



# Stetson Flyer

Stetson Flyers Model Airplane Club

October 2001

## President's Message

We have some members abusing frequency control!

In no way is it acceptable to ignore the pin and impound procedures.

Usually, the pilots abusing the system are risking other member's airplane, rather than their own.

If a member is caught doing so, you should immediately indicate to him what the proper procedure. If he resists, call me or a member of the executive and the matter will be dealt with immediately, specially if this person(s) are aggressive about your suggestions.

At our last meeting, we discussed events and guess what the ORCC have one on the 13<sup>th</sup>, we have to try and avoid this next year. Also reports on club events and ones visited by members, was testimony of a very active season. Congratulations to all.

A report on the field improvements was submitted. Obviously, work has halted for now. We have projects scheduled for the field next season, which will give us some regularity on the condition of our site.

Our next meeting is election night, if you have a candidate for one of the executive position, call Mike Ingham at 836-6544 and Mike will present this at the meeting. With the size of this club, we should be able to generate more candidates.

We will have a tour of the new display called "Artflight", a international competition in aviation art. There are some 87 pieces on display. This is a must see collection of paintings from Great Britain, Spain, U.S.A. and Canada.

Let us not forget "bring n' brag", prizes to be won.

Thank you to the members who have helped, your executive which worked so well together, John Jackson for the newsletter and website, he makes us proud to be a member, Rick Ramalho our CFI for diligent work and his instructors, Walter Hill and George Pepper for field work. Richard Robichaud for continuous effort and support. To those who contribute in small way during the year, much appreciated.

Happy Flying, Gerry Nadon

## Next Meeting

Tuesday, October 30<sup>th</sup>

7:30 pm

*Don't forget your "Bring'n'Brag"!*



Rick Bell earned the Pranged Pig award for September!

## Coming Events...

October 21 <sup>st</sup>	MAAC Zone Meeting
October 30 <sup>th</sup>	Elections
November 27 <sup>th</sup>	Regular Meeting
December	No Meeting
January 1st	First Flight

at the flying field at 9:00 am

Our website address: <http://www.stetsonflyers.com>

## Club Officials and Contacts

<b>President</b>	Gerry Nadon 824-9100 gerald.nadon@sympatico.ca
<b>Vice-President</b>	Peter Barnes 824-5352
<b>Secretary</b>	Erich Zappe 830-7549
<b>Treasurer</b>	Christine Devlin 830-7533
<b>Events</b>	open
<b>Chief Flying Instructor</b>	
<b>Field</b>	open
<b>Webmaster</b>	Roger Hiscocks 837-0186 hiscocks@idirect.com
<b>Newsletter</b>	John Jackson 445-5726 john.jackson@netmanage.com

### **Mailing Address:**

The Stetson Flyers Model Airplane Club  
P.O. Box 456, Orleans, ON, K1C 1S8

### **Web Page:**

<http://www.stetsonflyers.com>

### **Dues:**

\$55.00 per calendar year; \$30.00 for students under 18

### **Meetings**

The Stetson Flyers meet at 7:30 on the last Tuesday of each month, except for December, June, July or August. The meetings are held at the Canadian Aviation Museum in the Bush Theatre.

## Receive this newsletter via email!

Instead of sending a printed newsletter by Canada Post, we can send you an email notice with the web site address where you can download the newsletter each month. The file is an Adobe Acrobat PDF file, which means that you need to use a FREE Acrobat Reader software to view or print the document. There is a link to the Adobe site to get the FREE software on our web site.

The benefits to you are faster delivery, colour pictures, less cost to the club, and environmentally friendly to boot!

To receive the newsletter by email, send **your** email address to [john.jackson@netmanage.com](mailto:john.jackson@netmanage.com).

