

# FlightLine

A Monthly Publication of Collins Model Aviators September 2000



## The Vice President's Column

Dear CMA

I assume that you noticed that last month we did not publish the FlightLine for August. ☹ I was not completely ready with my article, but as a good engineer I have reused some of the information from last month's article in this month. The reason for not publishing the FlightLine was that we had a busy month! I guess that's not a very good excuse but another reason was the late delivery of the July issue from Employee Services. If you got yours on or about the same time I did, you received it around the 3<sup>rd</sup> week of July?

Why do we print the FlightLine and mail it out in this day and age of the Internet and web pages? I have to admit I usually print my copy off the web when I see the new one. I print it to a color printer because I enjoy the seeing the pictures. I really don't like the black and white copies we get from employee services. Most of the time the pictures

are too dark and you can't even tell who or what the pictures are.

Jim Doty is our editor and publisher of the FlightLine, he collects the articles and puts the FlightLine together and then sends it to Employee Services for printing and distribution by mail. Jim also sends a copy to have it inserted on the CMA web page by Steve or Frank. This is why, in many cases, you see the new FlightLine on the web prior to your mailbox. Jim has a set of dates on the web page when articles are due. Based those dates he then takes the articles, such as the CMA president column and other articles, and puts together a great FlightLine. We also encourage members to contribute articles, to which we have had some success, but it has not been overwhelming! The FlightLine serves and supports our club, so member content is important. Please consider how you can support our FlightLine. I would like to thank Jim for his devotion to this task. Thanks Jim for your devotion!

I was talking to Jim and he mentioned to me that it might be a good time to consider stopping the use of employee services to print and distribute the FlightLine? This does not mean we stop publishing the FlightLine, only considering a new approach. One of the reasons I bring this issue up is that our club has really turned the corner on the use of the Internet. The CMA has both internal and external web pages and also an internal newsgroup, all of which are very up to date and complete. The only data that is not available externally to CMA members is the

CMA Web Page Addresses:

<http://bbs.cacd.rockwell.com/data/clubs/cma/>  
<http://members.xoom.com/cma3257/>



Collins Model Aviators  
Academy of Model Aeronautics  
Charter Club #3257

“collins.rec.model.avaitors” newsgroup. The web page allows people from outside, as well as inside, to access the past FlightLines and myriad of other information sources. The links and articles are helpful to both the new and the well-established RC modeler/flyer. I noticed that we have an archive of the FlightLine going back to January of 1996 on our web page.

One of the advantages of working with employee services is that they print and distribute the FlightLine and cover the cost. The other advantage is that we get a hard copy mailed to current employees at work and retirees at home. Should we consider stop sending the FlightLine out through employee services? If you want the FlightLine in hard copy format you can just print it off yourself, or just read it off the web. Is there anyone in our club that is not on the Web? One of the advantages of this would be that it allows more time to publish the FlightLine and we would have less dependency on employee services. Going to a totally web based publications could also eventually allow searching and sorting based on the article content or topics. Your thoughts are greatly appreciated.

### Baseball Caps

I had mentioned the idea of generating a little club identity through the use of Baseball caps with our CMA logo on them. I have been able to get two prototypes of the caps (see photo) from Needle and Thread Embroidery of Robins. Shirley Strauss, the owner, was nice enough to put two samples on baseball caps and one on fabric. The cost of cap with the embroidered logo is only \$10.00. She has a variety of colors for hats. The samples are on black, tan, and navy blue. She is also willing to provide polo shirts, and jackets with a variety of sizes and colors. The sizes/cost for the polo shirts are:

Small to XL — \$24.95  
2X — \$25.95  
3X — \$26.95  
4X — \$27.95.

I am trying to put together an order for the caps. Drop me an email and tell me how many and the color. I will need your money prior to ordering the FlightLine

hats. I am planning to have the hats made and delivered at the Fun-Fly, so I need your order before Sept 15<sup>th</sup>. The hat would make a perfect addition to your flying attire at the field, or other RC events.



