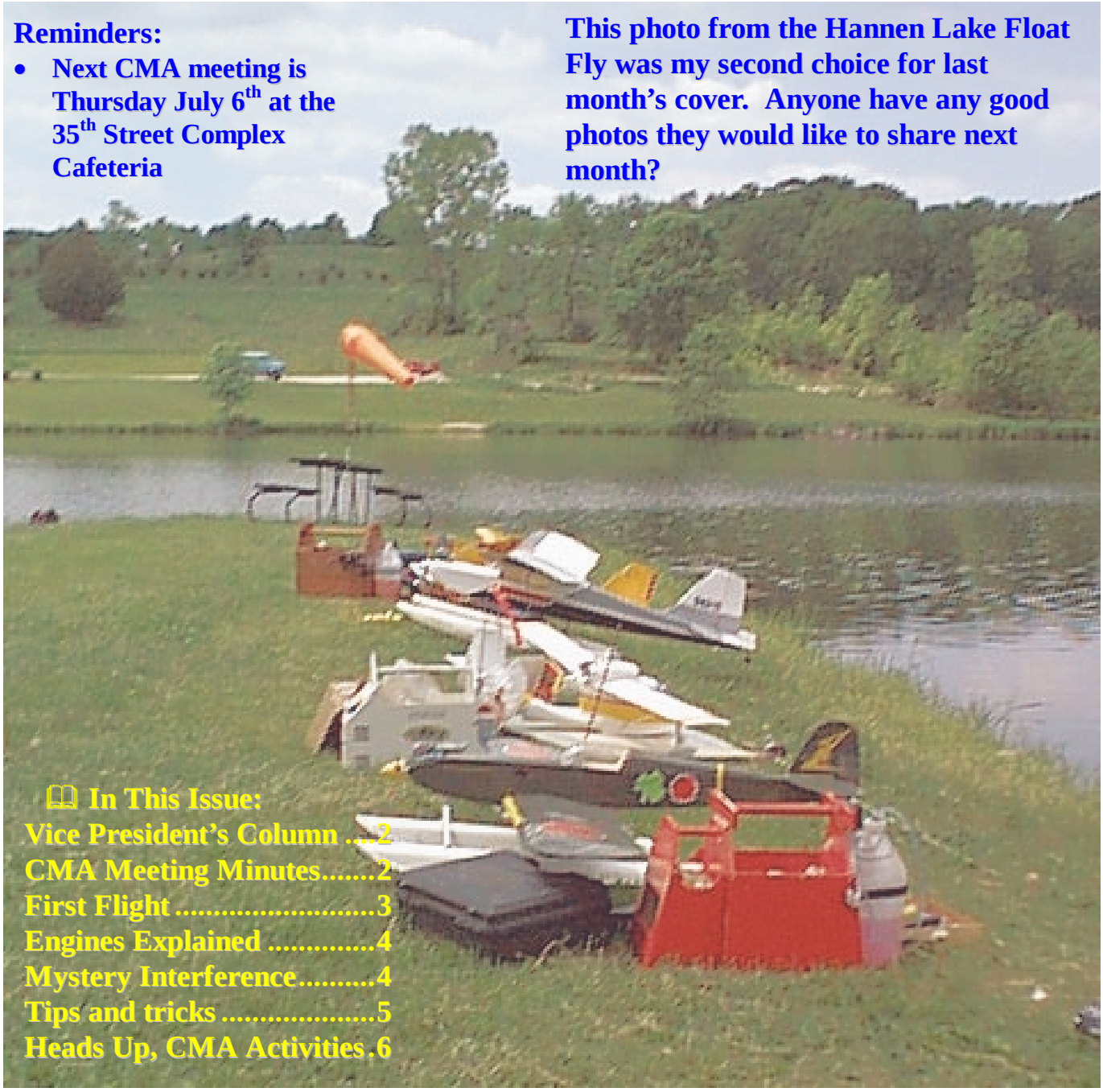
FlightLine

A Monthly Publication of Collins Model Aviators July 2000



Reminders:

- **Next CMA meeting is Thursday July 6th at the 35th Street Complex Cafeteria**

This photo from the Hannen Lake Float Fly was my second choice for last month's cover. Anyone have any good photos they would like to share next month?

