



Flying for Fun in Northern Virginia! www.flyingclub1.org

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November 2013



FROM THE FRONT SEAT

Steve Beste, President

Scary propeller accident. Don Sheehan's propeller fell off last month, scaring the bejesus out of him. Fortunately, no one was hurt, but that was just dumb luck. It could have come off in flight or it could have flown off while taxiing at the Airpark, killing someone. I hope it scares all of you into checking your own propellers. Here's the story.

Don has an Astra trike with an HKS engine that he keeps at the Airpark. He was warming it up when the propeller and hub suddenly fell off into the grass. On inspection, he found that all six propeller bolts were corroded and had sheared off at the engine flange. (See picture.)

The key word in that statement is *sheared*. Propeller bolts should not be subjected to shear forces. Their job is to squeeze the propeller hub tightly to the engine flange. The torque of the engine is then carried by friction between the hub and flange, not by the bolts. That all changes if the bolts get loose. Then the engine torque goes through the

bolts, which are not designed for that stress. That's particularly true of this engine. With the HKS (and perhaps your engine?) the flange is threaded. The bolts screw directly into the flange. Thus, if the bolts *are* in shear (which they shouldn't be), they're being stressed at their weakest point, the threads. That's exactly where Don's bolts broke, as you can see here.



What was the cause? We don't know for sure, but we know some things that were *not* the cause.

- It was not the corroded bolts. Yes, the bolts were badly corroded and should have been replaced. But the bolts should never have been subjected to shear forces in the first place. Corrosion would have weakened the bolts, but would not have loosened them.
- It was not the rough-running engine. Don reported some rough running at idle due to a carburetor problem now fixed. That roughness might have been the hammering that finally broke the bolts, but again, if the bolts were tight, that stress would have been absorbed by the friction between flange and hub, not by the bolts in shear. So the rough running was an aggravating condition but not the cause.

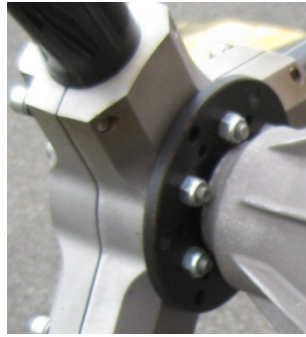
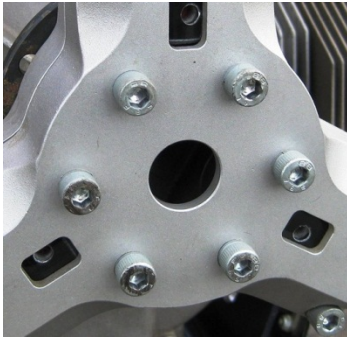


At this point, speculation focuses on the fiberglass base plate for the spinner. This piece, shown below, is sandwiched between the engine flange and the propeller hub. The chief engineer at Aeros in the Ukraine, maker of the propeller (but not the spinner and base plate), speculates that there was some compression of the spinner plate. This compression could have been slow. It's possible that the fiberglass was firm enough to let the bolts be torqued properly, but then flowed over time, loosening the bolts. Look at this video for a vivid look at how a material can be [rigid at first but fluid later](#).



What's the fix?

1. Given that the only root cause that anyone can think of is the fiberglass spinner plate, I would get rid of it. Or fabricate a metal replacement, which wouldn't be too hard.
2. In any case, Don needs to have a way to test the bolt torque frequently to see if the problem is returning. That's another argument for removing the spinner. It also argues for replacing the safety-wired bolts with bolts that can take a torque wrench. Here is such an installation. The bolts screw into the flange, but lock washers on the outside and nylock nuts on the inside acting as jam nuts prevent the bolts from unscrewing, just as the safety wire did. This design allows the torque of the bolts to be checked.



What's your action?

- ➔ Please check your propeller bolts soon for corrosion and proper torque.
- ➔ During your next annual inspection, remove the propeller completely. Don't assume that just because it hasn't fallen off the airplane yet, that all is well.

Friends, this is serious business. It's been several years since someone in the club died flying. But many have. You can read their stories in the Memorial section of the club website. Let's not have any more. Maintain your aircraft to the very best level you know how. Ask around. Get the best advice you can get. Then take it.