## Please visit our web site at

<http://www.stetsonflyers.com>

Our web site is hosted as a community service by  
**Magma Communications**  
(613) 228-3565

Would you like a member discount on your internet access? Contact club member Rick Ramalho at [rick@magma.ca](mailto:rick@magma.ca) to receive information on discounts for Stetson Flyers members.

## T-Shirts—2nd Chance!

Any members who missed the run on the Stetson Flyer shirts or would like another, can contact me (Doug Tufts) as I have five requests for another run. The shirts are \$20 each, and sweatshirts are \$35.

There is a minimum of 20 shirts per run. You can reach me at 613-745-0041 or e-mail [doug\\_tufts@hotmail.com](mailto:doug_tufts@hotmail.com)

## Moving to Electrics Sale

### **Planes with Engines**

Liberty Sport with K&B .61 ..... \$150.00  
DynaFlite Spitfire with OS .40 FP ..... \$125.00

### **Engines**

OS Max .25..... \$40.00  
K&B .20 Sportster..... \$60.00

Contact Dell Pehresson at 837-3332

Looking for event dates for other clubs in this area? Check out the calendar on club member Darcy Whyte's web page:

<http://www.calmdays.com/h/cd/calendar.asp>

If there is an event that is not listed, you can add to the calendar at the top of the page.

**For Sale:** If you have something you would like to sell, feel free to send me the details and I will add it to our next newsletter!

## Minutes from September Meeting Aviation Museum

1.0 Gerry opened the meeting welcoming all in attendance as well as visitors.

1.1 Minutes published in the newsletter accept the minutes, seconded by Mike Ingham and Paul Bettez, was passed.

1.2 Christine reported that the bank balance was currently at \$6200.00 and the GIC's value is \$6280.00. Membership stands at 117.

1.3 Christine reported that the Turkey Shoot Funfly earned a profit of \$36.41.

1.4 A motion to accept the treasurer's report was seconded by John Jackson and Tom Saunders and was passed.

1.5 John Jackson reported that he has received many contributions for the newsletter. Some members reported having difficulty opening the last newsletter. This may be due to viruses that are affecting downloading.

1.6 John also added that he will be updating the website and will welcome any suggestions. He compiled some photos from the Giant Rally to produce a panoramic view of the field. This will be on our website.

1.7 Rick Ramalho reviewed the training nights for the past season. There were 16-17 students with 9 receiving their wings. Only 3 Tuesday nights were missed all year. It was a successful year, Rick thanked all those that helped instruct.

1.8 Gerry entertained a motion for the club to have a funfly on October 13<sup>th</sup> to celebrate our 25<sup>th</sup> anniversary with rain dates to make up for our cancelled June Funfly. It was moved by Ed Whynott and seconded by John Jackson and carried.

1.9 Canada Day was a success this year at the Aviation Museum. Gerry thanked all who helped out including the pilots of the flying demo, and those that contributed to the static display. Gerry had received a letter of thanks for the club's participation from the museum.

2.0 Ken Langille spoke on this year's pattern event. They had 25 participants and everyone had a good time. A financial report is still to come.

2.1 Jim Brown thanked Christine, Terry Satchell and John Jackson for their help in the Turkeyshoot event in August. There were 27 people registered with 40 planes. Visitors from out of town really enjoyed the event.

2.2 Gerry reported on the Giant Rally. A successful event with 51 pilots and about 65 planes. There were 92 tickets sold for the dinner. Profits for the weekend was \$1000.00. Donations were received from our MAAC zone director for \$150.00, our IMAA chapter for \$100.00 and Dave Asquini. Thanks were offered to those that helped out before and during the weekend. Members congratulated Gerry on his work in making the event so successful.

2.3 Members were asked to add reports on events they attended out of town. These included Kitchener Scale Event, Cape Breton Funfly, Brockville, and IMAA meets in Toronto and Kingston.