If you would like to see the caps here's Jamie with navy blue one and me with tan. I like navy blue myself.

**Gregg Lind, CMA Vice President →**

## Fun-Fly Perspective

by Gregg Lind

I want to discuss the Fun-Fly. Jamie, Chris and myself sat down to discuss this year's Fun-Fly and had the idea of trying to put together some reusable contest rules and suggestions that could be used from year to year. I was new and really did not understand what needed to be done, or how we should organize the event, so we sat down and discussed some different options. We discussed if a general set of rules and operational procedures that could be developed to insure a great Fun-Fly event. Then next year's Fun-Fly committee could use the information without having to try to develop it from scratch.

Here are some of the ideas that we discussed and about which we polled the CMA membership. Thanks for those that responded to our questionnaire.

**Fun-Fly - Questionnaire and comments from CMA members:**



**Elimination of the wife's raffle:** It's a nice idea. As I see it, I married my wife and it is my responsibility to keep her happy. So I think the elimination of the wife's raffle is a good idea? This is coming from a married CMA member. Nothing says we should not try to keep our wives happy, so don't take her out for dinner and movie and then say "I need to get some glow plugs do you mind if we stop at the hobby store?". This is a really bad idea guys, trust me on this one!

**The Fun-Fly should have aircraft kits for larger prizes:** Most members had responded that they want kits to be given away even if that meant that fewer prizes would be given. This also meant that most did not want fast build kits. The fast build kits allowed for more prizes but the CMA membership wanted traditional aircraft kits.

Most of the members responded that they wanted a prize for winning or placing in a flying event. This could include a gift certificate to a local hobby store or a prize that could be selected. Most members liked the idea of a gift certificate to a local hobby store to purchase the equipment they need.

The point was driven home that if you fly you should have an increased ability to win. That meant flyers should have priority over just members showing up to the event. This was based on the fact that they are putting their aircraft through some maneuvers that they might not normally do and potential loss of the aircraft. Also we are club based on flying model aircraft, can't argue. I do want to challenge the membership to consider this event as a public relations activity to get our new members and future members involved in the CMA.

**Gift to Owner:** We should support the owner of the field with some type of gift certificate or monetary gift during the year. Since the Fun-Fly events are a major cost of the club it might make sense that the Fun-Fly would include this in the budget.

## **This is how we incorporated the results into the Fun-Fly.**

- We have eliminated the wife's gift certificates.
- We are going with fewer, larger, aircraft kits. This may also limit our ability to host more than one Fun-Fly event year.
- We are going to give away gift certificates for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> place positions in the amounts of 7\$ for first, 5\$ for second and 3\$ for 3<sup>rd</sup>. For our Fun-Fly this year we are planning on 6 events for a total cost 90\$.
- For the prizes we are trying to get 3 aircraft kits and the appropriate number of gift certificates based on the number of events we have. This number would be adjusted based on the number of members and funds available.
- This year we are thinking of 6 events, with the following break down based on skill: 2 entry level (which everyone member should have the ability to fly), 2 intermediate level, and 2 advanced events.
- Every member that shows up will receive 1 coupon to place in a can/box for the kit he or she wishes to enter. A drawing can/box will be placed in front of the kit and labeled with the kit's name. Everyone that shows gets one ticket to place in the can/box of his or her choice. The Fun-Fly is part a contest and a social gathering for the club, so we don't want to exclude members that don't have a plane ready. This mainly applies for new members. We want to encourage all pilots to attend the contest even if you don't have a plane you will have a chance to win.
- Pilots get one additional ticket for each event for which they register. Meaning if you "plan" to fly all 6 events you will get 6 tickets. If your planes fails or your have mechanical problems you still get that number of tickets based on the events you registered for. This is on the Honor System, after the pilots briefing we will have a signup list for each of the events. Based on the number of events you registered for, you will get that

number of tickets to place in the drawing box/cans for the kits.