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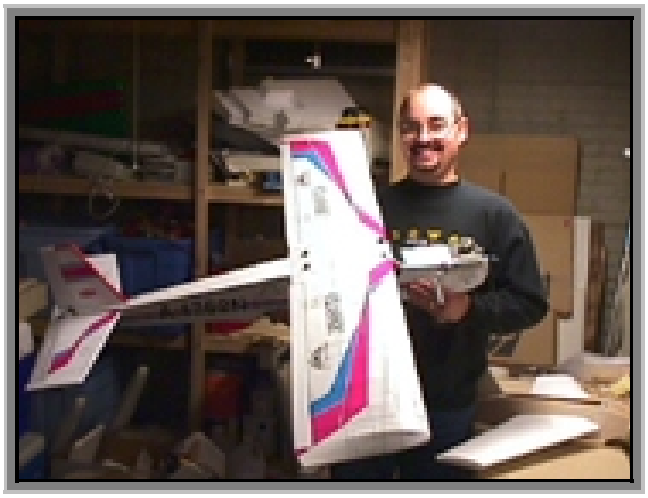
CMA Web Page Addresses:
http://bbs.cacd.rockwell.com/data/clubs/cma/
http://members.xoom.com/cma3257/

Collins Model Aviators
Academy of Model Aeronautics
Charter Club #3257



The President's Column

By Jamie Johnson

Well, July is here and it is my turn to submit an article on behalf of the club officers. Gregg and I have decided (I pleaded with Gregg) to alternate each month.

Last month was extremely wet and unfortunately I was not able to fly as much as I would've liked. As Jim said to me the other day, "if this drought doesn't end soon we'll have to build an arc". The few times that I did make it out to the field were great. Working with the new students has been a great deal of fun. Many thanks to Steve for picking up the Airtronics Buddy boxes for the club trainers. Buddy boxes sure beat trying to pass the transmitter back and forth during training and not only make for better and more effective training but help protect our club's investment.

Just a reminder that Basic and Advanced airplane training nights are the same as last year, Basic begins at 5 PM on Tuesdays and Advanced at 5 PM on Thursdays. For the most up to date information on Field conditions and club instructor availability check out the Collins Voice Bulletin Board at 295-8888.

The time for the annual CMA FUN FLY is fast approaching. I am looking to the membership for ideas and help in running this year's event. Any and all help will be greatly appreciated. Please check out the SUMMER FUN FLY thread on the Collins Intranet discussion group at "collins.rec.model.aviators".

The June CMA Club Meeting went very well and many thanks to Chris Heald and Frank Gutierrez for running the meeting since both Gregg and I were unable to attend. Congratulations to Steve Plantenberg, the winner of June's $5 gift certificate (he pulled out his own name, hmmm). Attend the next CMA club meeting and it could be YOU!

I look forward to seeing you at the next CMA club meeting. Remember you can keep current on club events by visiting our web site and also by visiting the discussion group on the Collins Intranet at "collins.rec.model.aviators".

Jamie Johnson, CMA President ✈

CMA Meeting Minutes

By Chris Heald

June 1, 2000

Frank Gutierrez called the meeting to order at 5:10pm in the Main Plant Cafeteria. Frank presided over the meeting since both Jamie and Greg where absent. The minutes were read. Mark motioned the minutes be accepted as read, Basil seconded the motion.

OLD BUSINESS:

Steve reported he ordered two buddy boxes.

Mark gave an update on the club hats. He reported that the lady who makes the logo is on vacation. No further information could be obtained until she has returned.

Greg Lind suggested giving a hat to anyone who recruits a new member. The topic was tabled until further information regarding the hat has been obtained.

NEW BUSINESS:

Frank gave an update of the flying field conditions, location of the irrigation pipes, and cut grass. A new Flying Site map has been published on the web page.

Steve reminded the membership that CMA has a new News Group: collins.rec.model.aviators

Jim Doty recommended giving new members a membership packet. The packet should include a hat, a copy of the bylaws, a student pilot manual, etc. It was pointed out that all those items except the hat could be found on the CMA web site.

Following the membership packet discussion, it was noted that the student pilot manual still needed updating.

Steve won the $5 drawing.

Larry motioned that the meeting be adjourned. Basil seconded the motion. The meeting was adjourned at 5:40pm.

Chris Heald, CMA Secretary ✈

First Flight

An Instructor's Analysis

By Frank Gutierrez

May 31st 2000 was the first flight of John Michael's CGM Eagle II. It has a foam wing that I cut for John and an old Royal .40 engine that has more than enough power for this plane. It flew straight and predictable from the first takeoff through the entire flight. The conditions were a good 20 Mph plus wind from the SW with gusts. The plane didn't behave like a trainer but more like a sport model. After landing we made a small trim adjustment and on the second flight all trims were neutral. This normally takes me several flights to do this but on this bird only one flight was needed to get it right.