2.4 Gerry reviewed the work that has recently been done at the field. The brushcutting was done with a disc cutter, ditches were dug, ditches along Frontier Road were cleaned, some low levels filled in, gravel for the driveway and parking lot was added, and other field refinements were done. Walter Hill, in coordination with Gerry, has been doing the work and providing the necessary machinery. To cover the costs Gerry made entertained a motion for spending an additional \$2000.00 over the budget's allocation for the field. This was moved by John Jackson and seconded by Marc Shaw and was carried.

2.5 Gerry thanked Doug Tufts for the T-shirts and Sweatshirts as they are noticed when they are worn at out of town events.

2.6 Gerry announced that a club member, Ed Skomorosky had passed away in August.

2.7 The Annual MAAC Zone Meeting will be held on October 21 at the museum. Our zone director will contact members with the details.

2.8 Gerry asked members to avoid the power lines as we will be liable for any damages to them.

2.9 Richard Robichaud of Discount Hobbies offered all students for next year, one free week of use on a R/C Flight Simulator to help them out.

3.0 Rick Bell was awarded the Pink Pig after much discussion on which candidate was most deserving.

3.1 The meeting was adjourned. The Bring'n'Brag followed with a current film on Canadian Bush Flying.

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## Range Testing your Equipment

Many, if not most, intermediate-to-advanced modelers have developed some system for checking their battery condition. And rightly so. Batteries, from what I can tell from my 30 years of flying, are still the number one reason guys experience catastrophic failures.

In solving the battery dilemma, most fellows know a numeric value of their battery capacity through use of a cyclor. For example, if I ask a guy what his battery is, often times he'll say "I have a JR Extra 1800, and it checked out at 1790 last time I cycled."

Perfect. He's taken the time to get a handle on exactly what his equipment is doing - a great way to save having to re-build a model. Then, if checked before every flight with a battery tester, the chances of having a problem are virtually nil.

Oddly enough, if I ask the same guy how his range checked out, he'll say "okay - fine - pretty good" ... all qualitative answers. The reason why is clear - there exists no standard system for how to quantify range. This article is an effort to develop such a system. While most of the concepts are directly applicable to FM, we're going to utilize the "Fail-Safe" system that's exclusive to PCM users to help establish a criteria for measurement.

### Range testing is comprehensive in nature

Unlike battery testing, which is focused on one issue - battery capacity, the range test is very comprehensive, taking into account a host of different aspects critical to the success of your model. There's no doubt that many modelers are successful without performing a range test. But having performed some "post mortem" reviews of models that met their demise, it's clear that many may have been saved had the modeler performed an adequate test.

While it's nice that many modelers have confidence that their JR equipment "has worked flawlessly in the past" and therefore conclude it should be true in the future, it just isn't so. As the sophistication of modeling increases, the number of variables that affect radio performance increase. JR builds a superb system, but even the best receiver in the world isn't going to be able to reject the interference caused by a 35,000-volt spark ignition system that's placed in close proximity to the receiver. That's a gross example, but there are many other examples of model-

generated RF, the cumulative effect of which is to degrade radio range. In polling JR team members, all agreed that model-generated interference is equal to or more common than product-related or extraneous interference.

The ONLY way to test for model generated interference is through an engine-on range test. Clearly, the more expensive the model, the greater the need for a comprehensive range test. What's more, AMA safety rules wisely call for every model to be range tested. Let's get on with it.

### Why PCM? Why the range test is an important indicator with PCM

These days, top-level modelers use PCM. Frankly, I can't think of one who doesn't. The reason is simple - PCM provides superior control for our sophisticated models. FM is fine for sport models, but as sophistication grows, so does the need for PCM. While some mature modelers are still leery of PCM - due to lock-out experiences with other brands 15-20 years ago - today's PCM equipment can't be beat for keeping your model under control. That having been said, it's also true that PCM can, and will, go into "hold" (or fail-safe - a preset user programmed position) if it does not receive the correct coded signal for a given period of time. Symbolically, one could think of going into hold as the same thing as "going over a waterfall". The purpose of the range test is to give us an indication of "how close we are to going over the waterfall". Good ground range indicates that the system is strong - it will take considerable interference from outside sources to cause the model to go into hold. Poor ground range does not mean the model will crash, only that it is more susceptible to outside interference - the smallest interference might cause the system to go into hold. Because models are so tough to come by, personally I prefer robust ground range!

