



# The Flightline



Volume 44, Issue 9    Newsletter of the Propstoppers RC Club    AMA 1042    September 2014



### President's Message

Al Cheung our VP has moved to California and has left his VP duties. So the members at the meeting asked Chuck Kime if he would fill in for the rest his time and Chuck agreed.

Both fields are in good shape and a lot of members are flying. Mike Black has the dates approved for the indoor flying at Tinicum School. As before club picks up the costs.

Try not to forget the Oct 4<sup>th</sup> picnic. It will start 3:30 and end at dark. This is our big one for the church .Please come out and put on a nice show for them. We will have a food and drinks late in the afternoon.

Election time is coming up and Nominations must be in by the October meeting. Anyone wanting to run, October is the time. See the Bylaws on the club website.

The 3/D printer may be at this meeting; don't miss it. If you have some show @ tells bring them in, we all would like to see them.

See you at the meeting.

### Agenda for September 9th Meeting At Gateway Community Church, At our CA Field site; Meeting 7pm till 8:30?

1. Show and Tell
2. Membership Report
3. Finance Report
4. Plan for October Picnic
5. Club Calendar Review

### Dick Seiwel, President

### Minutes of the Propstoppers Model Airplane Club August 12, 2014 at the Christian Academy meeting room ON A DARK AND STORMY NIGHT

Call to order took place at 19:15 by President Dick Seiwel  
10 members were present  
Treasurer's report was deferred in the absence of the treasurer  
Minutes of the July meeting as published were approved by the membership

#### Old business:

The picnic to send off Al Chung went very well.

#### New business:

The final picnic of the year will be Saturday, October 4 from 3:00 PM to dusk at the Christian Academy field in conjunction with the church group who will be visitors.

Because our Vice-President Al Chung resigned and move to California, the president asked for a volunteer to fill the vacancy. Chuck Kime agreed to serve and was accepted by all those present.

The chain on the gate has been lengthened but the lock and combination are the same. This should make it easier to open and lock the gate.

The club discussed the idea that members flying electric models should carry a fire extinguisher in their car. The members have seen several battery fires under varying circumstances. The members then went on to have a discussion of lithium batteries and their care.

Adjournment took place at 19:58

Dick Bartkowski, Secretary

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## Calendar of Events

### Club Meetings

#### Monthly Meetings

Second Tuesday of the month.

Gateway Community Church at the Christian Academy. Doors open at 7:00

**Next Meeting; 9<sup>th</sup> September**

#### 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 or Elwyn Field 10 am. Weather permitting.

Indoors at the Brookhaven Gym in bad weather 10:30-11:30 See dates allowable.

### Regular Club Flying

**At Old 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, see attached dates.

### 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/>

### Beginners

Beginners using due caution and respecting club rules may fly Apprentice or similar models without instructors at Christian Academy Field.

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

## Indoor Season Approved

Mike Black has received confirmation for the following dates for indoor flying at Tincum School Gymnasium.

Friday, November 7, 2014

Friday, December 5, 2014

Friday, January 2, 2015

Friday, February 6, 2015

Friday March 6, 2015

Dick Seiwel received confirmation for Brookhaven Gym dates;

Saturday Nov. 15 2014

Saturday Dec 20 2014

Saturday Jan 17 2015

Saturday Feb 21 2015

Saturday March 21 2015

All sessions are scheduled from 6:30 – 9:30 PM

Please remind the membership that no food or gum is allowed.

## October Picnic with the Gateway Church Fair

On Saturday 4<sup>th</sup> October we will hold a picnic at Christian Academy field in conjunction with the Gateway Church's Fair. They have asked us to put on some displays so please be prepared to help out. We need interesting models on display and of course some outstanding flight demonstrations.

Hey, maybe Al Tamburro's Telemaster can do a candy drop for the kids. Might also carry some models or parachutes aloft for high altitude release. How about a bunch of Dave Bevan's hand launch gliders? Guess I had better get busy making the carrier.

Of course we will have the usual food etc. Let's discuss this at the monthly meeting.

