Skywords

The Newsletter of :
Burlington Radio Control Modelers Club
P.O.Box 85174 Burlington Ontario L7R 4K4
WWW.BRCM.org

December 2012

BURLINGTON RADIO CONTROL MODELERS

December Meeting

Thursday December 13th 2012

Burlington Public Library
New Street

7:30 PM

Bring something to eat and share

Free coffee and soda

Bring a plane or a sleigh or something else of interest

Joe Fazzari won his wings in November. Congratulations to Joe and to The Klepsch School of Instruction.

Season Greetings, from the President,

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Frost Fly
Jan 1st. 9 AM onwards.
Bayview. Be There!

New Editor Wanted

After 6 years as Skywords Editor I'm retiring so this is my last issue. I hope Skywords has been of use to the members of BRCM and I also hope someone will step up to take over what is a pretty enjoyable job. Tom Gwinnett

This is an explanation by Eric Klepsch of how he balances an EDF fan.

Thanks Eric

Balancing, should I say dynamic balancing is half science and half art. Some fans will balance within an hour but others present problems like loose adapters or motors bearings that don't fit the motor or shaft properly. All things that take time to fix. More than one fan took me two days of "tinkering" to achieve a decent running unit. I have put my basic procedure in print on RC Canada in a thread called"fan balancing solution".
My last post is.....

Balancing a fan is the hardest thing about EDF models but it is critical if you want the fan to sound its best and not break itself to pieces. Running 30-40 thousand RPM can create some serious forces if not balanced.

Number one, you have to try and get the adapter on the motor shaft as true as possible. If it is out, the fan and spinner will wobble with large imbalance as a result. You may have to try each possible set screw position on the motor shaft flat spot. The FLAT SPOT is necessary on the motor shaft to keep the adapter from twisting or flying off. File one flat spot for the adapter set screw (you don't need more than one). Make a mark with a felt pen on the other end of the motor shaft in line with the flat spot. This mark is needed to check orientation of the fan/adapter in the following steps. Some adapters have only 1 set screw but others like the Changesun have 4 (allowing 4 possible positions). Just turn the motor shaft and watch the end of the adapter to see if it rotates in the center. A very small amount of error can be offset with extra weight but the more true the adapter runs, the less weight you will need. Some adapters don't fit tight enough on the motor shaft which will cause shifting of the fan an balancing impossible. If loose, I add a very small amount of epoxy inside the adapter just enough to go around the tip of the motor shaft when fully inserted. Wax the motor shaft to help make removal possible.
Try and statically balance the fan as good as possible. Magnetic static balancers can be flawed but the shaft with cones can still be used to balance the fan if placed on top of two flat surfaces (like coffee mugs). Add epoxy or drops of crazy glue (with kicker) inside the hub where needed (on the Changesun fan add glue to the backside of the hub where the blades form a lip). Then mount the fan and mark one blade (so you know where the various positions are relative to the motor shaft when you use the "clock method"). I use a dab of white-out. You can hold the adapter from turning by having a hole in the shroud that lines up with one of its set screws. Stick an Allen key in and the adapter won't turn while you loosen and tighten the fan screw or nut.
DO NOT RUN THE FAN IN YOUR HAND! Run it in an enclosed mount, like the model or a custom made mount. I made a mount from scrap foam packaging that has a removable top for access. It gets mounted to a table and safety goggles and ear protection is necessary. If the fan or shroud lets go, it will happen in an instant unleashing a +2 hp meat grinder! Scary and very dangerous. I cannot over state this BE CAREFUL. Never assume the fan is sound, as I have seen perfectly smooth fans let go.
Now run the fan SLOWLY and feel for vibration. You don't need much power to feel an imbalance. If run at full throttle and you have an imbalance, the shroud can be broken which is disastrous. Loosen the fan (not the adapter) enough to rotate it 180 degrees on the adapter (6 o'clock) and run again. Check for vibration and see if better or worse than 12 o'clock position. Apply same technique for 3 and then 9 o'clock positions. By now you will see a better running quarter of the possible fan positions. Now fine tune it to the best running position (at all 12 "hours"). You will be amazed at how much better the fan will run. A 10 degree turn can make all the difference, but find that best position. Once found remove the white out spot and put a new one that lines up with the motor flat spot.

This next part is for fans that have a large separate spinner like the wemo midi fan and typical fans supplied with Flyfly and Hobby topgun kits.
Now put the spinner on and there may be a chance it too is out of balance (most of my aluminum spinners were and some of my plastic ones as well). This complicates things a little but just apply the clock method to the spinner until you find the smoothest running position. If it still vibrates, now you must add some weight to fine tune the complete fan. First add a small square of duct tape to the spinner at the 12 o'clock position then apply the clock method until you find where the weight must be added. The tape will stick better if you clean the spinner with alcohol first. You must be careful not to give too much throttle as the tape will fly off into the fan. Take the spinner off and add epoxy to the inside of the hub. Re-attach the spinner in the same smooth running position found at the beginning. Run it, and if its smooth at all throttle settings, you are done. If it still isn't perfect

apply another piece to the same location and see if the fan begins to run smoother. Tape is just a temporary step to ee where the weight must be added. Once you know, add some more glue inside the spinner at this location. Run and if still out, apply tape to see if more weight is needed. If so add more epoxy.
I think you get the idea...

