

*For a full color version of the IRCC newsletter go to our website, and follow the newsletter link. A color version may also be printed from the website.*

## **Touch & Go**

*By: Scott S. Smith, - President*

I would like to start out this last column by simply saying, thanks. Thanks to all of you for making this an enjoyable experience of being your president. I could not have done it without the support of all the officers and directors that stood by me, and offered advice when I needed help. For all of the members that really pulled together, and made a conscious effort to return this club to a fun place to hang out and gather, I hope we can keep it that way. To all the volunteers who put in their time and effort to help with our events, we are all in your debt. We have put together the most productive 3 years this club has ever had, and it is all because we all pulled together as a team. As we look forward to the future with hope and optimism, lets not forget that our success is thru unity, and with unity the real fun of our sport can shine thru and we can accomplish anything. We are on the road to once again being the best club around, and I for one will not turn back before we are the best club, period.

Were you at the 2004 Heli Spectacular? Doug put on another first rate show, and another big success. This event is still one of the best fun-flies in the country, and is a great time for all who are involved in it. Thanks from all of us Doug. As most of you know we have another event just a few weeks away, the winter IMAA fly in. David has put a lot of effort into this event and he now needs all of our help to pull it off. Get with David and see how you can assist him in putting on a first class event. Along the same lines, I am planning my first event. Pylon racing will make its return to IRCC on February 26 – 27. I will be in need of 10 guys to do some course judging who would love to have the best seats in the house! The jobs are really easy, I will have you sitting in the shade with constant radio input and you will be far away from any real danger. Sound like a good time? You bet it is! If you aren't so sure about racing yet, this will make you a believer! Come be a part of something that used to put IRCC on the map and is probably the most fun you can have at the field with your clothes on!

In closing, let me once again say thanks. I am proud to be associated with all of you, and I hope you have the same feelings toward me. It has been a

trying time in my life with all the turmoil my life has been in the last few years, but you have all been there to help me thru. I will always be in debt to each and every one of you. You have given me a reason to strive to be a better person, and as always .... I will see ya'll at the field...

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The 2004 Helicopter event was a great success, there was 91 registered pilots with approx. 300 helicopters.

On behalf of Jerry Hicks and myself a great big thank you to the members that worked like troopers to make it work, Lynn Stenger, Jane Urick and Alice May were the ladies that were present both days doing registration, food and raffle ticket sales.

For those that want T shirts see David DeWitt. See you at the next club meeting.

**Doug Bruns**

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## **We Need Your Help Lost but Hopefully Found !!**

Jim Urick has put together a very nice collection of model aviation video tapes for our club. Over the past few months Jim has loaned many of these to various IRCC members. At this point there are many that have not been returned. If you have any of the video tapes that Jim loaned out, please return them to Jim or Scott Smith as soon as possible.

These are club property, and were not intended to be a give away.

*Thanks in advance for your assistance.*

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P.O. Box 6662  
Lakeland, Florida 33807

**PRESIDENT:**

**Scott Smith**

863-670-5141

[ssmith4710@aol.com](mailto:ssmith4710@aol.com)

**V.P. Jim Urick**

863-858-4741

[iflyrc@earthlink.net](mailto:iflyrc@earthlink.net)

**SECRETARY:**

**Dee Miller**

863-644-3866

[aquaclean@tampabay.rr.com](mailto:aquaclean@tampabay.rr.com)

**TREASURER:**

**Dave DeWitt**

863-644-3815

[benz425@aol.com](mailto:benz425@aol.com)

**DIRECTORS:**

**Dr. Art Magerino**

**Arnold Schmidt**

**Charlie Patterson**

**FMO**

**Dale Anderson**

863-648-0422

[dalejanderson@earthlink.net](mailto:dalejanderson@earthlink.net)

**SAFETY OFFICER:**

**Rick Ruede**

863-682-7210

[ruede@tampabay.rr.com](mailto:ruede@tampabay.rr.com)

**MEMBERSHIP CHAIRMAN**

(Looking)

**NEWSLETTER EDITOR:**

**John Burdin**

863-648-9933

[jwburdin@tampabay.rr.com](mailto:jwburdin@tampabay.rr.com)

**Website:**

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

*Courtesy and  
common sense makes  
R/C modeling fun for  
everyone.*

As always, contributions to the IRCC Newsletter are a great way to expand the participation of IRCC members in their club. Articles, pictures, or other items of interest will be considered, and read by all. Send all such submissions to the NL editor.

