



# PROP WASH

June, 2010

[www.lewesrc.com](http://www.lewesrc.com)

VOLUME 55

## Hopkins Field Gets Extreme Makeover

On the weekend of May 15<sup>th</sup> and 16<sup>th</sup>, a group of Lewes RC club members got together to build new fencing and remove the older fencing. Thanks to those who could make it out to help and to Lowe's of Lewes for giving us such a great deal on the lumber and materials. Additionally, several club members lent their expertise as well as tools necessary for the job. Paul mysteriously acquired a tool that saved the weekend - an automated auger on tracks! We certainly had the right tools for the job and they made all the difference. Come out and enjoy the new look at Hopkins Field. Please note that there are plans to address the front section of tall fencing as well as the center section. What a nice improvement!



## **From the newsletter of the Silent Electric Flyers, San Diego**

### **A Lesson in How to Crash**

I recently destroyed a very nice aerobatic 49-inch Yak. Not really a great thing to do, but it happened and I hope by telling my story I can save at least one other pilot from doing the same.

I had just finished putting some very detailed cockpit work in a very nice Cermak 49-inch Yak 54 so I could enter it in to the 2010 Spring Fling Scale contest. I had earlier increased the power to 4S and had to beef up the motor mount with added carbon fiber along the top and sides to hold the now nearly 1,000 watts it could develop, so I was confident it would perform very nicely.

In full-scale aviation, we always say it takes two or three problems to make a crash, as we are trained to recover from one problem at a time. I think this story bears that axiom out. It took three distinct errors on the pilot's part to create an unrecoverable situation.

It started with my desire to fly one afternoon after I had just finished the above modifications and checked the balance and control throws in my shop. Because of all the things needing to be done, it got later and later in the day before I got out to the field. By the time I got settled in and ready for takeoff the sun was very low on the horizon, but the wind had calmed down a lot (error one).

I did my preflight and noticed that I had a little extra throw in the surfaces, but that's okay, I wanted to be sure I could recover from any attitude I got into during the trim flight (error two).

I took off and climbed out to the west, noticing I needed to adjust the elevator a little for smooth, level flight. While doing this, I let the airplane get a long ways downwind to the east (error three). As I started to turn toward me to come back to the center of the field, I over rotated due to the larger-than-needed throws of the ailerons, and due to the low sun angle I lost orientation of how far I'd banked and in my attempt to recover I must have thought I was inverted and zipped when I should have zipped.

End result was a near full-power dive into the ground instead of pulling up smartly.

So how could I have avoided this unnecessary loss of a very nice and near new airplane?

1. Don't get in a hurry to go do a flight. If it's 3:30 p.m. when you leave for the field in the winter, it will be dark in only 1.5 hours.
2. A headwind is a good thing, dead calm requires more roll out and longer takeoffs.
3. Larger surface throws are inherently bad for control. Use small, reasonable throws and check that the surfaces are in line with the wing or tail fixed surface for easier flight control.
4. Keep your situational awareness! Don't let one aspect of flying (ex. trimming) get in the way of overall flight path control. If you get too far away with an "active" model, you'll have more problems keeping it under control. →

## Crashless Flying

From *NOTAM*, Lewis Jordan, Editor

Fly RC long enough and you will experience a crash. However, some pilots seem to crash often—too often. Let's explore some of the causes of crashes and perhaps minimize crash opportunities.

**Split Second Delay Crashes:** High speed creates high loads on the plane's control surfaces and servos, causing a possible split second delay of control after a stick input. A split second delay is all that is needed when your plane is in some maneuver heading toward that ground at 100 mph (147 feet per second). Point the transmitter antenna at the airplane you can create a cone of science at your receiver, which can cause a control response delay.

**Pilot Orientation Crashes:** Another cause of crashes is a non-mechanical one: pilot orientation. If you are low and fast and lose orientation, expect a crash. Have your airplane flying level or in an up attitude while flying close to the ground.

**Distraction Crashes:** Another non-mechanical cause: distraction. If you allow yourself to be distracted, even for just a couple of seconds, you're likely to crash. If you were stung by a bee, step on what you think could be a snake, or have another critter eating your pant leg, put your plane in a series of tight loops with full up elevator, then take care of your business and your airplane will still be there when you can tend to it again, not two miles down the range. This may be overly simplistic, but you get the general idea. All pilots get distracted sooner or later. Think out in advance what you will do so your fingers will react when you do get distracted.