## SAM 76 Propstoppers Ready for SAM Champs



Chuck Kime and Dick Bartkowski test fly their SAM contest planes in the early morning at Elwyn

## Propstoppers RC Club of Delaware County, Pennsylvania.

### Club Officers

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***The Telemaster and the Wright Brothers***





Yep, you can tie in the great granddaddy of powered flight to the iconic Telemaster; both had lousy flying qualities. Well, maybe that is not the right way to characterize the situation which goes something like this;

The Wright brothers had a goal and the setbacks seemed only to increase motivation to achieve this. As their glider concepts evolved through 1900–1902, one characteristic feature stood out that would remain common in their aircraft through to the end of the decade. They were unstable, both longitudinally and laterally. I don't believe that Wilbur had set out to do this but rather that he soon realized that to have sufficient control to fly safely at low speed and close to the ground, the aircraft had to be more maneuverable than natural stability would allow.

Wilbur had decided that a front, canard, control surface was more effective for pitch control than a rear tail and he could also use this as an attitude reference; the forward structure would also bear the brunt of the damage should the aircraft crash. For roll control he emulated the birds with a wing warping mechanism; simultaneously increasing the twist on one wing and decreasing on the other to roll the aircraft. Birds didn't turn by steering into a flat turn like a boat, but rather rolled into the turn, reorienting the wind lift into the desired direction of travel.

By the time the Wrights began their test campaign at Kitty Hawk in the autumn of 1902, they were confident that the performance was now such that they could concentrate on refining the flight control design.

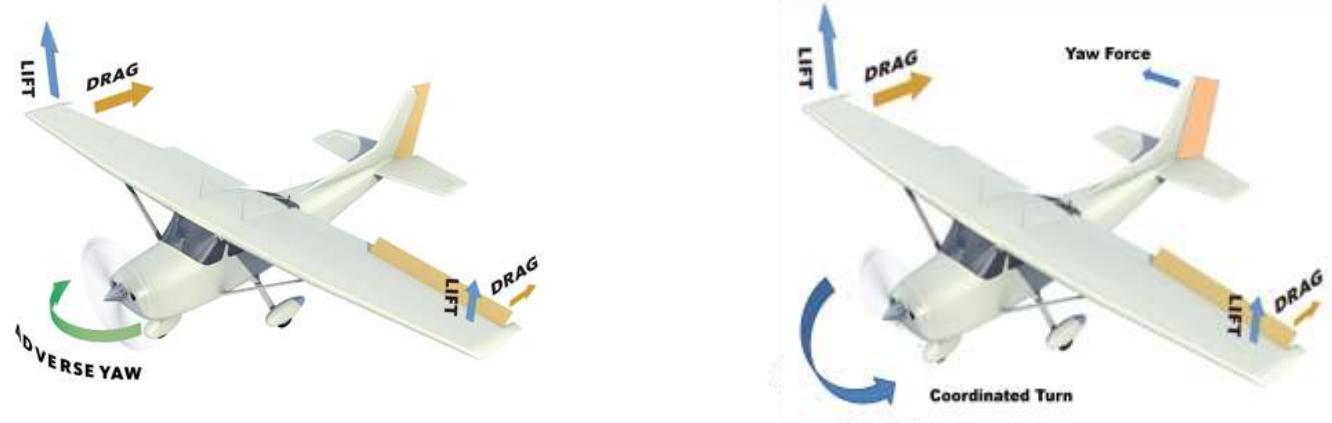


The Wright brothers launch their 1902 glider at Kitty Hawk, NC

The aircraft was unstable in pitch. The computed a time to double amplitude was about 1.8 seconds. This means if you have a pitch up of five degrees and do not correct it, in 1.8 seconds it will be at ten degrees. If you still do nothing to correct it the pitch up will reach twenty degrees, and so forth.

Flying the 1902 glider took some skill but could soon be learned. Pitch and flight path control needed constant attention but the aircraft stalled in such a way that it remained level, gently settling into the sand, as the Wrights had recorded in their log books.