Is your two-stroke engine ready to fail? Here's an EAA webinar by Brian Carpenter of Rainbow Aviation regarding the proper operation of two-stroke engines. Rainbow presents pretty much all of the LSA maintenance courses in the country, so their credentials are superb. Our friends in Club 4 over in Maryland discussed it and thought that it was very good. 90 minutes.

<http://www.eaavideo.org/video.aspx?v=626943072001>

Money. Here's our treasurer **Jim Birnbaum** counting the 50-50 raffle money at the October meeting. I always like to see a treasurer who has actual cash in his hands. It's reassuring.

Trike instruction. Michael Brandt is a trike instructor operating out of Bermudian Valley Airport (07N) in Dillsburg, PA. He's listed under *Instructors* on our website. His partner Shannon Hansen tells me that Michael will be moving to Hawaii this winter to begin flying there, a long-held dream. To backfill, Shannon has gotten his trike CFI with a view to taking over the instructing. In the meantime, Shannon continues to offer Rotax maintenance, with particular experience in Rotax 2-cycle engines. He does business as [Appalachian Windsports](#).



Work party. As Rudyard Kipling [wrote](#) a hundred years ago,

*Our England is a garden, and such gardens are not made
By singing:-- "Oh, how beautiful!" and sitting in the shade.*

The same could be said of the 77-acre Warrenton Airpark. It takes an enormous amount of work to maintain it, from which we all benefit. When owner Tom Richards called two work days last month, a bunch of us showed up. Tom wore a bright green shirt so we could always spot him coming. He even had a PowerPoint Plan for the work.



Pete Bastien, Len Alt, Tom Richards, Ami Abramson

In addition to the above, **Don Sheehan, Ed Olbon, Jim Heidish, Steve Beste, Tim Loehrke, Jim Birnbaum,** and visitor **Lee Fox** pitched in. We successfully finished project #1 (burying the newly-laid drainage pipe near the hangars), and made great progress on clearing the trees and brush away from the west corner of the approach to runway 04.

Ami and Ed made the chain saw roar, cutting away vines and then two trees. Tom then hauled them to a brush pile.



Tom Richards clearing out the overgrown approach end to runway 04

The rest of us succeeded in not cutting ourselves with the machete and in cheering Tom on. If the weather had been colder, we would have held his coat for him. We did haul a little brush and barbed wire from the area. But Tom and the tractor did the big work.



Steve Beste, Pete Bastien and Lee Fox watching Tom work

The impossible turn – what’s your number? On September 29, Jim Wardrop, a new trike pilot died at Shreveport North when he tried a 180° turn at 50 feet on takeoff. The trike stalled in the turn and plunged to the ground, killing him. This fatal maneuver has been so common in aviation over the decades that it has its own name: *the impossible turn*. How can you avoid this when, obviously, it sometimes makes sense to do a 180?

First, **know your number**. How high do you have to be to safely pull a 180° turn? That is, how high do you in your aircraft have to be? For me, it’s 300 feet. I know this because I practice it. On a calm evening with no traffic, I’ll fly down the runway at 2,000’, clear the area for traffic, go to idle, put the trike into a sudden 60° bank and level out over the taxiway far below. I can consistently do this losing no more than 270 feet. Call it 300’ to allow a little time for the unexpectedness of an engine-out. The upshot is that I’m always looking for my magic number on climb-out – 300 feet. If I’m not that high and the engine quits, I’m going straight ahead. I’m not even *considering* a 180. I’ve already made that decision. You should, too. But you have to know your number. And by the way, practice the maneuver. It’s a pretty steep and sudden turn you’ll be making. You want to be comfortable doing it and know how to do it without stalling.



Second idea: **climb out in an offset**. We’re used to taking off straight ahead. Maybe you shouldn’t. If there’s a taxiway like at Front Royal above or an unusual amount of runway in front of you, sure, go straight. But how about at the field in the picture below?



Here, your best bet is to climb out in an offset once you’re too far to land straight ahead. That way, if you have to pull a 180 to get back to the runway, it’s only a 180, not a 180 plus two more turns to get back over the runway. Extra credit question: If there’s a crosswind, should you offset to the upwind side or the downwind side?

