |
| satisfied        | 0          |
| satisfied        | 14.5       |
| satisfied        | 19.9       |
| Failed           | 24.5       |

Saturday night the model was repaired with the spares on hand. It was a bolt on affair. Two additional flights were expected on Sunday when flying is scheduled to be completed by noon with the awards ceremony following.

The organizers provided score sheets shortly after each round so the team leader developed a spread sheet to analyze the competition's performance from which he could evaluate various strategies for the last two flights. Two things count; the payload and reliability, or % flights successfully completed. This latter factor was quite big so the decision to go for it on payload had a considerable downside.

Some engine tweaking and testing resulted in another 300 rpm and the wind was less so the

The team thought they could fly with a payload slightly less than that with which they failed on Saturday

Unfortunately it was also too heavy and had insufficient power to climb. It drifted off the runway and the pilot used full control authority to bring it back and set down on the runway only slightly damaging the landing gear.

The team made the repairs and again switched back to the OS 61 engine, the one that gave the decent results in Bridgeport. A payload of 21lb, slightly greater than the highest successful flight was selected for the final flight.

Here is the video of the flight on YouTube; <http://youtu.be/VQZXsillifs>

The award ceremony was complete with the Widener Team in twelfth place out of 37 entries in the Standard Class. They were fifth amongst US teams. See the results below.

The highest weight we flew was 21 lb. The top three teams lifted more than 35 lb, so that is the mark for next year's team. It can be done! There are many lessons learned that will be transmitted to the 2013/14 team.

Here is the winning model from the Polish team The Warsaw University of Technology.



And here is the third place finisher from Kansas State University.



