



KNOX COUNTY RADIO CONTROL

Newsletter

Knoxville TN Dec 2012 AMA #594

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Website..www.kcrctn.com..Jeff Prorise,webmaster

2012 Elected officers

President.. ...Phil Spelt...chuenkan@comcast.net

V Pres..... Larry Hayes.....lchayes@bellsouth.net

Secretary.....John Bobrek.....John@bobrek.net

Treasurer.....Joel Hebert..hebertjj@comcast.net

Safety Coord.. Jim Maines.....oorsted@aol.com

Board of Directors

Jeff Prorise.....jeffpro@wintellect.com

Randy Philipps...randy@accesssolutionsinc.com

Dennis Drone.....dendrone@aol.com

Historian...June Cope...philipcope@bellsouth.net

3rd Annual Helicopter Fun Fly

The 3rd Annual KCRC Helicopter Fun Fly was held over the weekend of November 3rd and 4th. This year we had 16 registered pilots and about 50 people showing up to fly, converse and have lunch. We had pilots from Virginia, Florida, Georgia and North Carolina along with the guys from Chattanooga, Cookeville and the Tri-Cities. The raffle was held and we gave away tee shirts, fuel, a gyro and the grand prize was a BNF Blade 130X heli that was won by Noah Wiloy from Cookeville. We are already planning the next event and will propose some dates at a meeting in the next couple of months. Tim Cox, CD ■

Storage of your NiCad RC Packs

by Red Scholefield, printed in the newsletter for the Anoka County Radio Control Club, Inc.

How should I store my batteries at the end of the season? What should I do to them when I put them back in operation?

The batteries should be removed from the transmitter and airplane for long-term storage. Here in the South where a lot of us work out of our garage workshops, I recommend putting them in the refrigerator (not the freezer) during the off season. While not so important where your workshop rarely gets above 23°C (74°F), the refrigerator is still a good bet. Why? The failure mode of NiCads is separator failure; this is the material that keeps the plates from touching each other. When it fails, the cell shorts. At higher temperatures it oxidizes faster. In fact, the rate doubles for every 10 degrees Celsius increase.

Should I store my batteries charged or discharged?

It doesn't really matter, they will self discharge in a few months stored at room temperature. If you are going to store them in the refrigerator, the charge will remain for a lot longer. I would discharge them first to 4.4 volts then put them away. Good cells will just set there in the discharged condition (the voltage can vary considerably, but is usually above 1 volt). In a battery

with damaged, worn out separators in the cells, the cells are apt to short if left in a discharged condition. This is actually good since it is the first indication of a cell that's going bad and it is best to replace the pack. Batteries left on trickle charge will seldom short out since it is in the charged condition and any short that tries to develop will be zapped by the charge in the cell. Partial shorts, those having fairly high resistance, can be developing that can cause the cells to self discharge at a higher rate than normal and possibly leave you short in the middle of a flight after you just measured the cell when it came off charge with your ESV and everything looked okay.

Now when your batteries are coming out of storage, before charging, check the voltage without a load on the battery. It should read well more than 4.0 even if it has not been charged all winter. They should be essentially fully discharged; or flat as we say in the business. In this condition if the battery is going bad, it will probably have shorted and you will read zero volts on that cell. It may be a soft short, one that could be blown away merely by the simple action of slow charging. Don't do it! It is just lying there waiting to bite you. Replace the pack. Cut out the "good" cells if you want and use them in something less critical than your model. If you have access to a cycler, running through a couple of charge/discharge cycles is a good idea just to make sure you are getting the capacity you are supposed to. Anything less than 80% of rated is suspect. Once at the field, preflight battery checks are in order, particularly at the beginning of the season. Since those who religiously check their flight packs with an expanded scale voltmeter seem to crash less (due to battery failure) one must assume that the ritual is smiled upon by the RC gods.....Red ■

(Editors note::: Most of the information I find in the storage of LiPo batteries indicate that they should be charged to about 50% of capacity and kept in a cool dry place. Not on a metal surface and not exposed to sunlight. Definitely not in a freezer, but some recommend a refrigerator. A problem with refrigerators is possible dampness, so they should be kept in a sealed container. Recommend recharging to 50% capacity every two or three months. LiPos are not like NiCads; if the voltage drops too low, they die. I just lost two \$40 Lithium portable drill

batteries by not keeping tabs on their voltage..) ■.