Fly safe,
Steve



Navigation by Rainbow

By Steve Beste

What I most love about this sport of ours is the way it constantly mixes the transcendent with the practical. Take this rainbow, for example. It turned out to be both. I took this picture shortly after dawn on a two-day trip into Pennsylvania in October. (See pictures and story [here](#).) The rainbow was beautiful! But it did create a practical problem for me. My course lay through the rainbow and I didn't want to fly through the rain. What to do? I knew the rain was quite local. I was dry taking this picture, but it was raining over there. So I figured I had to fly around the rainbow. I flew off to the right until the rainbow finally disappeared. Then I turned left, missing the rain. Rainbows – the most beautiful navigation aids you'll ever see.



Rainbow over the Conyngham Valley east of Hazleton, PA, an hour after dawn

Poker Run Inside the ADIZ

By Steve Beste

We in Flying Club 1 tend to treat the Washington SFRA like the Land of Mordor. East of the edge, our charts say “Here be dragons.” But you can have fun in the SFRA if you have a transponder and are willing to file a few flight plans. Hugh McElrath, my former trike partner now flies a Virus motorglider out of College Park Airport in Montgomery County. He recently participated in a Poker Run that was almost entirely inside the SFRA.



The course was [College Park, Fort Meade \(Tipton\), Bay Bridge, Lee, Freeway, College Park](#). With all but Bay Bridge being inside the SFRA and over built-up areas, you and I will never fly it. So look at [these pictures](#) of the run taken by his friend Ellis Kim. When I commented to Ellis that Hugh had to do an awful lot of flight-plan filing, she replied, “Yes, but paperwork and bureaucracy awakens the warrior in Hugh.” I know him, and it’s true. Perhaps that’s the other qualification you need besides a transponder.

Meeting Minutes

October 2013 Minutes

Flying Club One meeting and Memorial Fly-In

Saturday October 5, 2013
Warrenton Airpark
Warrenton, VA

Early A.M., the Membership helped with Airpark clean up and continued in the afternoon.

Selling 50/50 tickets before meeting

Call to Order

President, Steve Beste called the meeting to order at 11:05 A.M.

16 members present.

CONNECTIONS

Visitors & New Members

Keith Parks stopped by last year and was interested in flying. Now, after training in Florida and Lynchburg, VA he has a Trike and will fly out of the Front Royal airport.

New member **Lee Fox**, a retired American Airlines Captain is looking into flying Ultralights or LSA.

Old Members

We found out that **Ron Madsen**, a longtime member of sister USUA Club 6 in Southeast VA passed away. His son flew up from the Richmond area to tell us the sad news. Ron was very active in the Clubs and flew his Phantom Ultralight to many of our fly-in events.

Jim Birnbaum said he has his X-Air LSA up and flying, but is going to sell it and build a legal (part 103) kit Ultralight.

SERVICE PROVIDERS

Recap our standing list of service providers:

- PPG instructor and dealer: **Michael O'Daniel**
- Fixed wing instructor: **Chuck Tippett**
- PPG, Ultralight, LSA and General Aviation flight instruction: **Grass Roots Flyers**
- Welder: **Tom Kotsch**
- A&P mechanic: **JD Ingram**

REGULAR REPORTS

Secretary: Jim Heidish reported that the September Minutes were published in the October Club Newsletter and approved as published.

Treasurer: Jim Birnbaum reported September Income: \$18.00, Expenses: \$52.03, The Flying Club 1 Checkbook Balance: \$2548.16.

President: Steve Beste said because of the government shutdown (he is a contractor) he used the time off for a flying adventure. He flew his Trike up the big valley of Pennsylvania, over the Susquehanna River Valley, and ending up at the town of Hazleton, PA. He had stops along the way, and the round trip was about 400 miles and 9 hours flight time. Steve said he then got an email from Club 4 in Maryland saying one of their members was killed when he stalled in a turn back to the runway following his engine stopping. This started a conversation on the 'impossible turn'. The 'impossible turn' is possible if you practice (up high), plan ahead and know your limitations. Know what is best for your aircraft, altitude needed, bank and rate of turn. When your engine stops on climb out it takes a big push to get the nose down and a bank of 45 degrees or more, plus an airspeed just above stall. The members that have practiced it say you would be surprised at how fast you can turn, but also how much

altitude is lost if not done right. See the President's Letter for more on the 'impossible turn'.