## Results

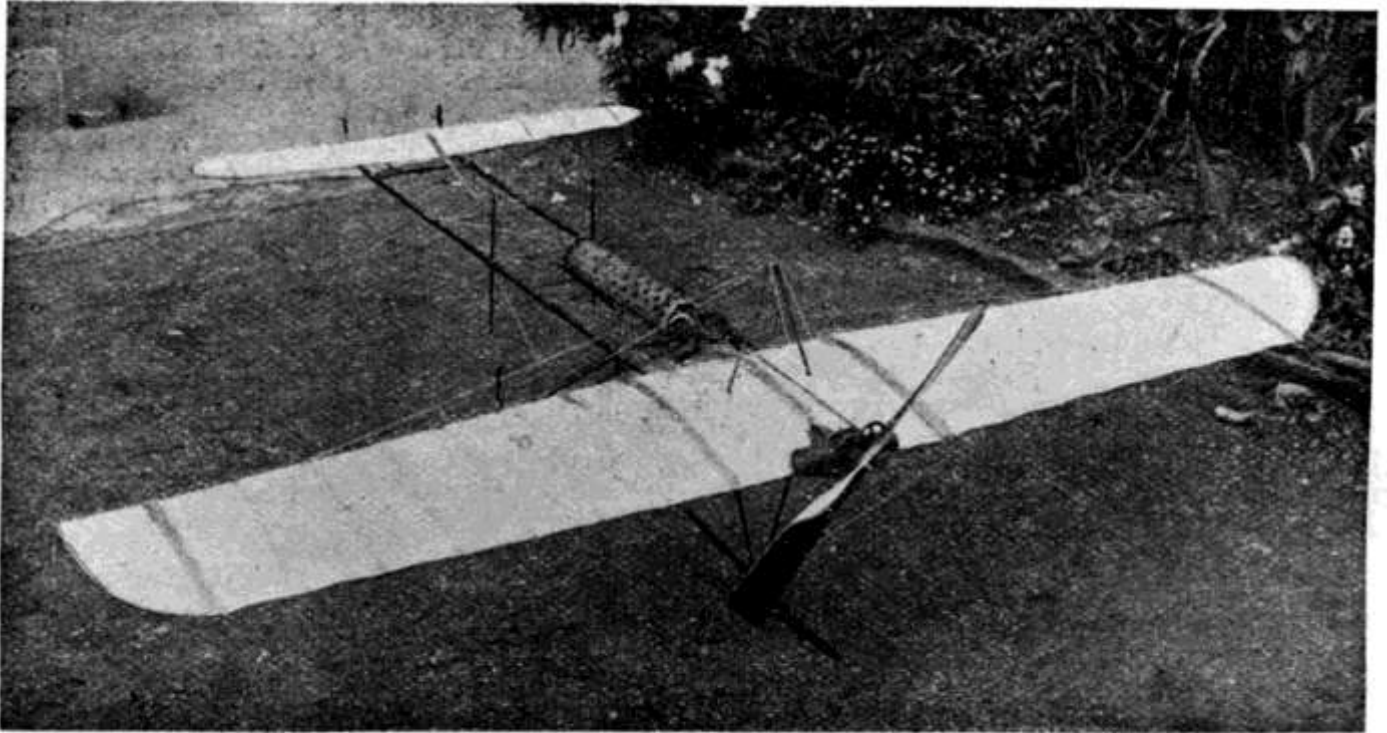
| Pos | No. | School                                 |               | Design  | Preso   | Flight   | Penalty  |         | Overall  |
|-----|-----|--|---------------|---------|---------|----------|----------|---------|----------|
| 1   | 037 | Warsaw University of Technology        | Poland        | 47.9333 | 43.4167 | 167.7857 | - 0.0000 | 100.00% | 295.8036 |
| 2   | 030 | Univ of Akron                          | United States | 46.1433 | 44.5000 | 153.4138 | - 0.0000 | 50.00%  | 258.1425 |
| 3   | 021 | Kansas State Univ                      | United States | 45.7500 | 45.8333 | 137.9950 | - 0.0000 | 83.33%  | 255.6099 |
| 4   | 003 | Ecole De Technologie Superieure        | Canada        | 45.2333 | 46.1000 | 143.7434 | - 0.0000 | 66.67%  | 255.3276 |
| 5   | 002 | Politechnika Poznanska                 | Poland        | 39.4833 | 44.1500 | 151.8198 | - 0.0000 | 50.00%  | 249.4986 |
| 6   | 008 | Polish Air Force Academy in Deblin     | Poland        | 41.5183 | 40.0000 | 145.8622 | - 5.0000 | 83.33%  | 248.7227 |
| 7   | 026 | College of New Jersey                  | United States | 42.0667 | 46.5000 | 100.0000 | - 0.0000 | 100.00% | 215.0667 |
| 8   | 014 | Union College                          | United States | 41.7167 | 41.8333 | 105.6000 | - 0.0000 | 83.33%  | 211.6724 |
| 9   | 005 | Ecole National D'Aerotechnique         | Canada        | 45.5000 | 46.8333 | 72.8000  | - 0.0000 | 83.33%  | 184.1026 |
| 10  | 023 | Concordia University                   | Canada        | 29.4667 | 27.4000 | 105.1997 | - 0.0000 | 66.67%  | 179.7473 |
| 11  | 024 | Cetys Universidad                      | Mexico        | 40.4783 | 40.9000 | 84.3865  | - 6.0000 | 83.33%  | 179.3393 |
| 12  | 015 | Widener Univ                           | United States | 39.2333 | 39.8333 | 84.0000  | - 0.0000 | 66.67%  | 179.3341 |
| 13  | 027 | Univ of Hawaii - Manoa                 | United States | 42.6333 | 43.8333 | 73.6000  | - 0.0000 | 66.67%  | 175.6407 |
| 14  | 022 | Northern Arizona Univ                  | United States | 36.9500 | 47.3333 | 73.2081  | - 0.0000 | 66.67%  | 173.0393 |
| 15  | 011 | Univ of Windsor                        | Canada        | 34.4583 | 41.8667 | 79.6000  | - 0.0000 | 50.00%  | 168.1650 |
| 16  | 013 | Universite Laval                       | Canada        | 41.5400 | 45.1667 | 62.0000  | - 0.0000 | 66.67%  | 163.5073 |
| 17  | 010 | ITESM - Campus Toluca                  | Mexico        | 37.3500 | 37.8333 | 52.8000  | - 5.0000 | 100.00% | 141.6533 |