- If you place 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> you will get additional tickets to improve your chances of winning an aircraft kit. Currently we are thinking 3 tickets for 1<sup>st</sup> place, 2 tickets for 2<sup>nd</sup> place, and 1 ticket for 3<sup>rd</sup>. Pilots that fly will have a better chance to get a prize based on placing in an event and by simply participation. Meaning if you win an event you have better odds in winning. You can put all the tickets in the can/box of one kit or spread them around any way you like.
- The use of the Club Trainer has been a debated issue. It is the current leadership's desire to allow the club trainer to be used for the two entry-level events. The use of the trainers would be for maneuvers that would normally be performed on a training night. This would allow those members that don't have an aircraft to participate. We are stilling working through this with the senior flight instructors.
- All registered pilots should have the capability to participate in at least the two beginner events (with or without buddy box, and take-off/landing performed by soloed pilots). All new CMA members should be able to fly and participate (Depending on available trainer aircraft or members allowing other members to fly their aircraft). Additionally non-soloed pilots are allowed to enter other events with the help of a soloed pilot.
- A CMA member, including any provisional members, can only win one aircraft kit per family. If during the drawing process a member is selected who has already won a kit they have first right of refusal. Meaning that if the family wins again they have the ability to choose which aircraft kit to keep. A new winner will then be drawn (from the remaining tickets in the box/can) for the kit not kept.
- The aircraft kits will be based on Trainer level, Sport, and Advanced level capabilities.
- If you place 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> for an event you will win a gift certificate to a local hobby store. All events will have prizes of 1<sup>st</sup> = 7\$, 2<sup>nd</sup> = 5\$, 3<sup>rd</sup> = 3\$ with a gift certificate to a local hobby

store plus paper award suitable for framing. The family rule for kits does not apply to gift certificates or other prizes. A family may take home any combination of positions for any number of events.

- All members regardless of full/provisional status will share in all prizes as long as they are registered pilots. Only one aircraft kit per household. Commodity prizes will be given away by simple raffle after the event. This year we don't know yet if we will have any general prizes, it depends on the hobby store and their willingness to prove extra prizes, and on our account funds.
- The aircraft kits will be given away by simple raffle from the can/boxes at the end of the Fun-Fly event.
- We will determine, based on our operating expenses, whether to purchase a gift certificate for the owner.

As part of the Fun-Fly event we would also like to encourage the social aspects of the club, thus allowing family members and others to enjoy the fun of the day. This includes getting together for a picnic and also coming out to the field to enjoy the flying events. We have limited facilities at the field such as picnic tables, grills, and play areas for young kids. We have been considering hosting the picnic at a local park during the lunch hour prior to the afternoon's flying. A sample agenda for the Fun-Fly follows. If any of the members wishes to get involved selecting Fun-Fly events, or wishes to perform a demonstration during the Fun-Fly please let me know..

Gregg Lind, CMA Vice President →

## Agenda for the Fun-Fly

**11:30 - 1:30 – Picnic** — Social gathering food, fun and frolic at a local park in Cedar Rapids. Your current leadership committee hosts the picnic. This will be a potluck and grills will be provided.

**1:30 – 3:30** — Setup for field. Safety guard and snow fencing and Lawn mowed and field setup.

**3:30** — Register Pilots and lock up transmitters

**4:00** — Pilot and event briefing

**4:20** — Start your engines

**4:30** — Entry level events

Event 1 (TBD)

Event 2 (TBD)

Flight demo 1

Intermediate level events

Event 3 (TBD)

Event 4 (TBD)

Flight Demo 2

Flight Demo 3

Advanced level events

Event 5 (TBD)

Event 6 (TBD)

General raffle

Wrap up and clean up

**Gregg Lind, CMA Vice President** →

## **CMA Meeting Minutes**

By Chris Heald

**July 6, 2000**

Chris Heald called the meeting to order at 5:10pm in the Main Plant Cafeteria. There were 9 members and 1 guest in attendance. Chris presided over the meeting since both Jamie and Greg were absent. The minutes were read. Larry motioned the minutes be accepted as read, Crist seconded the motion.