### The System.

Normal technique for range testing calls for the operator to wiggle the stick, and a helper to determine whether the system is working or not. Problem is, they aren't connected. The helper doesn't know what inputs are being provided, so determining when the signal is lost is murky. To address this issue, the method suggested here uses the fail safe part of your radio to determine the exact point where the radio loses range. By programming the elevator to kick "up" when the signal is lost, it becomes perfectly clear where the exact point is - allowing us to quantify the results. In a sense, this is a parallel to choosing a .9 volt/cell cutoff point for battery conditioning.

## Site Selection

Your flying field is best, but to do this right there must not be any other transmitters on while you're testing. The reason? Their antenna will be up and they'll be putting out high power compared to yours. Will it affect your model? Not necessarily, but possibly. Next best is an area where you can control the variables. The point is to get an area where you can have consistency - year-after-year. You want the system to be repeatable, to look for changes that might be an indicator of degraded performance. (Note: Horizon's R&D manager, John Adams believes the field is far and away the best choice because it will give you an indication as to whether any site-related interference exists.)

### 1. Place the model perpendicular.

Place your model perpendicular to the direction you'll be walking. Which side faces you should not be an issue (test it if you're concerned).

### 2. Program Up-Elevator Fail-Safe.

Program your radio so that when you lose your signal, the elevator goes full up to provide your helper with an easy indicator of when you lose the signal (don't worry, we're going to take this out in the next phase!) It's pretty easy with both the 8103 and the 10X systems - after a few tries it'll become second nature. To check that your fail-safe is programmed correctly, simply turn the transmitter off - you'll see the programmed surface move to its commanded position.

### 3. Collapse or Remove Antenna.

There seems to be a lot of confusion regarding whether one should check range with antennas installed or removed.

Here's the correct method:

JR 10 channel transmitter: Antenna REMOVED

All other JR transmitters: Antenna COLLAPSED

Because of the 10X's unique ball-swivel feature, the transmitter's output without the antenna installed is roughly equal to all other transmitters with their antennas collapsed.

Worried about hurting the 10X's output? Don't be. It's true that lengthy, continuous operation of a transmitter without the antenna places extra load on the output transistor in the module. Your module will get hot and it is the heat that weakens the transistor. But for short periods - 5 minutes or less, heat build up is minimal and not a factor.

### 4. Hold the transmitter at arm's length, facing the model.

This helps with consistency - see "Variables" text.

### 5. Walk backwards until the programmed surface deflects

Once the receiver goes into hold, drop your hat to mark the spot where it went into hold. This is your reference point. Record the feet (or paces). You now have your engine-off value.

### 6. Re-program Fail-Safe for engine idle

Remove the surface deflection you used in the engine off test and program the radio to go to low throttle (idle) in hold. This is a good habit more and more modelers are following - not only for an indication of when your model is at the limit of its range (without affecting its direction of flight), but for good common sense and liability protection.

### 7. Perform the exact same test with the engine running at mid-power

Next, start your engine. Have a helper restrain your plane, or use a nylon rope with a sturdy stake to hold your plane in place. Advance the throttle to mid or full throttle and then with the transmitter held in the same manner as the earlier test, walk backwards until the engine drops to idle. Mark the spot again, and record the feet (or paces) heading back to your model.

Your range testing is complete. Whether you re-program your model to remove the throttle fail-safe is your choice. Most professional modelers I know choose "hold" for all functions except throttle - which is pre-set to idle.