| 18  | 025 | M. S. Ramaiah Institute of Technology  | India         | 38.6167 | 37.0000 | 31.6000  | - 0.0000 | 66.67%  | 109.3236 |
| 19  | 039 | National Institute of Tech Jamshedpur  | India         | 40.3267 | 35.9167 | 20.0000  | - 0.0000 | 33.33%  | 105.7431 |
| 20  | 016 | Kalinga Institute of Industrial Tech   | India         | 31.0500 | 26.3333 | 51.2000  | - 8.0000 | 50.00%  | 101.6633 |
| 21  | 032 | Anadolu Universitesi                   | Turkey        | 37.1000 | 30.1667 | 24.4000  | - 0.0000 | 33.33%  | 101.0930 |
| 22  | 035 | Univ of Wisconsin - Platteville        | United States | 36.5500 | 22.5000 | 40.0000  | - 0.0000 | 50.00%  | 100.0500 |
| 23  | 017 | Universidad Autonoma de Ciudad Juarez  | Mexico        | 40.1667 | 27.1667 | 30.8000  | - 2.0000 | 16.67%  | 94.4536  |
| 24  | 018 | Virginia Tech                          | United States | 46.5500 | 46.5250 | 0.0000   | - 2.0000 | 0.00%   | 93.0750  |
| 25  | 012 | Dayananda Sagar College of Engineering | India         | 36.2417 | 38.7500 | 18.4000  | - 2.0000 | 33.33%  | 91.1182  |
| 26  | 001 | Ecole Polytechnique De Montreal        | Canada        | 41.9000 | 42.7167 | 0.0000   | - 0.0000 | 0.00%   | 84.6167  |
| 27  | 034 | Alexandria Univ                        | Egypt         | 31.0833 | 31.8333 | 18.0000  | - 6.0000 | 33.33%  | 84.5498  |
| 28  | 029 | PES Institute of Technology            | India         | 40.3933 | 43.6667 | 0.0000   | - 0.0000 | 0.00%   | 84.0600  |
| 29  | 020 | Univ of Calif - Davis                  | United States | 33.7800 | 47.1667 | 0.0000   | - 0.0000 | 0.00%   | 80.9467  |
| 30  | 019 | Vellore Institute of Technology        | India         | 43.3067 | 36.8333 | 0.0000   | - 0.0000 | 0.00%   | 80.1400  |
| 31  | 033 | Colorado School of Mines               | United States | 37.7500 | 31.5000 | 0.0000   | - 3.0000 | 0.00%   | 69.2500  |
| 32  | 040 | Univ of Calgary                        | Canada        | 26.1100 | 14.1667 | 0.0000   | - 0.0000 | 0.00%   | 40.2767  |
| 33  | 036 | Stevens Inst of Tech                   | United States | 30.0467 | 0.0000  | 0.0000   | - 0.0000 | 0.00%   | 30.0467  |
| 34  | 041 | Northern Illinois Univ                 | United States | 17.5167 | 0.0000  | 0.0000   | - 5.0000 | 0.00%   | 17.5167  |
| 35  | 028 | US Military Academy                    | United States | 0.0000  | 0.0000  | 0.0000   | - 0.0000 | 0.00%   | 0.0000   |
| 36  | 031 | Univ of Alberta                        | Canada        | 0.0000  | 0.0000  | 0.0000   | - 0.0000 | 0.00%   | 0.0000   |
| 37  | 038 | Rzeszow University of Technology       | Poland        | 0.0000  | 0.0000  | 0.0000   | - 0.0000 | 0.00%   | 0.0000   |