Steve reminded the Membership that starting next month we will be holding our cold weather meetings at the Centreville High School library and asked for suggestions for our programs. Some were: Radio Communications, Understanding and Reading Charts (maps) and Engine Maintenance & Repair.

Safety and Training Director: **Dave Riedel** – not at meeting.

Membership Director: **Jim Birnbaum** said that we have started our membership drive and anyone that joins before the end of the year will be paid up through the next year (2014). He is also accepting 2014 dues. Membership is holding at 51 (paid dues).

Warrenton Air Park Owner: **Tom Richards** told us of his recent operation to patch up a hernia, saying all is well and he can get back to lifting 400 lbs. He said that some of the old drainage system has become plugged and he is working on repairing it. Tom thanked the work crews and said that the on-going clearing of brush on the Airpark grounds has really opened up the landscape. With some conflicts on the main runway use, Tom said to get clear of the runway ASAP. Fixed wing aircraft

should use it for taxi, takeoff and landing. Parachute/soft wing aircraft should use it for takeoff and landing, but set up and take down should be on the sides/edges (not in center). Same holds for the skydivers – land and clear the runway. He said that the skydiving operation is going to move to a more remote area on the field. He also said that he is working on an Airpark fuel co-op with tanks for 100 LL and 87 auto gas.

Old Business – None

New Business – None

None

MONTHLY PROGRAM

None

50-50 Drawing

50/50 - Winner **Steve Beste** donated it to the Club.

Adjourn

President, **Steve Beste** adjourned the meeting at 11:45 AM.

Cookout

Everyone enjoyed the food prepared by chef **Ami Abramson**.

Submitted by **Jim Heidish**, *Secretary*

Activities

2013 FLYING CLUB 1 ACTIVITIES SCHEDULE

Designated Club meetings will be held the first Thursday of each month in the Centreville High School, Union Mill Rd., Centreville, VA, at 7:30 PM. Others will be held at 11:00 AM at the Warrenton Airpark as shown in the 2011 schedule. Changes in time or location will be posted in this newsletter and on the Club website.

Date	Activity	Location	Description
Thur, November 7th, 7:30pm	Club Meeting	CVHS	Conversation, Club business meeting, and program.
Sat, December 7th, 4:30pm - 8pm	Club Meeting / Holiday Party	Airpark Club House	Monthly meeting and Holiday Party.

CLASSIFIEDS

Ads will be run twice and then dropped unless resubmitted, or renewed by telephone or e-mail. Please advise the editor: **Lucy Ooi** (Ooi.Lucy@gmail.com) when the ad is no longer needed.

FOR SALE — Zodiac 601 XL (650 XL) partially completed kit. Kit includes Constructed Tail Surfaces and Fuselage, to include Landing Gear with Wheels and Brakes, Dual Brake Peddles kit, Dual Control Stick kit and Instrument Panel. The wing kit and engine is needed. The wing kit is available now pre-drilled. It The plane will take a Rotax 912S, Jabiru 3300, Continental 0200, Lycoming 235, Corvair or VW conversion engines. All documentation and registered plans are in the package. Asking \$7500 or best offer above \$6000. Note this is a Light Sport class aircraft. It is available built, IFR Certified at Southeast Light Sport for \$99,900. (SouthEastLSA.com). See

<http://www.zenithair.com/zodiac/xl/> for details of aircraft: Contact: Larry Walker, 540-347-7609

Flight Test Report: Steve Flattum flight tests the Zodiac and reports:

“The CH 601 XL / CH 650 family of airplanes are a delight to fly. Simple and easy to fly with a great view and they are very comfortable for long flights. The airplane is very strong and it is backed by a company that has been around for a very long time.”

FOR SALE — Taylorcraft BC-12D (1946) - available. sale to club members only for a 10% discount from the \$22,500 asking price. Aircraft is hangared at Warrenton Airpark. The Taylorcraft is flown about 65hrs/year and should be flown more. Please contact Tom Richards ([\(703\) 568-3607](tel:7035683607)); warrentonairpark@yahoo.com or Jim T. Hill for details.