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### **THE MOORMAN FILES: WING TIPS**

**By Ed Moorman**

Wing tip shape has a large input to air plane drag. They also have a big influence on roll rate. Since I have mentioned roll rate, I'm going to relate a story about how I learned this from experience. This occurred in the 1975-1976 time frame. I had an original design plane with a low aspect ratio (3.5:1), a 48 inch span, low wing. It originally had the sort of swept back, "Fokker style" wing tips you normally see on Stick type planes. The plane was very maneuverable, had a fairly fast roll rate and I snapped and spun it regularly. One Saturday I got a notion to try something a little different-end plates. That evening I took the wing and ran it through a band saw, cutting off the tips and reducing the span to around 42 inches. I then made some end plates from some light paneling plywood by tracing the tip rib and adding a half inch all around. Sunday morning I was out for a test. On climb out I tried a roll. It was so fast I was shocked. It must have been double the previous roll rate. OK, I shortened the wings some, but removing 3 inch Stick style tips shouldn't make that much difference. Next, I tried snaps and spins. No luck. The plane would spiral dive and barrel roll, but wouldn't stall enough for those maneuvers. I had actually lost wing area, but now could not stall! Landing was slower than normal. Wing tips do make a difference. Some years later a friend of mine, Bob Bruce, after watching my success with end plates, ran an experiment which I was able to witness. He made a rudimentary wind tunnel and tested several wing tips. He used a short wing section with replaceable wing tips. For visibility, the wing was Monokoted yellow. To be able to visualize the flow around the tips, he

glued bright red thread every inch or so along the leading edge of the wing. Several different designs of wing tips were used for the test. We didn't actually take measurements, but watched the flow as shown by the threads. As the angle of attack increased, you would see more flow outward and around the tip. At the same angle, different tips on the test wing would exhibit different amounts of outward flow. Increased outward flow should indicate a greater tip vortex and greater induced drag. The wing tips with the least outward flow should be the most efficient. The results we obtained correlated with my subjective results of test flying several different planes with different types of wing tips. Let's look at several different wing tips and how they perform. Balsa Block wing tips. A plain old one inch block is a pretty good wing tip. I saw some outward flow in the tunnel, but not much, indicating reasonable good efficiency. Planes I have flown with block wing tips have had good roll rate. They are also easy to make. Flat Squared Off Tips. Just a piece of thin plywood or quarter inch balsa on the end of the wing works pretty well. In the tunnel, it looked slightly better than the block tip. For this reason, I basically quit bothering with wing tips on my original designs. Just about anything you put out there makes it worse, so why bother. Swept Back or Fokker type tips. These aren't very good. Next to worst in the tunnel of the ones we tested. They do look sort of WW I style, but I don't think anyone knew much about aerodynamics at the time of those designs. Your best bet for a Stick is to leave these tips off, replacing them with sheet balsa or end plates. Rounded, 30's style tips. These were the worst. They showed the most outward flow. Planes I have had with curved wing tips were notorious for rolling slowly. If they are scale OK, but remember, they will add to drag and slow your roll rate. They are also the hardest to construct. End Plates. The best. There was no outward flow shown by the threads. Certainly, out past the thickness of the plate, there is outward flow, but close to the wing, no, it is fenced off. Bob was convinced. He won't build a plane now without putting end plates on it. Another flier in the club noticed our testing and did his own. He built a plane with flat tips and end plates

The IRCC monthly club meeting will be held at FTE near the Lakeland Airport. The next meeting will be on Thursday December 2<sup>nd</sup>, and starts promptly at 7:30pm. Bring a chair (if you want to have a seat).

he could screw on. He was also convinced, claiming a 5 mph difference in landing speed. Hoerner tips. These were originally designed by an engineer named Hoerner and are the curved down tips you occasionally see. The A-10 Wart Hog attack plane has Hoerner tips, as do some Cessna's. They are effectively the lower half of an end plate. I have made them fancy and I have glued on an end plate lower portion and haven't been able to tell the difference. Since they are only on the bottom, they only work when you are upright. They give you nothing when you are inverted. Only a few full scale planes fly inverted and do outside maneuvers like RC models. For this reason, end plates are a better choice for us. Winglets. This wing tip may be great for air liners, but they have two strikes against them in RC. First, they aren't very good inverted and second, they are easy to break off. Winglets are in more danger from hangar rash or being bumped at the field than any other wing tip. Some RC sailplane designers have tried them, but I haven't seen them myself. As an addendum, I'd like to add a couple of things you can do with wing tips with regard to rigging your plane. If your plane rolls in knife edge, a wing tip change might help. High and shoulder wing planes, like a Stick, normally roll in the direction of the applied rudder. When you do knife edge with a Stick, for example, the plane will try to roll out and you have to hold aileron against the roll to maintain your attitude. A way to correct for some of the dihedral and the high wing location is to add Hoerner tips, or the downward half of an end plate. These projections down from the wing tip actually have the effect of anhedral, canceling out some of the dihedral the plane has. On the other hand, if your plane has too little dihedral, a wing tip can add dihedral effect for you. An example of this would be a low wing plane built without dihedral or sweep. This plane will tend to roll OPPOSITE to the applied rudder! Adding a block wing tip which has been beveled upward at 45 degrees will have the effect of increasing the dihedral. You see these tips at the field all the time-many trainers have them. They are not for looks, they add effective dihedral. I will be writing another column in the future on these and other dihedral effects.