### ***More on Steam***

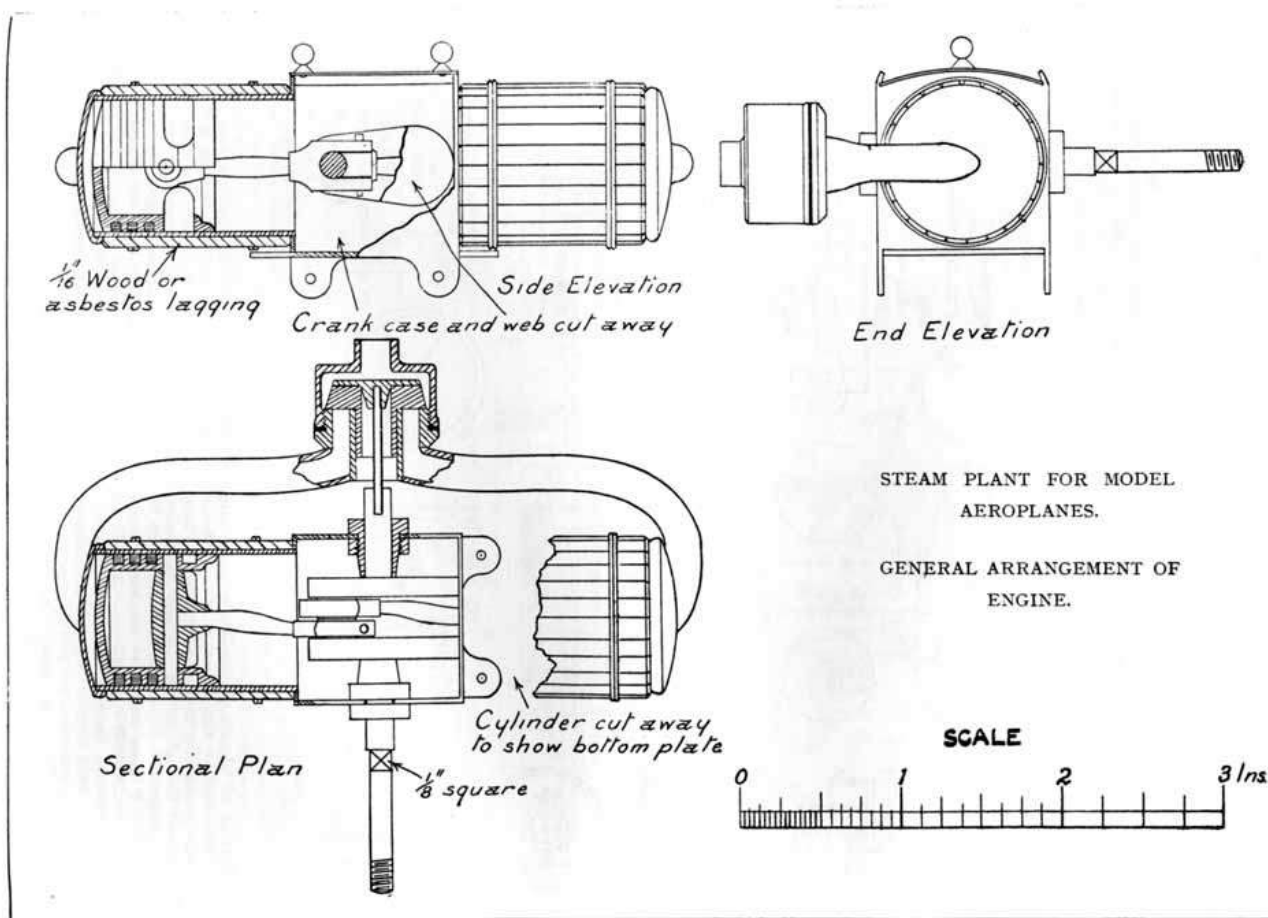
Following on from club member Murray Wilson's piece on steam powered airplanes here is some more information on steam powered models.