MEMBERSHIP DUES POLICY

The period of membership follows the calendar year—January through December. The renewal period starts on 1 October with regular dues at \$20.00 and family at \$25.00. Members who have not paid their dues by the end of February will be dropped effective 1 March and will not receive the Newsletter or Membership Roster. New members joining after 1 October will be charged \$20.00 or the family rate, if applicable and will be credited with full membership for the following calendar year. Please mail payments to Flying Club 1, 8570 King Carter Street, Manassas, VA 20110. Payment can also be made at the regular monthly meeting. Please include the 2012 Membership Application form with your payment. This will be used to ensure that our records are current. A copy of the membership application is attached and also printed at the end of the Newsletter.

Jim Birnbaum
Flying Club 1
Membership Director, Treasurer

MEMBERSHIP APPLICATION - 2013



Type of membership: New, Renewal, Regular, Family membership

Name(s): _____

Name To Go On Your Name Tag: _____

Street or PO Box: _____

City: _____ State: _____ Zip: _____

Telephone, Home: _____ Cell: _____ Work: _____

Spouse's Name: _____

Emergency Contact: Name: _____ Phone: _____

E-mail Address: _____

Aircraft Liability Insurance through: _____

Aircraft make and model: _____ N-Number (if any): _____

Pilot rating(s): _____

Club Activities or Services for Which You Volunteer: _____

Information from this application will be in the club's membership roster which goes only to members.

Instructions:

1. FILL OUT THE ABOVE FORM.
2. ENCLOSE A CHECK FOR \$20 (\$25 FOR A FAMILY) MADE OUT TO "FLYING CLUB 1".
3. SEND THE FORM AND CHECK TO:
Jim Birnbaum, Treasurer
8570 King Carter Street
Manassas, VA 20110-4888

To join the national USUA, go to <http://www.usua.org>

To join the national USPPA, go to <http://www.usppa.org>

Flying Club 1 General Information

The Flying Club 1 is a nonprofit, recreational club dedicated to the sport of ultralight and light sport aircraft flying.

2013 CLUB OFFICERS & DIRECTORS

President: Steve Beste 703-321-9110
Vice President: Dick Martin 703-242-2367
Secretary: Jim Heidish 703-524-5265
Treasurer: Jim Birnbaum 703-361-7478
Director and Past President: Len Alt 703-945-9314
Director At Large: Dave Riedel 703-815-4924
Director At Large: Larry Walker 540-347-7609

2013 CLUB VOLUNTEER STAFF

Safety & Training: Dave Riedel 703-815-4924
Membership: Jim Birnbaum 703-361-7478
Club Artist: Jim Heidish 703-524-5265
Newsletter Editor: Lucy Ooi (“Wee”)
Ooi.Lucy@gmail.com

Web Master: Steve Beste,
president@flyingclub1.org

A club is only as good as the members who volunteer to support its activities. The following listed activities with the club require member support in varying amounts. Please indicate on

your membership application the function(s) (can be more than one) you will support as a Club member. All active Club members are expected to participate. However, members who live some distance away and cannot attend meetings regularly may prefer to support functions associated with Club weekend activities.

ANNUAL DUES (Jan 1–Dec 31) \$20.00. Family membership (typically husband and wife): \$25.00. A spouse who wishes to participate will please complete a membership application form.

CLUB WEB SITE: <http://flyingclub1.org>

MEETINGS are monthly, year-round. See the web site for dates and places.

THE NEWSLETTER:

The newsletter is published by email on the first of every month.

SUBMITTING ITEMS FOR THE

NEWSLETTER Members and non-members are encouraged to submit items for this newsletter. Send submissions to Lucy Ooi at Ooi.Lucy@gmail.com at least one week prior to the end of the month.

If you are interested in joining the U.S. Ultralight National Organization go to their website for membership information at: www.usua.org

Likewise, if you are interested in joining the U.S. Powered Paragliding Association, the National PPG Organization, go to their website for membership information at: www.usppa.org