John flew a whole tank of fuel and indicated he is very pleased with how the plane turned out. Although he hasn't really flown in a year, his skills are still there. Well done John!

Maneuvers:

1. Large loops were solid and easy to perform.
2. Aileron rolls were crisp and the aircraft tracked straight as if it had a fully symmetrical wing. (Amazing!)
3. Spin entry and recovery was positive and it spun for real! Throttle back, full left rudder, full back elevator and no aileron input. (What an incredible plane)
4. Inverted flight was as easy as flying right side up. No surprises!
5. It could fly very fast or slow down to a crawl for landings.
6. Stalls were very predictable and directional control was easy with the use of rudder.

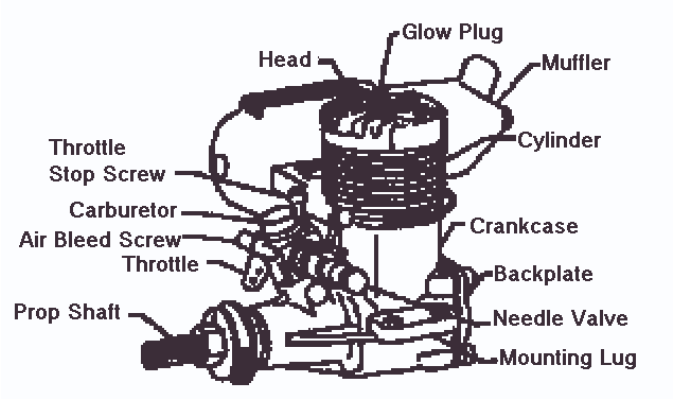
Summary:

The only difference between this Eagle II and other that I have flown is the solid foam wing. This plane performs like no other Eagle that I have flown. I am becoming a believer in foam wing construction and plan to get one of my own flying one of these days.

Frank Gutierrez III, CMA Senior Flight Instructor ✈

You know its too windy when the plane won't move forward at full throttle.
I can land any plane as I haven't left one up there yet.

National Newsletter



Engines Explained for the Beginner

The primary engine type used by modelers today is a single cylinder, two-cycle, air-cooled, reciprocating engine that uses glow plug ignition and a special fuel mixture of methanol, nitromethane, and castor oil. Most of the components of the engine are made of cast, forged, or machined aluminum. The power that can be achieved from these small engines is phenomenal and can vary greatly from one design to another.

A typical, inexpensive .40 size engine can produce 1.1 horsepower at 11,500 RPM. The same size racing engine can produce 2.4 horsepower at 20,000 RPM. All of these engines are the same in their basic components. The design of the engine effects its power output, reliability, and longevity. Bushings or bearings support the prop shaft. Wear takes place between the piston and cylinder wall and the prop shaft and bushings or bearings. Most engines on the market today are classified as ABC meaning they have an aluminum piston and chrome plated bronze cylinder sleeve. This combination normally produces an engine that yields many hours of trouble-free operation if properly maintained. Those engines that have ball bearings for supporting the prop shaft normally produce about 25% more power and last much longer.

New .40 size engines can range from $55 to more than $400.

Air bleed screw: Screw for adjusting the amount of air allowed into carburetor during idle

Backplate: Cover over the rear of the crankcase

Carburetor: Device which mixes fuel and air to control the amount of mixture reaching the engine

Crankcase: Main body of the engine

Cylinder: The section of the crankcase where combustion takes place

Glow plug: Device which provides heat for ignition of the air/fuel mixture

Head: The component which forms the end of the compression chamber of the engine

Mounting lug: The section of the crankcase used to mount the engine to the airplane

Muffler: The device which reduces the noise level of the engine

Needle valve: Device used to adjust the air/fuel mixture

Prop shaft: The main crankshaft which transfers the power of the engine to the propeller

Throttle stop screw: Screw for setting the lower limit of the throttle movement

from Winnebago Sport Modelers
via The Checkerboard Flyer
P.O. Box 6178
Broadview, IL 60155✈

Mystery Interference Identified and Solved

Just a note to relay an experience I went through last summer at our flying field concerning interference. The problem we were having was that we had intermittent interference that was bad on some days and nonexistent on other days. Our airplanes would get hit with short and some times not-so-short glitches, the PCM receivers would go into hold for one to two seconds (seemed longer when it was happening!), and we had several crashes due to this unidentified phenomena. The problem was not on just one RC channel, but seemed to skip around from channel to channel.