I discovered on a chat group this picture of H H Grove's 1913 steam powered airplane. Apparently someone found a similar engine to the one Grove used. This man is still remembered in UK for his remarkable series of Flash Steam powered model aircraft from around 1910 to the 1930's

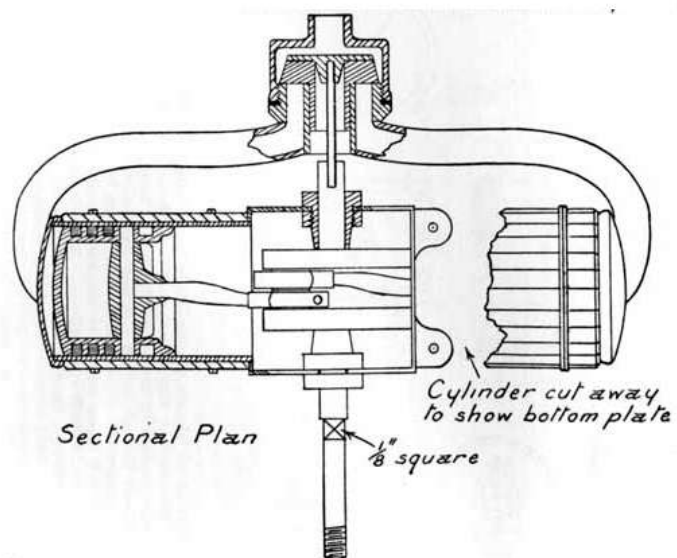


V I E W   O F   M O D E L   M O N O P L A N E   F I T T E D   W I T H   S T E A M   P L A N T .