The balance in the treasury was reported.

### **OLD BUSINESS:**

Gregg Lind made a chart showing the logo and some cost info for the club hats. Crist said he also knew of someone who might be able to make the hats for the club. Crist will look into this. Crist, Greg and Mark need to get together and discuss the hat topic since all three have ideas for the hats.

FlightLine

### **NEW BUSINESS:**

The annual Fun Fly was the main topic of discussion. Chris passed out a list of events and asked the members to suggest their favorite events from the list. It was decided to let the Fun Fly Event Committee choose the events.

A date and budget must be chosen soon. Chris will send everyone an email discussing the date and list of events. Chris will also confirm the club's treasury with Sandi Strike.

The current condition of the flying field was discussed. Steve said he made some 3.5 X 0.5 tires out of plywood. He thought the larger tires would help his airplane take off in the thick grass. He has yet to try his invention and will report his success once the first flight has been made.

Steve won the \$5 drawing again.

Larry motioned that the meeting be adjourned. Crist seconded the motion. The meeting was adjourned at 5:30pm.

**Chris Heald, CMA Secretary** →

## ***National Newsletter***

From the July 2000 issue:

<http://www.modelaircraft.org/news/letters/0700/0700.htm>

### **Secure All Nuts and Bolts**

If you are new to large aircraft and motors, you are soon to learn that vibration is one of your worst enemies. Things that you think can't possibly come loose, oftentimes do.

Check all nuts and bolts frequently! You will do yourself a big favor if you make sure that all screws, nuts, and bolts are securely fastened--not securely tightened--but fastened.

This is especially true when a metal screw or bolt is threaded into a metal nut or fixture. Fastening involves using compounds or adhesives (LOCTITE, RPV, PFM, CyA, etc.) on screw and bolt threads or using special locking nuts, such as



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those with nylon inserts. In extreme environments, or when resonance is just right, safety wire may be required. High-temp RTV (silicone rubber) works well in high temperature areas.

from <http://www.gsal.org>  
via DCRC Newsletter, Andy Kane, editor  
305 Natick Court  
Silver Spring MD 20905-5875

Editors note: I selected this article not for what it includes, but because I wanted to make an important point that is often not adequately emphasized in this and may other similar articles that I have read.

A couple of years back one of the guys at the field was flying an LT-40 trainer with a new engine. After a couple of times around the pattern, the engine started making a terrible racket, loud exhaust sounds and metallic rattling. Thinking quickly he shut down the engine and brought the plane in for a dead-stick landing.

We inspected the engine and found that one of the screws holding the muffler had sheared and the other was barely holding on by a thread. If he had left the power on for just a little longer, I'm sure the muffler would have fallen off.

The important thing to note is that the remaining screw was still being held in place with LOCTITE. The LOCTITE had done its job but the vibration had caused the surface between the muffler and the engine to wear. This wearing resulted in muffler loosening enough that the vibration damaged the screws and caused a failure.

The lesson is that LOCTITE does not replace tight, it only keeps you from losing what you already have. And if the surfaces of the parts are rough or dirty, you may not be able to put enough tension on the screw to keep wear between the parts from loosening the joint.