They had solved the problem of lateral control with wing warping and added weathercock stability with the vertical tail, but they also discovered a negative effect of the fixed tail. A gust of wind from the port side caused the aircraft to roll to port - the rolling moment due to sideslip was positive on their aircraft. The pilot would warp the wings to correct this, rolling the aircraft level, but the increased lift on the port wing also caused an increased drag so that the port wing was dragged back and the aircraft turned to port. This **adverse yaw** effect had been present on their 1901 glider but the tail on the 1902 design seemed to make things worse in prolonged side winds. Together, the Wright brothers came up with a solution - to **link the wing warping with the tail** so that, as they rolled to the right, the tail would rotate to produce a force to the left, yawing the aircraft into the turn. This is what pilots do to coordinate turns when they have independent control of the rudder with pedals.



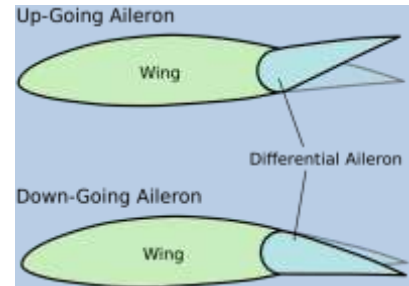
Well, the venerable Telemaster does this too, as do scale Piper Cubs and all manner of other airplanes. My West Coast eating, drinking and flying buddy recently also acquired a Telemaster and one of our OFBs advised that you need a good deal of rudder to fly this plane.

Then we got to fly the Elwyn Forest Telemaster, the one Al Tamburro flew and I then put in a tree; twice! Al found it to be a handful until he started using a good deal of rudder to control it; particularly on landing. So, the thing to do is follow the Wright brothers and mix in some rudder with aileron. This we did and it does indeed make it easier to fly like a trainer. Of course the hot shot pilots want everything separate so they can master the mix to make their magic.

Now there is another way to cure this adverse yaw with aileron control, and that is to use differential aileron settings.

You arrange the linkage, or in a computer radio the travel, to give greater up travel than down. The reason this works is generally when the aileron is deflected down it increases the drag of that side of the wing to a greater extent than the opposite aileron deflecting up. So the approach requires you to make the differential aileron throw such that the upward deflected aileron results in a greater drag increase than the downward one. This then gives you favorable yaw motion i.e. in the direction of the intended turn.

I would have made this adjustment on "Al's" Telemaster except the aileron servo installation, while being adjacent to a nicely engineered access panel, was fastened in a way that you could neither adjust the bellcrank position nor remove the servo without butchering the linkage and associated passages.



But the other beef I have with the Telemaster design is its structure.

I trained as an aircraft structures engineer and I just can't help looking at a structure and follow the load path. (Engineering 101; "sum of the forces must be zero"! Lift equals weight in level flight, etc.) Doing this with a Telemaster, despite the fact that there are many different products with different structures, is a lesson in disaster forecasting.

The first thing that grabs you is the wing mounting. On Al's version and the one depicted in the following pictures, the wing flight loads follow through two forward mounted bolts into the top of the fuselage structure. (Therefore, these of course carry all the weight in level flight and weight times maneuver g loads in turns and aerobatics). This is a 1/2 x 1/4 inch strip which in turn is fastened to a chevron shaped nose piece arranged so as to carry the load **in the cross grain direction**. The cross grain tensile strength of wood is about 70 times less than along the grain!

The aft end of the wing, which indeed carries about one quarter of the lift, is attached to the same 1/2 x 1/4 piece, which continues to the tail as the top corner of a longitudinal box structure. The flight load is taken into the edge of a modest bulkhead; through a glue joint about 1/8 x 1/2 inches or 1/16 square inch glue joint! Actually it is not quite that bad as the corners of the fuselage - wing opening contain hardwood blocks glued to this wimpy side member and the bulkhead. In both tree events the wing tore clean out taking these blocks with it. Easy to fix though!