Think your restraining system won't affect your range? Think again. When our Advance 40 was restrained by the Midwest Aero-Mate, we got a reading four times what the range was when restrained by just a nylon loop. Evidently, the metal yoke radiates the signal, giving you a false reading.

### What's Good Range?

" If your engine-on test loses more than 20% range, investigate." You should now have two sets of numbers. Ideally, they'll match. Most times, especially with spark ignition engines, you'll see a slight reduction in ground range. How much is too much? Here's a rule-of-thumb most fellows are following:

The thinking is that a 10% error could be due to the

testing system. However, I've seen some fellows who've had their engine-on test result in 1/3rd the range of their engine-off test - a clear indication that something isn't right.

### **So the big question is: what is good range, and what's a minimum to fly?**

Variables are going to contribute greatly to the numbers you've received. I've had some basic sport models; tested on blacktop, with perfectly tuned systems exceed 500 feet of ground range. How low to go is largely a personal matter, reflecting your personal desire to accept risk. In polling most JR team members, internal and external, the rule that most seem comfortable with, measured under "normal conditions"- grass, level, model on ground is this:

Minimums:

Engine off: 175 feet (60 paces)

Engine running: 150 feet (50 paces)

### **Variables that affect Results:**

Besides the basic equipment-related issues that affect the core of range testing (receiver tuning, TX tuning, antenna placement, etc.) there are a significant number of variables which will affect the number you receive - all of which point to using the same location, the same methodology, if you are going to measure performance on a year-to-year basis.

### **Surface type: Significant**

At a local private airport, we tested models on the closely-cropped grass. At the extreme end of the range, we then walked onto the center of the runway - and proceeded to get 20-30% more range consistently. So the surface over which you test your model DOES make a substantial difference. Grass gives shorter numbers than blacktop.

### **Model height: Significant**

Usually, for convenience, we put models on the ground. However, depending on the size and placement of the receiver in the model, we usually see an increase when the model is placed on a non-metallic table. Needless to say, this more accurately reflects the model's actual flight conditions. However, it's important that the table be sturdy enough to handle engine-on testing.

### **Transmitter height Somewhat significant**

When you reach the limits of range, a transmitter that is low will have less range than one that's

held overhead. Holding your arm out horizontally removes a variable.

### **Surface slope Significant**

We discovered that a sloped surface can affect range. When the transmitter was below the model, we measured less range than when the transmitter was above the model. In the case we tested, our range varied by about 20% simply by swapping position of the TX and model.

### **Modeler proximity Potentially significant**

We've found that often, the location of a modeler's hand around the fuselage where the receiver antenna is located will increase range falsely. It seems that if modelers are standing around, there is no significant change. But having someone hold your model around the antenna is not optimum.

### **Transmitter/Receiver voltage Insignificant**

Common sense would dictate that higher voltage would improve range, but it just isn't so. We did a range test with a 10X that was beeping due to low voltage (8.9 volts) and found the range to be virtually identical to an 11 volt transmitter. Voltage of the receiver pack also had no affect on range.

### **In Conclusion**

Range testing is a technique. Like all modeling techniques, it's open to interpretation and adaptation. I've checked this system with some of the top radio guys in the country and they've given it a "thumbs up" for methodology. So before you deviate, you might try it this way first.

If nothing else, hopefully you will have improved awareness of the range testing process. Most JR flyers I've met are interested in high performance, and as a whole are better-than-average modelers. I hope this will help protect your investment.

## I Crashed!! & %#\*!!~^\$

Don't sweat it!! It happens to everyone at one point of time, and repairing the damage is not as hard as it may appear to be! I'll outline the damage by sections, and techniques from one section can be used for other areas on the plane. The most important thing to remember is to retrieve all that you can after the crash, as broken pieces can serve as a guideline or even a pattern for rebuilding parts.

### The Tail feathers

If a break occurs in the horizontal or vertical stabilizers, it is imperative to get them fixed. The severity of the break directly relates to the plan to fix it.