Groves's steam engine

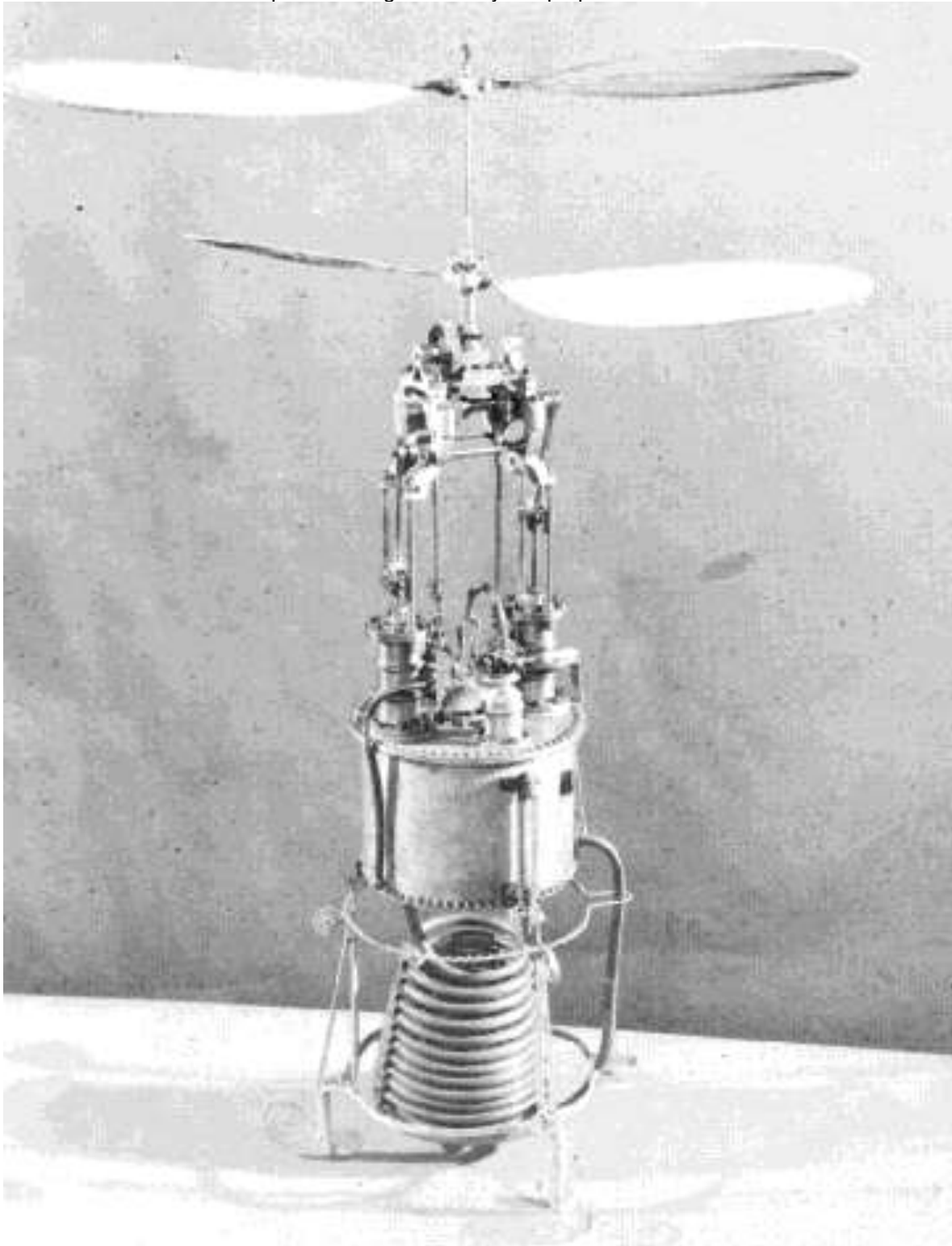


More can be found on this subject here; <http://www.flysteam.co.uk/index.htm>



But the truly astonishing find is this steam powered helicopter model.

In the early 1860s, Ponton d'Amecourt of France flew a number of small steam-powered helicopter models. He called his machines helicopteres, which is a word derived from the Greek adjective "elikoeioas" meaning spiral or winding, and the noun "pteron" meaning feather or wing -- see Wolf (1974) and Liberatore (1998). However, the novelist Jules Verne was still impressed with d'Amecourt's attempts, and in 1886 he wrote "The Clipper of the Clouds" where the hero of the novel cruised around the skies in a giant helicopterlike machine that was lifted by thirty-seven small coaxial rotors and pulled through the air by two propellers.



Dave Harding

## The Last Flyaway

Sal Taibi was a modeling legend, he passed away in December at age 92. All the modeling magazines and newsletters have included tributes to this great flyer and I was privileged to attend the Last Flyaway at his club, the Southern California Antique Model Society, at their Sal Taibi Wednesday flying session in Perris California. Modelers were encouraged to bring and fly any Sal Taibi designs and this was the result.



Even the Propstoppers got in on the reporting as our Dick Bartkowski was featured in the Old Timer's column in Model Aviation. This was the occasion Dick and I flew at the AMA Nationals in 2002. Dick was flying his Sal Taibi designed Pacer C and took the opportunity to get the great man to sign his plane.

A couple of years ago I attended a SCAMPS meeting on the occasion of Sal's 89th birthday. Of course Sal was surrounded all afternoon with well wishers and old friends but eventually I was able to sit with him and the discussion turned to Forster propellers. I must have asked him what brand of props he used because his answer was he carved his own. He then went on to tell me the story of a new club member who had the same discussion with Sal who told him that not only did he carve his own props but he could do one in half an hour. The new member as much as called Sal a liar and this stuck in Sal's mind. So at the next meeting Sal took along a freshly cut blank and proceeded to carve it to completion in the stated half hour.





Dick Bartkowski gets Sal Taibi to sign his Pacer C model.