**Aerobatic Crashes:** Among the many maneuvers pilots enjoy, snap rolls are at the top of the list. Just be prepared for that fatal snap of a control surface during this maneuver. Pilots usually enter a snap full bore with full deflection on all control surfaces. This can load your airplane up to as much as 30 Gs, plus air drag loads. Inspect your airplane carefully after doing this violent maneuver.

**Elevator Crashes:** Let's spend some time with the elevator. This is the most important crash prevention control on your airplane. First, the elevator itself must be built from good material. Too hard and brittle is not good; too soft is not good either. In today's world, the high-quality ARFs take care of this. Use your best servo in the elevator. I don't like the standard servos on any function except the throttle.

Buy some good servos for your primary control surfaces. Next, use only strong, stiff rod linkages from servo to the control horn. Fiberglass rod systems are great for long runs. Strong, stiff wire works well for short runs. It's very important to keep the bends in the wire to a minimum. Lots of pilots use them, but I don't like the flexible Nyrod-type systems. Any movement of flex here could allow surface flutter, and also cause a split-second delay crash. The plastic clevises and control horns supplied in many kits leave a lot to be desired. Get these items from Du-Bro or Hangar 9.

Dirt and grit will weaken the plastic clevis pin very quickly, and generally they are too soft and flexible. Consider using metal or the super strong carbon fiber clevises and control horns. Metal-to-metal contact is taboo, but most metal systems have an insulator to prevent any metal-to-metal contact. Always install a rubber or nylon safety "keeper" on this and on all your clevises.

Crashes are extremely frustrating and expensive. With a better understanding of what causes crashes, we can more easily prevent them.

**Continued on page 5**

## Dumb Thumb!!!

This issue I'll talk about my most recent dumb thumb experience. Please note that while I should always have plenty of my own dumb thumbs to write about, I welcome any of yours for future issues!

I figured I'd pull out all the stops for this issue. Hopefully I can look back many years from now and realize that this was the biggest "dumb thumb" of a long flying career. I'd hate to imagine what would be worse than almost losing a finger in a prop.

Yes, you guessed right. As is usually the case, I rushed when I should have been taking my time. It's just that I had been looking forward to flying my new plane for weeks and I finally had her to the field with little wind.

Long story short, I had driven with Leslie and the girls over 5 hours after spending the weekend at my parent's house and the conditions were finally right to fly. When I arrived at Hopkins Field, Paul and Jerry, who would be helping me with my maiden, were in route. I got the plane on the stand, fueled up and checked my control surfaces. Then I made the fatal decision to start her up so that we wouldn't have to waste a lot of time when Paul and Jerry arrived. The new Saito 82 had just been broken in and I had become comfortable starting her at my parent's house and even taxied her around their yard for fun and to help break her in a little more.

This time though, instead of purring like it always did at my parents house, the Saito 82 raced upon starting and my immediate reaction was to reach for the throttle on my transmitter hanging on plane stand. Unfortunately, while reaching for the throttle on my transmitter, I reached through the prop. I managed to hit the throttle cut button on my transmitter before inspecting the damage. Leslie heard the prop hit me and yelled out that she was getting the 1<sup>st</sup> aid kit out of the car. I told her not to bother and to get the kids back in the car so that we could get to Beebe.

As you would imagine Jerry and Paul sprang to action upon hearing the news. Paul rescued my plane and then came to the ER to lend a hand with the girls and to offer his moral support. Jerry kept calling to check on my status. I can't thank them enough for helping out during this traumatic experience!

In the ER, we learned that the plastic prop had pulverized the bone and tip of my finger and that it would require surgery.

I guess it was my lucky day! Dr. Schultze, who specializes in hand, burn and microsurgery out of Lewes was not on call but ended up coming in anyway. He educated us on my options and gave Leslie and me a chance to make a decision. It was a no brainer – try to keep the entire finger if possible. We could always take the tip off later if things didn't go well. Good decision – as I was in good hands with Dr. Schultze.