But it doesn't end there. The whole aft fuselage is made of eight longitudinal sticks with a few uprights. No diagonals or sheeting anywhere. Worse, such bulkheads and cross members as there are don't come out to the outer surface. Therefore the covering adds practically nothing to the torsional stiffness. (See me for the comprehensive description, or talk to an old timer rubber flyer and ask how his stick fuselage with no diagonals carries the rubber motor torque. While you are at it ask him why he sometimes double covers the fuselage.) Consequently, the aft end is very soft torsionally, and not very strong either. The stab sits on a platform which is glued to these sticks as they come together at the aft end. In the "tree events" this platform tore out by splitting the sticks cross grain. Again an easy fix, but of course I have filled in some of the gaps and added some thin fiberglass cloth to increase the cross grain strength.

Examining the servos and peeking inside the wing structure when repairing the leading edge damage from wing to branch contact, I was shocked by two things; the amount of spanwise wood with all kinds of strips in the leading edge area. But the true horror was to find the spar had no shear connection nor truss members.

Some call this model a balsa overcast. Well it is, but I can tell you that most of it does nothing but add weight.







Thanks for letting me get that off my chest.

**Dave**

## Eric Hofberg's D H Vampire EDF from Hobby King

Eric has received his new Vampire kit and is readying it for first flight having incorporated some beef-ups recommended on the chat groups. Here are some pictures and below is a link to the Hobby King video of prototype testing; quite impressive.

[http://www.hobbyking.com/hobbyking/store/\\_20580\\_durafly\\_d\\_h\\_100\\_vampire\\_mk6\\_edf\\_jet\\_w\\_retracts\\_1100mm\\_pnf\\_.html](http://www.hobbyking.com/hobbyking/store/_20580_durafly_d_h_100_vampire_mk6_edf_jet_w_retracts_1100mm_pnf_.html)



The DH Vampire was the 2nd jet to enter service with the RAF and was unusual for the time in that it was powered by a single jet engine, this allowed for a small and lightweight fighter aircraft, to maximize efficiency the jet pipe was kept short, hence the distinctive twin boom tail, all of these factors helped the Vampire to become the first aircraft in RAF service to exceed 500mph. De Havilland employed some techniques from the construction of the famous Mosquito, wood was therefore used in the construction of this classic jet! The Vampire broke several records in its time and was the first jet aircraft to land on a carrier as well as being the first jet to complete a Trans-Atlantic flight; the Vampire became a huge success and served with many air forces around the world.

Cant' wait to see it fly!



### TECHNICAL PARAMETER

Lenght:	888mm
Flight weight:	1050g
Wingspan :	1100mm
Servos:	9G servos x4
Radio system:	5CH Tx and 6CH Rx
Motor:	Brushless motor 2836 Ou
ESC:	KV2700 45A
Landing gear:	Servoless retractable
Propulsion:	70mm Ducted Fan
Battery:	14.8V-2200mAH-25C LI-P



## Larry Woodward Maidens His Sea BB 42 on the water In Cape Cod

I did finally get a chance to put my Sea BB 42 on the water. You may recall it from my show and tell in April. The link below will take you to video of the maiden ROW flight on Goose Pond here on Cape Cod. The video quality is not great but you get the idea. It was blowing a bit of a breeze so you can see I had my hands full, but the plane flew well, in my humble opinion.

<https://www.wevideo.com/hub/#media/ci/228155218>





## ***Al Cheung “Flies” West***

Did we ever doubt that our flying friend would lose his enthusiasm for aviation when crossing the Rockies? His antenna must have started quivering as he set down in SFO and it has only been a couple of weeks. So far he has posted three great pictures; a nearby flying site and a quirky airport. Remember, this is the land of fruits and nuts.

But I expect it will be a few more days before his effects arrive and he finds the model boxes.



Update 1<sup>st</sup> September; Dear Friends:

My stuff has finally arrived in CA and the Twisted Hobbies planes arrived totally twisted despite my careful packing. While waiting for them to untwist, I have been checking out the local windsurfing scene and trying to catch a few sessions before the season shuts down in Sept. The launch site at the bottom of SF by is closer to my house than the flying fields. However, once the windsurfing season is over, the conditions should be ideal for flying!

I experienced one perfect calm morning last week on Lake Owasco in NY, so I recorded some float flying with the Beaver using my Headcam. The Beaver is one tough plane! It is still flying after several nose dives into the water, but the floats and wings (which I learned are hollow foam) have developed small leaks and will fill up with water when the conditions are rough.