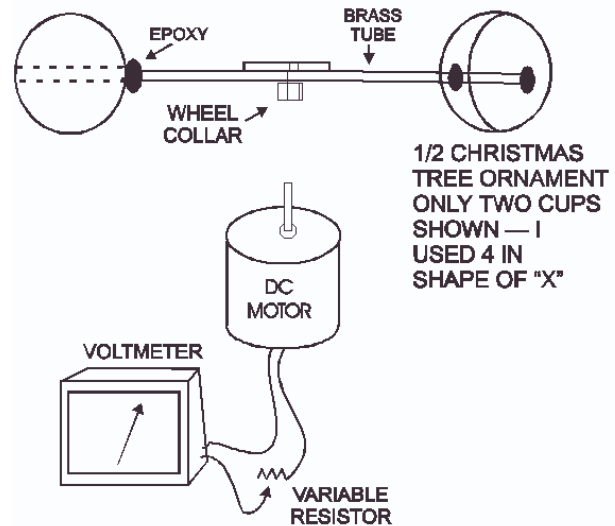
I recommend tightening all screws before break-in, retightening the screws before the first flight, and retightening them again after the first flight. After that, you can periodically check the screws, but they should not loosen much after the first few flights.

If you want to use a thread locking compound, select a softer thread-binding compound, not a hard staking compound like CA or epoxy. High-temperature RTV will add enough binding to keep the screws from backing out, but will still allow you to retighten the screws as the surfaces wear together.

I know that good machined surfaces, held together with adequate tension, should not wear enough to loosen the screws. But experience shows that you can't always expect that the surfaces will be perfect. A little extra tightening makes up for a lot of imperfection in the joint.

Jim Doty, CMA FlightLine Editor

### WIND METER



## Wind Meter

by Bob Czepiel

Many club members and even people from other clubs have asked about the wind meter (anemometer) I installed at Snead Field. "Where do you get the plans? What's it made out of? How do you calibrate it?"

Anyone with a little electronics skill can construct one. The total cost to build it is about \$35--even less if you have a good electronics junk box. Compare that price with a retail unit that normally sells for \$150 and up.

The original plans came from a Radio Shack book called Engineer's Mini Notebook Science Projects #276-5018. The version I have was published in 1990, and it is now out of print, but some stores may have one hidden somewhere. In any case, let me try and paraphrase the design, build and test process.

The heart of the sender that goes up on the roof is a small DC motor, such as the type used in electric cars and airplanes. Radio Shack is not very specific on this, so the only way to pick one is by trial and error, but most will work to some degree. It should have nice, beefy shaft bearings, as it is going to do a lot of spinning.

This motor is going to be used as an electric generator. No modification to the motor is required, except you may want to loosen up the brush springs a little so the motor turns easily. If the motor does not turn freely, it will take a strong wind to get the thing spinning. That is not what you are looking for. If you can't get to the springs, make the brass tubes that hold the cups longer. Normal length is about 12 inches between cups. You may have to go to 18 inches if you have tight brushes.

DC motors are linear, so, as the wind speed increases, the voltage output increases proportionately. This allows you to make your meter scale in nice incremental steps. I mounted the motor in a small aluminum BUD box, brought out the two leads, sealed the box with tape and mounted it on an 8-foot aluminum angle bar. The bottom of the bar gets fastened to the side of the building. You want the unit high enough so that the wind is not sheltered or redirected by the building or its roof.

The wind cups that spin the motor can be made out of many different items. I have found the larger, the better, and the more bullet-shaped they are, the easier they are to get moving. Radio Shack recommends using half of a container from a L'eggs pantyhose package. I used half of a plastic Christmas tree ornament that I bought at Michael's Hobby Supply. I used four of these halves, epoxied

to thin brass tubing in the shape of an "X." At the center of the "X," I soldered a wheel collar to mount it to the motor (generator) shaft. I soldered a copper-clad disk on the other side to reinforce the "X."

The receiving unit is just a plain old voltmeter (which is a DC milli-amp meter with a resistor in series). The bigger the meter, the easier it is to read. I put a variable resistor in series with the motor in order to calibrate the unit. The variable resistor size is a trial and error exercise.

Now comes the secret recipe. How do you calibrate the thing? Well, the most accurate way is to mount it beside a commercial unit, and tweak the resistor until the meter reads full-scale in a 50 mile-per-hour wind. Then, make a new face plate for your voltmeter, showing 50 miles-per-hour full-scale, and proportionally mark it off in five mile-per-hour increments.