With the changesun fan you use the same clock method with tape added on its small spinner but the weight is added at the back of the fan hub on the lip just behind the blades. I find CA (with kicker) works really well for this. Run, see if more tape added in same area helps, and add more CA as necessary. The CA can be scraped off fairly easily with a knife should you put too much on.
It is tedious but the results are worthwhile. Out runners are easiest as you know the motor shaft position, and it is easier to loosen and tighten the fan nut. Inrunners require you to use an Allen key in the adapter set screw to hold the shaft while you change the fans position. I also mark the motor shaft on the rear shaft end to keep track of the fans clock position. This may be tricky if the landau motor is covered with a fairing.
At some point you will get the fan running smooth, but the more you work at it the better the results and the quieter it will run.
Best of luck!

I am reluctant to try and explain the process in a meeting as it would likely bore the assembled modelers to sleep!
You can publish my ideas and include a notation that anyone can contact me for assistance should they wish to dynamically balance and EDF. go ahead and post my email ericklepsch@gmail.com

(Above) Sunday 10AM Timmy's on Burloak Road
Helmut Schmitter (Below Lto R) Jim Reilly and Bill Montgomery, Eric Palmer, Mike Block,

January first Frost Fly

This article is from Ted Pritlove.

As a teenager in the 424 Fighter Sqd-Mt. Hope, I helped the PF'S(permanent forces armmanent tradesmen) maintain the 20mm cannons on Canada's Vampire Jets.

Last year I saw that a Swiss company called Ready2Fly was producing a 90mm size Venom EDF jet--I was intrigued! The Venom was the next generation jet after the Vampire.

Eric and Chris Klepsch and I were all interested but the Venom was not available in Nth America. Eric decided he would buy the airframe only kit from China, have it "dropped shipped" to his home in Burlington and install his own electronics. I decided to go with the PnP version 'till Eric made me an offer---- if I went with the bare kit like his, he would supply a well balanced CS90-12 blade fan, motor, ESC and servos (an up-graded power package). My answer--let me know when you want the money!

My Venom kit arrived three weeks ago. Eric had my power package at his Father's(Chris) house here we dicussed installation and assembly techniques. On Nov. 27/12 (2C and 8/10kph winds), I test flew my Venom. Eric handled the trims--lots of up elevator and some right aileron. At altitude, we tested slow flight,stalls (not much) and flap settings. Amazingly,the Venom flying with take-off or landing-flap did not pitch up or down; so no elevator mixing was required. The Venom is fast, very stable and the approaches are a joy. The sound---well anyone who has heard Eric's jets, know how quiet and turbine like sound they generate. I am very happy with my Venom and will eventually replace the Swiss decals with RCAF roundels. Thanks Eric for your help buying, building and flying my Venom.

Ted Pritlove

From Front Page

Well it's that time of year again when Christmas is almost upon us and seemingly, we might even have a Frost Fly this year where we can actually use skis in place of wheels. I heard about the snow storm the paralyzed southern Ontario. Fortunate for me, I escaped just days before to head to the sunny south. Trust everyone weathered the conditions without incident.

Along with winding up this year, we'll be looking at making some changes to the Board and also looking for members to take over the responsibility of managing a couple of necessary functions within our club. This December issue of Skywords is Tom Gwinnett's last. Tom's done a great job of Skywords not only this second time around but he has also been the Editor in past years. We do need to have someone "Belly up to the Bar" or this could be the last issue you are reading. Tom has indicated that he will work with and help the new Editor. It really is not that difficult. One benefit of being the Editor is that you basically can say what you want without anyone editing your content! All, within reason of course. We need to move on this quickly, so talk it up now. It would be nice to see someone step forward at our next General Meeting this month.

One other very important position is our Bayview Field Manager. After 4 years of Managing Bayview, Nick Moskal is retiring from this position and hopes to spend some time enjoying his new motorhome and MGB sports car. We'll still see Nick flying and running "Nick's Cafe" at our events. He's done an exceptional job running Bayview and we thank him for all his efforts. When considering this position, Field Manager doesn't necessarily mean doing all the work yourself.

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it means managing a group of volunteers to help with the grass cutting and other maintenance activities.

Ian Brown (War Birds Event Director) has now passed the reins over to Joe Fazzari. Joe has already dug into this and will be looking for volunteers to run one of the most recognized special events in Southern Ontario. Ian, thanks for keeping us on track last year and making it one of the best events we've enjoyed.

As a reminder, when you joined our club, you have obligated yourself to volunteer, to support activities, to help make the club run. Truly, you'll get more out of the club when you participate and have fun in doing so. If you have an interest in any of these positions and want to find out more about what's all involved, feel free to give me a call.

If you are traveling over the holidays, travel safe and see you at the Frost Fly.

Dave Cummings

Karl Gross's Hanger

Felipe Lopez and Ralph Bokelmann (left) receive their Wings from Wings Director Carl Finch

These images and more are available on our slick new Web-site. www.BRCM.org If you have pictures you would like to share with other members email Lawrence Cragg who can tell you how to post them