[https://www.youtube.com/watch?v=UvBE6-STHKU&feature=youtube\\_gdata\\_player](https://www.youtube.com/watch?v=UvBE6-STHKU&feature=youtube_gdata_player)

I am missing the Propstopper breakfasts and hanging out at the flying fields.





## The “Sparker’s” Revenge or How I Learned to Love My Brown Jr.



Weather's Westerner with Aveox electric power for test flights

Getting ready for the upcoming SAM Champs at the AMA site in Muncie IN, Dick Bartkowski and I are testing our contest models. Well, he is testing and I am screwing around!

Flying at Muncie gives us the opportunity to fly our old ignition engine powered models. But it also creates the opportunity to... well, ..... fly our old ignition engine models..... whoopee, at Elwyn! Time was we couldn't fly them here at all, so the Muncie event was kind of like opening presents at Christmas.

Now the whole ignition engine thing is now a foreign language to most of us; spark plugs, points, HT coils, SAE 60 weight oil, Coleman lamp fluid (white gas without the “Green” ethanol).

So it was that on a couple of Tuesdays after breakfast flying sessions at Elwyn involved dipping my toe into this magic realm. The case in point was my 1938 Weather's Westerner model with a 1930s Brown Jr. 60 ignition engine. The Brown Jr. was the first really successful model airplane engine. It was made by Bill Brown right here in the Philadelphia area. Thousands of them were made.

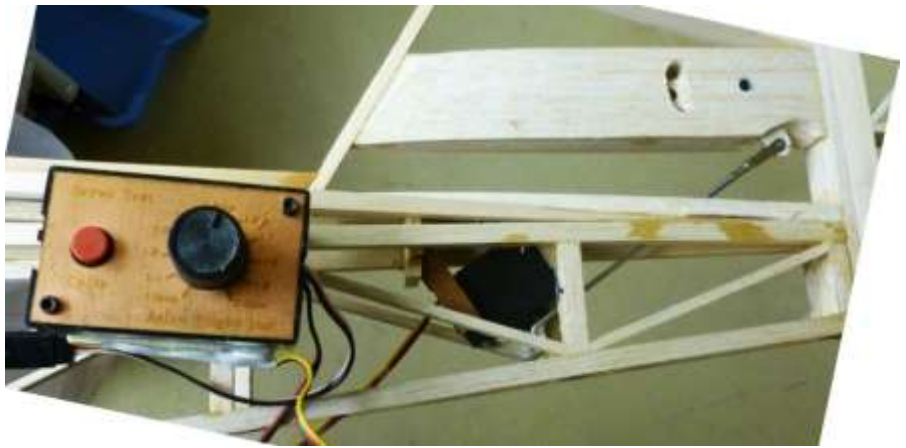
I was given my Brown by one of Sam's most successful competitors and of course I had to build a suitable airplane with which to compete at the Champs. I recently reported flying the model, with electric power, at Elwyn. I also reported on breaking-in the engine following a re-ring job in California. On that occasion I chose to run it with glow ignition as it made things simpler. However, I now needed to fly it with the full-up spark ignition system and proceeded to test fly at Elwyn. Well, at least attempt to test fly!

The initial attempt was a complete failure. There was just no spark; hence no ignition; hence no flight. It turns out that the fancy electronic ignition switch I was using did not work on Rx power with voltage greater than a four-cell NiCad! (Actually I knew this but forgot about it and tried to use my current practice of a two-cell LiFe battery). Realizing that the difference between my successful bench test and the embarrassing flight attempt was the Rx battery I proceeded to replace the battery and run out to Elwyn to try again. This time; success. After a prime the engine started on the third flick and ran steadily. Wiggle the sticks to check the controls and let her go. Whoa, it pitched over on its nose. Try again, same thing. Funny, the wheels turned smoothly and the magnificent grass was cut low, so what it happening? Oh well, try a hand launch.