Five weeks and several thousands of dollars later; the finger is looking pretty good. I'll see Dr. Schultze again on the 8<sup>th</sup> of June but I'm already encouraged to see a nail beginning to grow on the nail bed that he rebuilt. He pulled together the tissue surrounding the pit and then laid down a strip of nail tissue taken from the neighboring ring finger. The tip of the bone had a gash taken out of it and our hope is that it will also grow back.

It was also my good fortune that the Hobby Stop had given me the wrong prop when I picked up the engine. I had ordered a 14 x 4 wide prop and without me realizing, they had given me a 13x4 narrow prop. There is now doubt that the damage would have been much worse with the 14x4. Thank you GOD!

I hope my experience reminds us all of the risks involved with our hobby as well as the importance of taking our time and being extremely careful around a turning prop regardless of its size. Had I waited five minutes for Jerry and Paul to get to the field it's likely I would be writing about plane carnage instead of my own! Be safe!!!

*(Below: a picture taken during surgery by Dr. Schultze).*

I asked Dr. Schultz whose finger this was when he showed it to me after surgery. I couldn't imagine it being mine. I thought he was using the picture for demonstration purposes only. I was wrong.



## Crashless Flying (continued from page 3)

**Servo Damage Crashes:** Servos can be unknowingly damaged by a hard landing or by bumping a control surface while loading the airplane into a car. What happens is the servo's gears get cracked but it continues to operate until subjected to flying loads, then the gears break. After a hard landing or a bump, and from time to time, check your servos by applying slight hand pressure to the control surfaces while operating the servo. If it takes hand pressure, it will usually stand up to flying loads.

**Take-off Stalls:** The airplane will very likely turn to the left during take-off. One method to prevent this type of crash is a high-speed takeoff run and a shallow climb after liftoff until maximum climbing speed is reached. Use rudder to maintain direction with very careful use of ailerons to stay level. If the engine quits on takeoff, don't try to turn back to the runway. Keep the airplane heading into the wind and make your landing.

**Landing Turn Stalls:** A very common pilot error occurs while setting up a landing approach and performing too steep a turn from downwind to final. Airplanes stall at a much higher speed in a bank, and a steep bank into the wind will quickly slow the airplane and cause it to stall. Keeping turns shallow on your approach will help prevent this type of stall, and using rudder to turn will also help keep the turns shallow and reduce the additional drag of the ailerons. This becomes especially critical if landing dead stick.

Routinely check and tighten motor and engine mounting screws. Carefully inspect and test all flying surfaces. Pull on them to make sure the hinges are secure. Q

## Tips & Tricks

### Gluing on Canopies

Before gluing on your airplane's canopy, put a small hole in some obscure place to allow air circulation under the canopy. This will keep your canopy from popping off in the summer when the air inside expands or from collapsing in the winter when the air shrinks.

### Soldering Wires

Unless you have nerves of steel, it's difficult to hold two wires still while you solder them together, even if one is clamped to your workbench. An easy solution to this problem is to glue two wooden clothespins to a wooden base, about an inch apart. Now, slip the wires to be soldered into the clamping part of the clothespins, and they will be held together without jiggling. You can put the clothespins side by side rather than nose to nose. This keeps them from interfering with longer wires. You will probably have to sand the gripping part to create a larger grip area.

—both from the Beachmasters RC Club newsletter, Ocean Park, Washington ✈

## A Jet Flies at Hopkins Field

Jerry's friend really does exist ☺

Bet you wish you could have been there!

Me too!!!

Maybe Jerry can get him to visit us again ☺



## Free Flight at Ocean View Homecoming

On Saturday, May 15<sup>th</sup>, the town of Ocean View had its first Homecoming in many, many years. One of the activities during the day's event was a free flight build and contest. Club members Paul Esposito and John (Jack) Lindner facilitated the hour long event. To begin, Paul taught approximately 50 children the different parts of the airplane, demonstrated how it was put together, and showed them how to wind it up and fly the plane. Next, it was their turn to build their own planes! Kit boxes were given out and Paul and Jack moved around to each table helping the children prepare their planes. You had to see it to believe it! Once all the 17" balsa kit planes were built, the children were instructed to test fly their planes. What a sight to see so many planes flying every which way. The wind was not cooperating but that didn't stop everyone from having a blast. The children were instructed to get their planes and themselves to the starting line for the first competition. The longest distance contest was followed by the closest to the mark contest. In both competitions the top three pilots earned a prize. Thanks to Paul and Jack for doing such an awesome job promoting our hobby to the next generation of children!!! I think Paul was just getting started and by the end of the day he had helped dig over 30 holes for the new fencing. One of a kind!