An F-5 is Born by Jeff Prosis

My life changed forever in the summer of 2006, when I attended a fly-in in Chattanooga and witnessed the flight of a turbine-powered RC jet for the first time. The model was a 1/6-scale F-5 in the Patrouille Suisse paint scheme. It was flown by jet guru David Payne, and ever since that day, I've had a soft spot in my heart for Swiss F-5s.

Which explains why I've spent the past two years building a Swiss F-5 of my own. A product of Skymaster, the jet is 96 inches long and has a wingspan of 59 inches. Dry weight is 30 pounds,



which should result in a take-off weight slightly north of 40 pounds with a gallon and a half of Jet A on board.

The jet is powered by a JetCat P140-RX, one of the new generation of kero-start JetCat turbines that weighs 3.5 pounds and produces 32 pounds of thrust at 125,000 RPM. I did a first start and test run at our field recently, and the entire run went flawlessly. RX



turbines are easy to install, thanks to the fact that

critical components such as fuel solenoids have been integrated into the turbine itself.

Most of the electrical and pneumatic components are located in the cockpit bay. Gear, gear doors, and brakes are controlled electronically with an AirPower EVSD-5U multifunction air valve located just in front of the cockpit. In addition to replacing several servos, air valves, and button valves, the multifunction valve makes it extremely easy to sequence the gear doors, three of which have to open and close each time the gear is cycled. Power comes from a PowerBox Royal, which integrates a 12-channel 2.4 GHz receiver, dual voltage regulators, and servo matching into one unit, and sits directly underneath the cockpit. Behind the cockpit are two component trays. The one on bottom holds the UAT, fuel pump, and ECU, while the one on top allows me to service the jet between flights. It contains the PowerBox data display, the on-off switch, the fill line, the fuel shut-off valve, air fill valves, and air-pressure gauges. Its location behind the cockpit makes it easily accessible when the canopy is removed and hidden from sight when the canopy is installed.

Of course, every jet needs a pilot. I chose a 1-foot-tall George W. Bush Elite Force action figure that I acquired through eBay. I couldn't resist having him



give a thumbs-up from the cockpit. All of us will feel safer knowing that 43 is patrolling the skies overhead!

All that remains now is the test flight, which will probably occur the first week of December. I had intended to present the F-5 at the November club meeting, but then realized that I'm traveling that week. My current plan is to bring it to the December club meeting. Be sure to attend if you want to see the club's newest addition up close and personal!.....Jeff ■

Tips & Tricks

The Right Tool for the Job! Here is a tip for those of us

who have had the frustrating experience of ruining the head of one of those little Phillips head screws in an engine, or when assembling an ARF airplane or helicopter. It might not have been entirely your fault. You just may have been using the wrong type of screwdriver.

Since most ARFs, helicopters, and even engines are built in the Far East, many manufacturers use what are called "JIS" crosshead screws; JIS meaning Japanese Industrial Standard. The screws look almost identical to Phillips, but they are just different enough to make you a little crazy. Of course just like metric screws and bolts, the manufacturers may include both JIS and Philips screws in your kit.

The JIS can be identified by a tiny dimple on the head, or by the fact that you can only get them out by



using vise grips! You won't find JIS screwdrivers for a dollar at Harbor Freight, but they are available online in a wide range of prices. Just do a Google search for JIS screwdrivers. Try them; you will be happy you did!

by Gerry Roedel, from the Tri-County R.C. Club, New Jersey

Above from the AMA Insider

KCRC Meeting Minutes,

November 2012

President Phil Spelt called the meeting to order at 7:00 PM on Tuesday, November 13th at the Fellowship Church location. There were 19 members present. The minutes from the October meeting were approved. Minutes for a meeting are available in the next KCRC Newsletter.

Officers' Reports

The Treasurers Report was given by Joel Hebert and approved. This report is available from Joel or the other KCRC officers.

President Phil Spelt presented the current slate of candidates for 2013 KCRC officers:

President

Jim Maine, Larry Hayes

Vice President

Frank Allemand, Ed Dumas, Craig Dieter

Secretary

John Bobreck, Tim Cox

Treasurer

Joel Hebert

Board of Directors-Executive Committee

Bill Leonard, Bill Dodge, Bob Helsel,

Julian Morrison, Randy Phillips

On-line voting at the KCRC website will be available up to midnight on December 8th. Those attending the December meeting can vote at that time.