*Ed Moorman, AMA 553, IMAA 2540,  
(moorman@tsufl.edu)*

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### Monthly Club Meeting Minutes

November 4, 2004

*By: Scott Smith- President*

Meeting called to order at 7:35 PM by Scott Smith, President.

24 members were in attendance.

Motion to accept minutes and treasurers report was made, seconded by and passed 24-0.

Doug Bruns held a discussion on the Heli meet and made final arrangements for loose ends.

David Dewitt discussed the upcoming IMAA event December 4<sup>th</sup> & 5<sup>th</sup> and his plans for it.

Scott Smith announced a pylon race scheduled for Feb. 26-27 of 2005. Some discussion over Rick Ruede & Scott's performance at the last race was made.

A motion was put forth by Allen Sales and seconded concerning winter membership dues rate and a change to the IRCC Policies stating:

*Any person who is a primary member of an out of state club is eligible for a 6 month membership running from November thru April for the reduced amount of \$70.00.*

Discussion was made and then the motion was voted on. Motion passed 24-0.

The votes for the new officers for 2005 was tabulated and the results are:

President – David Dewitt  
Vice President – Jim Urick  
Secretary – Scott Smith  
Treasurer – Dale Anderson

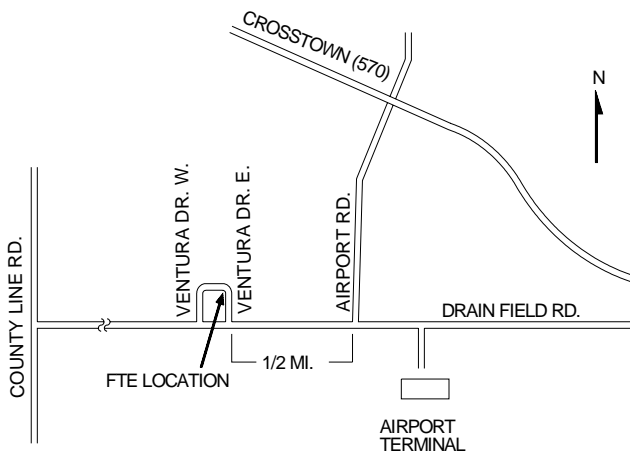
3 year director - Doug Bruns

The Sportsmanship award went to Doug Bruns for all his hard work to put on the Heli Meet for the club, we all appreciate his dedication.

Meeting adjourned at 8:50 PM.

*New members for consideration:*

Michael Benner  
Dewey Burden  
Lloyd Fogelquist  
Shaun Goeckner  
Gerado Hernandez  
Steve Jaworski  
James R Mahoney  
Jim Pozenel  
Ted Price  
Donovan Shaw



*This map takes you to where we have our monthly club meetings, normally held the first Thursday of each month. Remember to bring a chair.*

There are a number of other businesses in and around FTE. By the time our meeting time rolls around, most of the employees of those businesses should be gone home. This leaves a lot of parking, and a very short walk. Please **DO NOT PARK ON THE GRASS** at FTE or any of his neighbors

## December Meeting Agenda

**"Heli Spectacular"**  
Wrap- Up

### **Future Events**

IMAA and Pylon coming soon. Any ideas for other events may also be discussed.

### **Who's Building What??**

Bring your latest creation, and show the other members what you are doing.

*If you have a topic for discussion let Scott Smith know so he can put it on the agenda.*

## Coming Area Events

### **IRCC Winter IMAA Rally**

December 4<sup>th</sup> & 5<sup>th</sup>  
Dave DeWitt CD  
863-644-3815

[Benz425@aol.com](mailto:Benz425@aol.com)

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

### **IRCC Pylon Race**

February 26<sup>th</sup> – 27<sup>th</sup>  
Scott Smith: CD  
863-670-5141

[ssmith4710@aol.com](mailto:ssmith4710@aol.com)

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

### **Florida Jets**

March 3<sup>rd</sup> - 6<sup>th</sup>

Lakeland Linder Airport

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

### **MacDill AirFest**

MacDill AFB, Tampa

### **Sun 'n Fun Fly-In**

April 12<sup>th</sup> – 18<sup>th</sup>

Lakeland Linder Airport

[www.sun-n-fun.org](http://www.sun-n-fun.org)

### **Top Gun Invitational**

April 27<sup>th</sup> – May 1<sup>st</sup>

**OUR NEXT MEETING IS: December 2<sup>nd</sup>**

*Check out the directions to our meeting place.*