So, trusty crew chief Chuck Kime began a run ready to launch when I suddenly notices the elevator (well, flying tail) had gone full down; something I did not command. Waive off and look. Sure enough the tail had gone to the end of the servo's travel, despite my limiting it for normal operation to 30%. Must be the mystery ignition interference, a malady common in the old 72 MHz radio days. But I am using a 2.4 GHz radio and most experience indicates it is immune to ignition “noise”. Curiously, the “hard over” was only in the elevator channel. If interference is penetrating the radio signal why don't the other channels show the malady?



Well, maybe it is because only the elevator channel has a very long lead between the Rx and the servo. The elevator servo is mounted in the extreme aft of the fuselage whereas the rudder servo is mounted in the wing bay and the servo connected to the surface via a long pushrod. The reason for the aft mounting lies in the tail configuration. The Westerner has a + tail where the horizontal surface is mounted part way up the fin. This makes for a complicated elevator control mechanism so my practice with such airplanes is to use an "all flying" horizontal surface plugged into a fin mounted mechanism, shown here. The Astroflight servo simulator is used to set the servo position and travel without the need for a radio setup.



Another thought was the Rx antennae were both mounted within the cabin, and the entire fuselage, save the windows and wing mount opening, are painted with silver spray paint. Could this be conductive and shielding the Rx from the Tx signal; can you scientists say "Faraday Cage"? In the big airplane world we sometimes cover the composite surfaces with a fine wire mesh to "keep out" the Radio Frequency Interference. The Great Michael Faraday, inventor of the electric motor and most things electric demonstrated the effectiveness of such schemes.

So I proceeded to move the primary antenna outside the fuselage. Furthermore #2 grandson, the one studying for his PhD at Brown (hey~ Brown on Brown!... sorry Ian) made an aluminum foil tube to cover the elevator leads from Rx to servo in an attempt to shield the leads from RF energy.

So time to try again on another fine Tuesday morning at Elwyn. Same result! This time we also tried switching the elevator and rudder channels to see if it was an Rx issue but the same result; the elevator went hard over in both conditions!

Rats, now what? Well, one thing I had neglected (because it was going to be a pain to check) was to see if I had installed a resistor in the HT lead; common practice in the 72 MHz era, but found to be unnecessary with 2.4 GHz. I could still do this, or even install one without removing it from the airplane, but as a mechanical engineer I was beginning to think about a mechanical solution. If the rudder channel was not seeing any interference, and it isn't, then if I could move the elevator servo to the wing/cabin cavity it should be safe. But this meant I would have to solve the "round the corner" pushrod mechanism configuration. So I stripped the covering from the tail area and the fuselage bottom to see what could be accomplished, and while my mind sifted various bellcrank designs together with their mounting issues that darned Telemaster slid into view. The Telemaster uses Sullivan Golden Rod tube-in-tube pushrods, and they can snake around corners. So I grabbed a piece and tried to gently bend it using my heat gun to set the geometry. Yikes, it worked. Not only did it hold the shape I wanted but the inner tube still moved smoothly. This is the solution, so in a few minutes, well, a bit longer, I managed to install the servo up front and connect it to a long balsa pushrod which in turn was fastened to the Goldenrod inner and then to the elevator mechanism in the fin.



Will it work? Back to Elwyn to find out. Tuesday update; yes it did! Whew!

Dave



## ***Google Tests Its UAVs in Australia ~ Would Be Illegal In the USA***

Google has built and tested autonomous aerial vehicles, which it believes could be used for goods deliveries. The project is being developed at Google X, the company's clandestine tech research arm, which is also responsible for its self-driving car. Project Wing has been running for two years, but was a secret until now. Google said that its long-term goal was to develop drones that could be used for disaster relief by delivering aid to isolated areas.

The prototype vehicles that the company has built have successfully been tested by delivering packages to remote farms in Queensland, Australia from neighboring properties.

Australia was selected as a test site due to what Google calls "progressive" rules about the use of drones, which are more tightly controlled in other parts of the world.