What? You don't have a commercial unit to calibrate against? Also, waiting around for a 50 mile-per-hour wind may get a little boring. So, get a friend, get in your car, drive down a seldom-used country road on a still day, and have him stick it out the window and tweak the resistor to match your speedometer. I tweak mine at 25 miles-per-hour, so the meter shows half scale.

Now, just make a new meter face plate, put everything together with a lot of grease to protect the motor bearing, and you are in business. My original one lasted about five years before the bearing wore out.

from Georgetown Aero Modelers  
Association

Bob Czepiel, editor

[czep@Prodigy.net](mailto:czep@Prodigy.net) →

## Fuel and Air Leaks

Fuel and air leaks around sloppy-fitting needle valves can be stopped very easily. Simply wrap the threaded area of the offending needle valve with Teflon thread sealing tape. It is available

from most hardware stores. Stretch the tape slightly to get a tight fit, and apply only one layer of tape.

from News-O-Flyin'  
Jack Needham, editor  
P.O. Box 1463  
Lake Havasu City AZ 86403➔

## Washout

Have you been coming in long, low and slow, only to have one wing tip or the other stall? Does the airplane roll to one side faster than any other time?

To prevent this, you need to check your washout. Lay your wing halfway on a flat table, and hold it down near the center. Measure how high off the table the leading edge is, and then measure the trailing edge.

Compare this side of the wing with the other. If the leading edges and the trailing edges are flat down on the table, and both sides are the same, there is no problem. If you have, for example, one trailing edge up and the other down, you will have stalls.

The wing that is down is the one that will stall first. If you want your airplane to be a pussycat when it's time to land, give both wing tips up to a 3/4-inch washout. That means warping the wing to have the trailing edge stand up at the tip.

With washout at the tip, when you come to stall speed, the center will stall first and the tips will follow. If the tips are the same, your airplane will stall at the stall speed but won't be as likely to roll.

both above from The Pilot Log  
Isabella Rovoldt, editor  
1755 Hopkins Road  
Getzville NY 14068-0132➔

## Heads Up, CMA Activities

### September 2000

- 5-Sep 5-? PM Basic airplane training
- 7-Sep 5-6 PM Meeting 6-? PM Advanced airplane training
- 12-Sep 5-? PM Basic airplane training
- 14-Sep 5-? PM Advanced airplane training
- 19-Sep 5-? PM Basic airplane training
- 21-Sep 5-? PM Advanced airplane training
- 22-Sep 5:00 PM Flightline deadline
- 23-Sept. 12:00-? PM "Family Fun Fly Picnic"
- 26-Sep 5-? PM Basic airplane training
- 28-Sep 5-? PM Advanced airplane training

### October 2000

- 5-Oct 5-6 PM Meeting at Main Plant Cafeteria
- \*Nominations taken for club officers.
- 12-Oct 6-9 PM First Build Session
- 20-Oct 5:00 PM Flightline deadline

### November 2000

- 2-Nov 5-6 PM Meeting at Main Plant Cafeteria
- \*Nominations closed
- 9-Nov 6-9 PM Build session
- 17-Nov 5:00 PM Flightline deadline

### December 2000

- 7-Dec 5-6 PM Meeting at Main Plant Cafeteria \*Election held
- 14-Dec 6-9 PM Build session
- 22-Dec 5:00 PM Flightline deadline

## CMA voice bulletin board 295-8888

### ✉ Send your input for FlightLine to:

James H. Doty  
MS 108-205 x5-2931  
[jhdoty@collins.rockwell.com](mailto:jhdoty@collins.rockwell.com)

### Local Events:

**9/02/00 - 9/03/00** Sioux City, IA (C) War Eagle Squadron Fun Fly/Campout. Site: Club Field. Edward Nagel CD, 2821 S Cypress Sioux City IA 51106 PH:712-276-1646. Field is located west of town, from I-29 take Hwy 20 exit west approx 5 miles to a small substation. The 4-lane turns into 2-lane the last 1/2 mile, then south 1 1/4 mile, then west 1 1/4 mile. Sponsor: WAR EAGLE SQUADRON