## Paul Knapik and Friends Build Gee Bee

According to Paul, she is almost ready and should be in the air within a matter of weeks. I hope to be in the gallery! Here are some pictures of the amazing build. Paul Knapik is friends with designer Henry Haffke who has designed, built and flown more Gee Bee type scale models than anyone else. He has a great book about the Gee Bees and at one point, Henry became an honorary family member of the famous Granvilles, who built the full-size Gee Bee racers. Henry was often referred to as the "5th Granville Brother".



by Ron Peterka, NASA no. 869

With the worldwide fame of the Granville Brothers "Gee Bee" racing aircraft, it came as somewhat of a shock to me when I learned that the total production of all models of Gee Bee aircraft came to just twenty two aircraft. Nine of these were biplanes and the next most numerous were the eight single place model D and/or E "Sportsters".

In 1930 Lowell Bayles, a well known race pilot, Zantford (Granny) Granville, and Bob Hall got together enough money to begin construction of a racer to compete in the All American Air Derby, a 5,541 mile cross country air race sponsored by the American Cirrus Engine Company. The twenty five foot span black and white with orange pin striping Gee Bee X Sportster aircraft (NR49V) was designed around an inverted, supercharged, four cylinder, Cirrus engine rated at 110 HP. Length was seventeen feet four inches overall. With the small, high-performance engine, the plane was capable of a 145 MPH top speed.

Bayles flew the little craft to a second place finish in the Derby and shared a \$7,000 prize with the Granvilles. The Gee Bee racing dynasty had been born.

With the Derby racing success fresh in their minds, the Gee Bee factory proposed a line of Sportsters powered with a choice of in-line engines ranging from a 95 HP Menasco, to a 135 HP Fairchild 6/390 with speeds up to 160 MPH. Eventually, installation of radial engines was planned. The early aircraft used unfaired 20x9 balloon type tires in a fixed strut landing gear while later versions used a hydraulic strut in a streamlined fairing. No flaps were used.

Two Boston businessmen, Harold Moon and George Rand, placed orders for the first two production Sportsters. Moon's tan and dark brown with red pin striping copy of the X model (NR854Y) was first to be completed and utilized a Cirrus Hi-Drive engine. Rand's red and white with black pin striping aircraft (NR855Y) was next and was powered with a Menasco C-4 engine instead of the Cirrus. Since it had a different engine it was designated a model C (the early biplanes were models A and B). Radial engine versions were designated model 'E'.

Another blue and cream with red pin striping Sportster (NC11043) was built, and to facilitate requirements for getting an Approved Type Certificate (ATC), was designated a model D. This aircraft appears to be the only one actually built as a D model and included a fully faired hydraulically sprung landing gear with an enlarged rudder and vertical fin. The D model aircraft was sold to a Massachusetts car dealer named Charlie Pain. George.

## New Planes!

Paul and John getting Paul's Pitts biplane ready for takeoff!

Send me pictures of your new birds for the next issue of Prop Wash☺



## Upcoming Events:

**Web Site:** Mike Ludden is updating our club's web site! Keep your eyes out and please send him any pictures and event information you may have.

### June Meeting:

**6/8/2010 6:00 PM**

Legion Hall on Rt. 24

**Flying of Paul Knapik's Gee Bee!**  
TBA

**Jun 4-5-6th** Air Show with Thunder Birds Ocean City, MD

**Jun 12-13th** Dover Air Force Base Air Show with the Thunder Birds

## Warbirds Over Delaware (July 7-10)



**President:** Jerry Springer – 690-6173  
**Secretary:** Dawson Gillaspay – 945-0329  
**Field Marshal:** Paul Esposito – 228-8597  
**Events:** Alan Walker, 684-0523

**Safety Officers:** Paul Knapik – 947-2627 and Jim Halpan – 684-4459

**Vice-President:** John Pulli – 945-8242  
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**Editor:** Garrett Lydic – 381-9220  
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