<http://www.bbc.com/news/technology-28964260>



## **Flying Models Magazine Closes after 86 Years of Continuous Publication**

The magazine was launched as [Flying Aces](#) in October 1928<sup>[1]</sup> by Periodical House, Inc.<sup>[2]</sup> It was initially published in a 7x10" format, with more than 100 pages per issue, and sold for 15 cents per copy.<sup>[3]</sup> In November 1933, the magazine moved to the so-called "slick" format — an 8½x10" format printed on glossy paper<sup>[4]</sup> and began featuring full-sized plans for [model airplanes](#) in every issue. Issue size was reduced to 74 pages.<sup>[1]</sup> In addition to adventure stories, non-fiction aviation articles and aviation news were added, as were articles related to model airplanes. The magazine's tagline became "Fiction, Model Building, Fact — Three Aviation Magazines in One."<sup>[5]</sup>

During [World War II](#) the magazine had been subtitled 'Magazine of the Flying Age'. The content focused on the war effort, with little advertising and the name changed briefly to *Flying Age* late in the war. In later years, model airplane construction features started appearing more regularly and became more and more dominant, until finally, in 1947, the magazine was renamed *Flying Models*. It was sold to [Carstens Publications](#) in 1969 which continued to publish the title without the fiction content.<sup>[6]</sup>

Flying Models was set apart from its competition as it features in-depth model construction features and new product reviews, as well as catering to specific interests within the model airplane construction hobby, such as soaring, control line, and stunt flying. The magazine also reported on the latest technology related to radio control, ducted fan, and electric flight.

Sadly, Carstens sent out a message announcing the termination of this legendary magazine. Another casualty of progress. So few people make their own airplanes anymore and what you think you need to know about ready to fly models may be found in an instant on the web. My West Coast "Flying, Eating and Drinking" buddy, Mike Myers, wrote the bimonthly Old Timers column for some years. He hadn't been paid for much of that time. Guess we now know why.

Flying Models will be missed by some.

**Dave and Wiki**

**Planes of the 2014 Toledo Weak Signals Show**

June 2014

**FLYING MODELS**

Santa Cruz Mk. III Update

Multiplex **Pilatus PC-6 Turbo Porter**

**Build the A-10 Thunderbolt II & Torquette**

**Reviews**  
Heli-Max 230Si Quadcopter  
E-flite Extra 330SC BP 3D



**Helicopter Museum RotorFest 2014**

**Friday Night Hops  
and Helicopters**

**OCTOBER 10TH  
5:30-9:30**

-Preview the Aircraft  
-Craft beers & wine tasting  
**\$25**



**Saturday**

A Tribute to the  
Pennsylvania  
National Guard -  
**Welcome Back Warriors**



**Sky Soldiers**

Dramatically Reenact  
Vietnam Rescue Missions

**The BatCopter  
& BatMobile**



**16 Jumpers!**  
US Army  
Golden Knights  
Parachute Team



**3 Airshows  
Daily**

**FAMILY  
Food & Fun**

Huey & Cobra Helicopter Rides  
(Additional Fee)

**Military Reenactments**



**ROTORFEST**  
THE ALL HELICOPTER AIR SHOW

**October 11-12, 2014  
10:00am - 4:30pm**

RAIN OR SHINE

**\$15 Adults | \$10 Under 12 | FREE Under 2**  
(admission includes entry to the museum)



In the Heartland of Helicopter Innovation

1220 American Boulevard • West Chester, PA

[www.americanhelicopter.museum](http://www.americanhelicopter.museum)



## Long Time Propstopper Dr. Charlie Storm Passes

Charley T. H. Storm, M.D. passed away peacefully surrounded by loved ones at White Horse Village on August 13, 2014. He was a long time member of the Propstoppers.

Charlie graduated from the University of Pennsylvania in 1951 and Jefferson Medical College in 1955. He served as a captain in the Army Medical Corp. and Practiced for 30 years in Chester, Pa. with Associates in Anesthesia. Charles was a member of Delaware County Field and Stream, Prop Stoppers Radio control Flying Club and Media Presbyterian Church. A service of Witness to the Resurrection will be held on September 15th at 10:00 a.m. at Media Presbyterian Church. Published in The Daily Times on Aug. 21, 2014

- See more at: [Charles T. H. Storm's Obituary on Delaware County Daily Times](#)

Charlie was a nice guy. He will be missed. **Dave**