9/03/00 - 9/04/00 BBelle Plaine, IA (C) Benton Co  
Propbuster Fun Fly. Site: Belle Plaine. David Wilson CD,  
6419 16th Ave Garrison IA 52229 PH:319-477-6241. Open  
flying both days 600x600' grass strip. Lunch will be  
available. Primitive camping on grounds. Sponsor: BENTON  
CO RC PROPBUSTERS

**9/09/00 - 9/10/00** Davenport, IA (C) E-FLI-OWA. Site: 7  
Cities Sod Farm. Jon McVay CD, 5 Hillcrest Hts Mt Vernon  
IA 52314 PH:318-895-6527. 2nd annual E-FLI-OWA.  
Further info - e-mail togflrier@aol.com or call/write CD.  
Sponsor: DAVENPORT RC SOCIETY

**9/16/00** Clear Lake, IA (C) RC Float Fly. Site: McIntosh  
State Park. John Matteson CD, 904 S 15th St Clear Lake IA  
50428 PH:515-357-6387. Sponsor: RIVER CITY RADIO  
CONTROL

**9/16/00** Ottumwa, IA (A) E.I.S.S. Fall Soar In for 441, 442,  
517(JSO). Site: Antique Airfield. Rusty Shaw CD, 5312  
175th Ave Ottumwa IA 52501 PH:641-682-1911. Sponsor:  
EASTERN IOWA SOARING SOCIETY

**9/17/00** Ottumwa, IA (A) E.I.S.S. Fall Soar In 2000 for  
444(JSO). Site: Club Field. Rusty Shaw CD, 5312 175th Ave  
Ottumwa IA 52501 PH:641-682-1911. Sponsor: EASTERN  
IOWA SOARING SOCIETY

**9/17/00** Mason City, IA (C) Annual Fun Fly. Site: Club Field.  
Ken Meyer CD, 640 Southview Dr Rockwell IA 50469  
PH:515-822-4755. Fun event for all pilots of all ages and  
skill level. Sponsor: RIVER CITY RADIO CONTROL

**AMA events web page:**

<http://www.modelaircraft.org/Comp/Contest.htm>

**For an AMA membership application:**

<http://modelaircraft.org/Mem/Memapp.htm>



**Send your input for the CMA Web Page to:**

Steve Plantenberg x5-9625  
scplante@cacd.rockwell.com

### **★2000 CMA Staff**

President:	Jamie Johnson .....	x5-0984
Vice President:	Gregg Lind.....	x5-0008
Secretary/Treasurer:	Chris Heald.....	x5-0793
Field Marshal:	Mark Woytassek..	x5-4332
Safety Officer:	Crist Rigotti .....	x5-0612
FlightLine Editor:	Jim Doty .....	x5-2931
Web Page Editor:	Steve Plantenberg ...	x5-9625

#### **Senior Flight Instructors and Test Pilots**

First flights of new airplanes:

Frank Gutierrez

Mark Woytassek

First flights of new helicopters:

Crist Rigotti

Flight Instructors in training:

Irv Anderson

Jamie Johnson

Steve Plantenberg



**For membership information:**

Contact: CMA Secretary Chris Heald  
MS 105-191, x5-0793

[cdheald@collins.rockwell.com](mailto:cdheald@collins.rockwell.com)



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## **2000 CMA Friends**

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**Academy of Model Aeronautics  
5151 E. Memorial Drive  
Muncie, IN 47302**

**Box-Kar Hobbies  
3661B 1st Ave. S.E.  
Cedar Rapids, IA 52402**

**H & J Hobbies  
Marion Heights Center  
Suite 1185 Grand Ave.  
Marion, IA 52302**

**Hobbytown  
2737 16<sup>th</sup> Ave. S.W.  
Cedar Rapids, IA 52404**