### Major Damage

This is when the stabilizer is dangling by a couple of wood fibers. The best thing to do here is cut the better part of the covering away and remove anything that doesn't appear to be solid. Then you go to the hobby shop and get some more balsa. Using the broken pieces as a guideline, construct a new section of that particular stabilizer. Now square up the remaining parts on the plane and glue the new section into place. Be sure that the new portion is level (a hobby triangle works good for this) once the CA has cured, glue in some reinforcements (1/2" x 1/4" balsa works well). Now re-cover the new section and you're all set. In some cases, if properly done, this will be stronger than the original structure!!

### Minor Damage

This is just when the stabilizer is merely cracked or a piece is broken. If you are not concerned with appearances and the break isn't in a high stress area, sometimes you can throw some 6 oz. glass cloth over it, smooth it down and call it good. In other cases, you cut away a small area of covering, glue it together and reinforce it a little. This can actually be done at the field, and a total of 10 minutes flying time is lost!

### Fuselage

There really is no "minor" damage to the fuselage, and access is limited. If looks aren't an option, just wrap some glass cloth around the break (most damage is caused when a glue joint comes apart) and epoxy it together. If looks are important to you, and you can access most areas of your fuselage, here's what you can do.

Take the wing (or hatch) off and find the area of the break. Depending on which is easier, you can either glass the inside corner of the fuselage or use my method. My method is to get a 12" (or however long you need it to be) of square balsa and glue it into the damaged corner of the fuselage. You can use CA if it is a small piece, but I prefer 6 minute epoxy for a little more

working time.

### Firewall

The key thing to remember here is that you can not repair a damaged firewall. The best thing you can do here is get yourself a piece of 3/8" plywood from the hobby shop and build a new wall. Use the old wall for a template for bolt positions. One hint is to cut the new one slightly larger than the old one- you can always remove excess, but you can't add to it! Be sure to sand it down to a perfect fit, because the firewall is the most stressed piece in the whole plane. Once you get it to fit exactly into the opening, reinforce the fuselage with scrap balsa and glue it in place with 24 hr. epoxy. (note.. if your plane had any offset thrust built into the firewall's mount into the fuselage, you may need to shim the mount in order to offset thrust with the new firewall.)

### The Wing

Who hasn't touched a wing down during a rough landing!?!? Definitely the easiest to bruise, but also easy to fix.. There are many areas to damage the wing, so I'll divide it up..

### Wing Tips

Hands down the easiest to crunch! However, they are also a snap to fix. If you just crush the tip, but don't damage the outer rib. you can just cover over the damage and forget about it. If you damage the rib, just reinforce the rib with either thick sheeting, or make a "new" rib and glue it over the old one. Not a huge problem!

### Sheeting (Top or Bottom)

Like the tips, if there is only a minor brush or a small hole, just cover over it and forget it! In fact there isn't much you can do to repair sheeting, and if there is enough major damage to the wing surface (ribs, sheeting, etc...), you might as well build a new wing or a new plane.

### The Mount Plate

This is a little tricky to do, but can be the key to salvaging a semi-totaled plane. If you rip the mount out of the fuselage, build another one. Keep in mind the room it takes for servo throws and your spacing for the mounting bolts. The best way to build a new mount is with 3/8" plywood. When installing the new mount, it is best to reinforce the area (especially if the fuselage is made of balsa) with thin plywood (1/8") Use 24 hour epoxy and make sure the bolt holes line up properly!!!

If you damage the mounting holes in the wing itself, you may be up a certain creek without a paddle! If there is a way you can alter the mount in the fuselage and make a new hole in the wing, that is the way to go. A good tactic for this is to change blind nuts in the fuse mount plate to meet the size that the new hole in the wing would provide a match for. If the mount in the wing is too damaged, you may be better off investing in a new kit.

**Source :** <http://members.tripod.com/flyboy19/>

# October 6th Anniversary Fun Fly