Jim Maines, Safety Officer, presented a report of an accident which occurred during our Saturday Fun Fly and BBQ October 13th. John Heard tripped on the wire leash of a member's dog. John's injuries were serious and he was taken to the hospital for treatment by ambulance. Jim Maines presented three corrective club options to this incident. The first was to ban dogs from the flying field. The second was to designate a "dog area" at the field which is away from foot traffic. The third was to do nothing. No action was taken at the meeting.

Old Business

Heli Fly-in on November 3rd and 4th featured 16 pilots and about 50 spectators. East Coast storms may have affected attendance. Those pilots that did come put on a great show. The weather in November is hard to predict so the heli event next year may be scheduled earlier in the year. After all expenses are considered, the event netted \$40 for KCRC.

New Business

Our club has been interested in having a weather station and/or a camera at the flying field. Ed Dumas has done some research on this. A weather station capable of being accessed from the web costs about \$1,000. The monthly cost for connection is \$50 to \$60 per month. Ed's proposal is included in this newsletter.. No figures were available on the cost of a camera.

Our January Banquet is coming up. We have a date, January 8, but the location has not been decided at this time. The Super China Buffet in Oak Ridge was suggested because we get a room to ourselves at no cost and the food price is reasonable. Phil Spelt asked several members to get information on other restaurants before the December meeting

Crash of the Month

Randy Philipps had a dramatic one point landing during a Sunday SlowStick Combat Derby recently. After a mid-air crash, his wing was destroyed and his Slow Stick sped to earth. In an effort to preserve nature, John Heard's parked car was in a location to take the impact. The **Slow Stick**, without its wings, became a **Fast Stick** and the force of the crash caused the prop shaft to penetrate the car's windshield. No one was injured, thank goodness, but the **Slow Stick** was a total loss.

Model of the Month

No models were presented.

After Meeting Program

No program this month.

Next Meeting

Our next KCRC meeting will be at Fellowship Church on December 11th at 7 pm. We will meet in the modular building on the west side of the church. Election of officers and setting of 2013 dues will take place then.

Minutes submitted by Bill Leonard, substituting for KCRC Secretary John Bobrek. ■

Real-time Weather at KCRC

Presented by Ed Dumas, November 15, 2012

This is a proposal to install a weather station at KCRC that measures real-time wind speed, wind direction, dry air temperature, relative humidity, barometric pressure, and rainfall amounts. These data can be made available within a minute of collection, 24/7, on a website that anyone can access and that we can link to the KCRC homepage. Davis, Inc. seems to be the best choice for an affordable weather station that will be adequate for our needs. While there are cheaper systems available, all have quite a few bad reviews / ratings. The Davis systems are consistently reviewed as having the best value for the money.

Below are descriptions of the pieces of equipment we will need, a brief plan about how to put it all together, and finally a breakdown of both the initial costs and the monthly costs to make it happen.

Weather Station: The weather station would consist of two parts, an Integrated Sensor Suite (ISS) and a wireless console. The ISS measures the various quantities and transmits data wirelessly to the console. The WeatherLinkIP is a device that will make the data from the weather station available to the internet.

Internet connection: In the absence of any internet connectivity infrastructure at the field, the next best option would be a cellular modem that has the ability to interface to the weather station. A Cradlepoint CTR-500 is a travel router that uses a USB/ExpressCard wireless modem to connect to the internet. It will provide an ethernet port that the WeatherLinkIP cable can plug into directly.

We discussed the possibility of getting Comcast or another cable provider to install internet access at the field but I don't know if that is possible at this time. If so, the monthly prices will be on the same order as the wireless prices but the installation costs may be very high.

Wireless Service Plan: With the cell modem comes a monthly charge for internet access. It will be \$50-\$80 per month depending on how much data we use. Verizon, Sprint, and AT&T all have plans available and each are the same price for the same amount of data transfer each month.

There are overage charges on all wireless accounts, so we don't want to go over the maximum amount of data allowed per month. The amount of data varies with the price, but it is on the order of 2 GB to 4 GB per month. The Cradlepoint device can create a Wi-Fi hotspot

but we would need to monitor its usage closely.

The option exists to lockdown the Wi-Fi and use it only for the weather data if we want. There are other Cradlepoint devices (the CBR-400 and CBR-450) that have no Wi-Fi transmitter, but those are more expensive than the Wi-Fi version.