Since I am a HAM operator, I tried to identify the problem and spent many hours with a radio

frequency spectrum analyzer monitoring the RC frequencies at the field. I did this during the weekdays (I'm retired) when no one was flying, which made it easier as there were no strong local signals to cover up the potential source of the interference. I could not find any significant interference in the immediate area where we were flying, and to say the least, this had me talking to myself. After spending a fair amount of money to find the problem, all I had was a thinner wallet!

One day, while wondering around with a hand-held portable analyzer, I noticed a small amount of noise in the vicinity of some electric company lines running along the road that leads to our field. The noise was not very strong at all and at first I did not think it was the problem.

More checking revealed that on windy days the interference was quite a bit stronger, particularly if I stood near a pole (wood, about 50 feet high) that had a ground wire running down it to a metal stake driven into the dirt.

When I compared the signal strength of the noise to the strength of the RC transmitters that were about 600-800 feet away, I found that the RC signals were quite a bit stronger. Again, this made me wonder if this was indeed the problem.

Since the wind seemed to make a difference in the noise, I took a heavy hammer and hit the pole a few times to get it vibrating. The result was an even stronger broadband interference showing on the analyzer. I tried this with the line of poles that ran along side the field and found two poles that were really noisy when I hit them.

I then contacted the electric company, and after asking a few times, they came out with their noise crew and found the same thing I did using their own analyzer. They sent linemen out to replace insulators on the two poles. This fixed the problem completely!

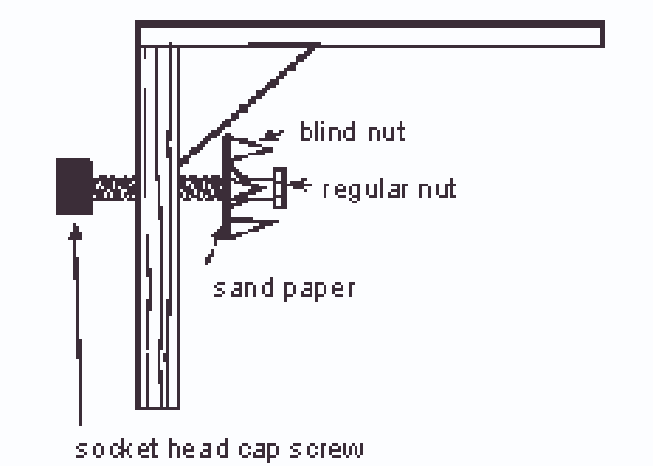
We have had no crashes or glitches from interference since the insulators were fixed.

The explanation as to why the signals did not seem to be strong enough to cause the problem is that the noise was coming from the insulators leaking (the primary line voltage in that area being about 8 kV) and the noise source was high in the air. At ground level the noise signal was not as strong as above the ground where the airplanes flew. Also, the noise was very sporadic and the average level was fairly low but once in a while there were fairly good spikes of noise being radiated.

The electric crew told me that noise from old insulators is not that uncommon. But it turns out it was enough to cause us problems for quite a while until it was found and fixed. The reason the noise was stronger on the pole with a ground wire running to earth is that the wire was conducting the noise and radiating it at the lower elevation where I was standing with my spectrum analyzer.

Submitted via e-mail by
Jim Busk✈

Tips and tricks



Blind Nut Blues

Ever had a blind nut that wouldn't sit flat because it interfered with the triangle stock in the corner or the surface the nut is to sit against is not parallel with the surface the bolt is pulling against?

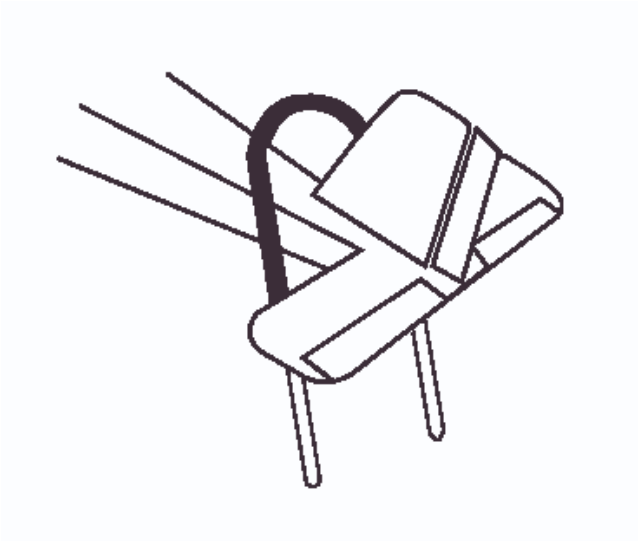
Simply take the blind nut and apply adhesive-backed sandpaper to the back or flat side then

trim to the outside diameter and clear the hole to pass a bolt.