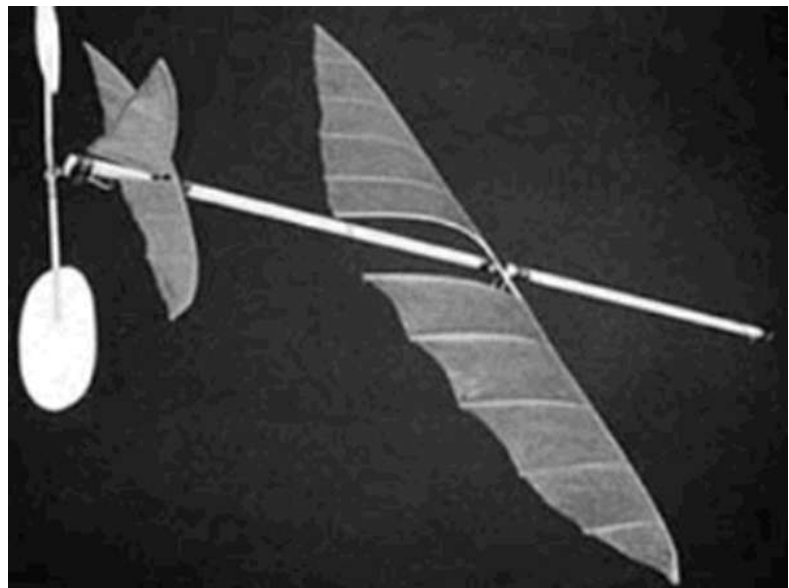


Dick Bartkowski and Ed Goretzka with their Pacer C models.

### The First Fully Successful Powered Model Airplane

The first practical powered model airplane was powered by a rubber motor. It was built by Alphonse Penaud. He was the originator of the use of twisted rubber to power model aircraft, and his 1871 model airplane, which he called the *Planophore*, was the first truly successful automatically stable flying model. He went on to design a full sized aircraft with many advanced features, but was unable to get any support for the project, and eventually committed suicide in 1880, aged 30.

Pénaud was born in Paris into a naval family, his father being an admiral in the French Navy. Because of a hip disease he walked with the aid of crutches and so was unable to attend the Naval School. At 20, he began studying aviation and joined the newly founded [\*Société Aéronautique de France\*](#). He became vice-president of the Society in 1876 and participated in the publication of the journal *L'Aéronaute*.