Camera: I haven't researched web cameras yet for this proposal but there are plenty available at a variety of prices and capabilities. If we put the infrastructure for the weather station in place, we can easily interface a camera and have it take a still picture "on demand" from the KCRC website to show what is going on at the field. With a camera, we would need to pay closer attention to the total amount of data each image requires and make sure we have enough bandwidth and data capacity.

Putting it together: The wireless console, Cradlepoint device, and wireless modem can run off of A/C power and should be protected from the elements. I propose locating them under the main pavilion. The A/C power source would need to be continuous but there is a battery backup option for the wireless console in case of A/C power failure. No option exists for backing up power to the Cradlepoint router unless we choose to get an uninterruptible power supply (UPS). Note that with this equipment there is no need for a computer at the field.

The weather station ISS has a solar cell and rechargeable batteries that shouldn't require maintenance for at least 2 years after installation. Probably the best place to locate it is above the roof of the flight line pavilion. It can be mounted to a 1" diameter pole approximately 2-3 feet above the roof. There are no wires or other connections required for the weather station.

Webpage: With the purchase of the WeatherLinkIP cable, Davis provides a weather data webpage free of charge. Current data will be available at all times, as well as up to 2 years of previous data. If we choose, we can archive the data ourselves to create our own long-term record of wind speed, direction, dry air temperature, humidity, precipitation, and barometric pressure. The data from the station are updated once per minute and sent to the Davis website.

Initial cost:

| | |
|--|----------|
| Vantage VUE weather station & wireless console (#06250): | \$395.00 |
| WeatherLinkIP (#06555): | \$295.00 |
| Cradlepoint CRT-500 (Amazon): | \$ 78.99 |
| USB/Express Devices (Sprint, Verizon, AT&T): | \$ 29.99 |
| Taxes, shipping, and such (estimated): | \$ 70.00 |
| Total: | \$868.98 |

Monthly cost:

| | |
|--|-------------------|
| Verizon, Sprint, or AT&T data plan (all 5 GB/month): | \$ 50.00 |
| Taxes, etc (estimated): | \$ 10.00 |
| Total: | \$ 60.00.....Ed ■ |

(Editors note:: Science and technology have passed me by. Used to, we'd just look out the window.)

Please remember to vote. If these fellows can offer to do the job, at least you can take the time to vote for the one you think will do it best....Jim



KCRC Ballot

2013 Election of Officers

Please select one (1) candidate for each office listed below.

President:

- ☐ Larry Hayes
☐ Jim Maines

Vice President:

- ☐ Frank Allamand
☐ Craig Dieter
☐ Ed Dumas

Secretary:

- ☐ Tim Cox
☐ John Bobrek

Treasurer:

- ☐ Joel Hebert

For the Board of Directors(Executive Committee)
please select two (2) candidates.

Board -- select two (2):

- ☐ Bill Leonard ☐ Bill Dodge
☐ Bob Helsel ☐ Jeff Prosisie
☐ Julian Morrison ☐ Randy Phillipps

Name(PRINT)

SIGNATURE

AMA # _____

AMA number MUST be included
CLIP OUT BALLOT AND PUT INTO AN
ENVELOPE, STAMP AND MAIL TO;

**KCRC VOTE,
c/o PHIL SPELT
730 POPLAR CREEK RD
OLIVER SPRINGS TN 37840**

HAPPY HOLIDAYS
I've been doing this
newsletter for several years
and I've had the previledge of
wishing all of you a very merry
Christmas a bunch of times. So
here goes once more:
**Merry Christmas and a
Happy New Year to each and
every one of you.....Jim**

FROM THE PRESIDENT

I want to take this opportunity to wish
all KCRCCers a Very Happy Holiday season.
May all you celebrations with family and
firends be Merry, Happy occasions.

Please remember the KCRC Banquet on
January 8, 2013 -- place to be determined, at
6:30pm. If you have any suggestions for a
place that can accommodate 45 or 50
people, please check group prices and let me
know via email at

chuenkan@comcast.net.

Also, please vote for your choice of
officers either via the ballot in this issue of
the NL, or by going to the web site:

[http://spelt.coffeecup.com/forms/](http://spelt.coffeecup.com/forms/2013kcrcvote)

2013kcrcvote

or by coming to the December meeting on the
11th at the Church on Middlebrook Pike to
vote in person.....Phil

Once more, Merry Christmas !!!