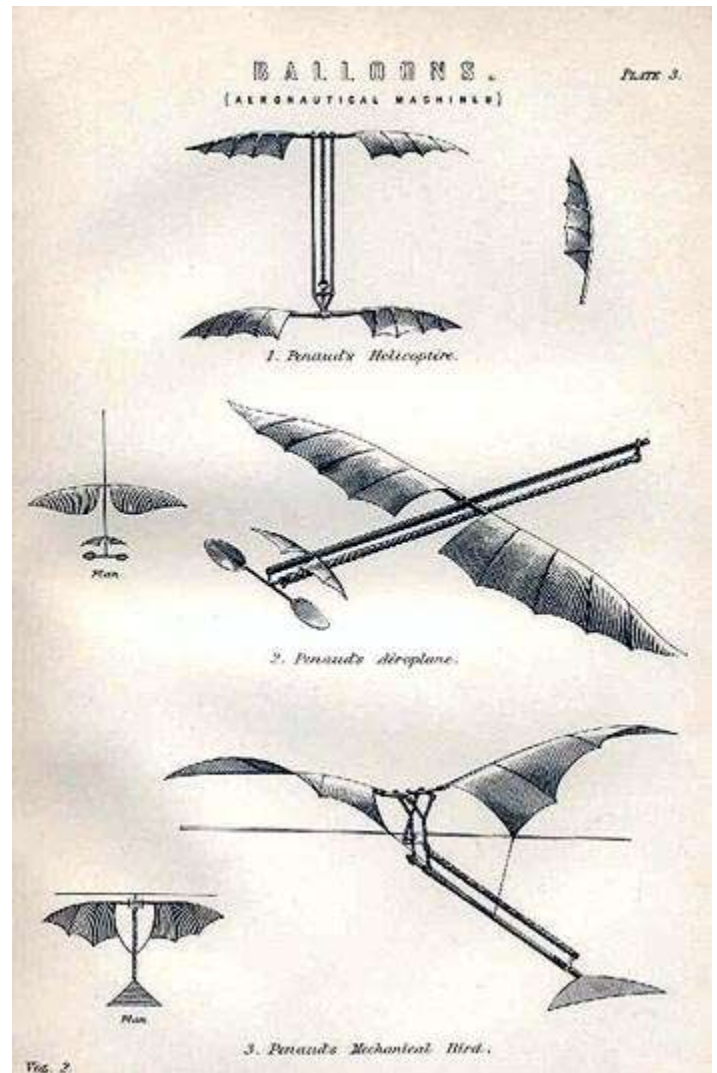
In 1870 Pénaud made the first of a series of successful model helicopters. The principle of this was not new, having been demonstrated to the French Academy of Sciences in 1784 by M. Launoy, a naturalist, and M. Bienvenu,<sup>[1]</sup> and was known by Sir George Cayley, but it was the first used of twisted rubber to power a flying model. During the early years of the development of heavier-than-air flight, many experimenters were to use this method of propulsion for experimental models, including Lawrence Hargrave and A.V. Roe.

The next year he built the *Planophore*, which was to be a major influence on early aircraft design. In addition to the use of a twisted rubber motor driving a pusher propeller, this machine introduced two important principles to practical

aeronautics: the wings were curved upwards at the tips, in effect having dihedral, and the rear-mounted horizontal stabilizer was set at a smaller angle of incidence than the wings. Both of these design features gave the planophore a degree of automatic stability.<sup>[2]</sup> The principle of dihedral had been worked out by Sir George Cayley, although at the time Pénauud was not aware of Cayley's work. The principle of a difference in the angle of incidence between the main lifting surface was worked out for the first time by Pénauud. The Planophore was successfully flown at the Tuileries Gardens in Paris in front of members of the Société Aéronautique on 18 August 1871, flying a distance of 131 feet (40 m) and staying in the air for 11 seconds.

The Planophore was 51 cm (20 in) long with a [wingspan](#) of 46 cm (18 in) and a wing area of 0.05m<sup>2</sup> (0.53 ft<sup>2</sup>) with a two-bladed propeller 20 cm (8 in) in diameter. It weighed 15.9 gm (0.56 oz), of which the rubber accounted for 4.81 gm (0.17 oz).<sup>[3]</sup>

The following year he produced a rubber-driven ornithopters. Both the helicopter and the ornithopter enjoyed some success as toys. In 1873 he started collaborating with an engineer named Gauchot, and produced two designs for full-sized aircraft, the first in 1874 and the second in 1876. The 1876 aircraft was drawn in detail for the purpose of patenting the ideas it incorporated, and had many remarkably advanced features, including electrically operated elevators, a fully enclosed cabin for the pilot, a retractable undercarriage, and the use of a pair of propellers rotating in opposite directions to eliminate the torque reaction caused by a single propeller.



### Rubber Power

Following Pénauud's successes rubber power became the dominant form of model propulsion until the 1930s and indeed still has a strong following. The Wakefield Cup is still one of the most sought after International trophy for rubber models. So as you can imagine the quest for the "best" rubber has been a beacon for the competitive enthusiast for over one hundred years. Our friend and rubber competitor Carl Bakay wrote this extensive article on the history of rubber for model airplanes. You can read it by clicking [here](#).





***A Glorious May Day to kick off the Propstoppers Flying Season***



***Photo from Phil Whittingham who is burning up the skies with his innovative home built model***