Pass an appropriate length bolt to fit the blind nut through the hole and attach the sandpaper-clad blind nut backwards.

Bind the blind nut to the bolt with a regular nut and chuck up the head of the bolt in a drill, fire it up, and pull out until you have the surface desired.

Hint: Socket head cap screws work best! You could even make up a complete set for each of the popular sizes you use!



Plane Retainer

Take a 30-inch length of A-size steel rod (hardware store), slide an 18-inch length of 3/8ths inch automotive fuel line (auto parts store) over it, and wrap it around a pole in your cellar (or a small tree will do) to make a half loop. Push into the ground with one hand on each leg and remove with one hand in the center.

Blind Nut Blues and Plane Retainer
submitted by Chuck Allessio
39 Granville Rd
Southwick MA 01077-9703

Lite Ply Replacement

My favorite material to use in place of lite ply is doorskins. You can purchase these at your local home building supply for about five dollars. The sheets are 36 inches wide by 80 inches high and are about 1/8 inch thick. I have used this in place of Lite Ply in fuselage sides, hatches, landing gear mounts, and servo mounts and have never had a failure.

Bay Area Model Airplane Club
Bay City TX
http://www.rcplanet.com/bamac/

Heads Up, CMA Activities

July 2000
4-Jul No Programmed Training
6-Jul 5-6 PM **Meeting** 6-? PM Advanced airplane training
11-Jul 5-? PM Basic airplane training
13-Jul 5-? PM Advanced airplane training
18-Jul 5-? PM Basic airplane training
20-Jul 5-? PM Advanced airplane training
21-Jul 5:00 PM FlightLine deadline
26-Jul 5-? PM Basic airplane training
27-Jul 5-? PM Advanced airplane training

August 2000
1-Aug 5-? PM Basic airplane training
3-Aug 5-6 PM Meeting 6-? PM Advanced airplane training
8-Aug 5-? PM Basic airplane training
10-Aug 5-? PM Advanced airplane training
15-Aug 5-? PM Basic airplane training / Fun Fly rain date
17-Aug 5-? PM Advanced airplane training / Fun Fly rain date
18-Aug 5:00 PM FlightLine deadline
22-Aug 5-? PM Basic airplane training
24-Aug 5-? PM Advanced airplane training
29-Aug 5-? PM Basic airplane training
31-Aug 5-? PM Advanced airplane training

CMA voice bulletin board 295-8888

✍ Send your input for FlightLine to:

James H. Doty
MS 108-205 x5-2931
jhdoty@collins.rockwell.com

Local Events:

7/09/00 Lake Mills, IA (C) July Jubilee Fly In. Site: Lake Mills Airport. Delane Behr CD, 208 S 4th Ave W Lake Mills IA 50450 PH:515-592-4195. Lake Mills Airport 1 mile east of Care Center on South 10th Ave east. No landing fee, no contests, just fun. Drawing for prizes. Food available. Sponsor: JULY JUBILEE COMMITTEE

7/08/00 - 7/09/00 Des Moines, IA (C-Restricted) 312th Giant Sqd IMAA Fly In. Site: Club Field. Ed Niles CD, 4229 65th St Urbandale, IA 50322 PH:515-276-9058. Sponsor: DES MOINES MODELAIRES

7/14/00 - 7/16/00 Quad Cities Airshow featuring Patty Wagstaff and the Thunderbirds.

7/16/00 Cedar Falls, IA (C) Prairie Lakes Float Fly. Site: Prairie Lakes Park. Neal Leaper CD, 624 Hearthside De Cedar Falls IA 50613 PH:319-266-2047. For info e-mail nleeper@cfu.net or call Lorne Bidwell PH:319-277-8629. Park is on Cedar Valley bike trail. Sponsor: BLACK HAWK RC PILOTS

7/30/00 New Hartford, IA (A) New Hartford Combat Days. Site: Club Field. Robert Nelson CD, 433 Ardmore Waterloo IA 50701 PH:319-233-4771. 75 mph combat - u-control. Open RC combat - local rules. Sponsor: BLACKHAWK RC PILOTS

8/12/00 - 8/13/00 Des Moines, IA (AA) U.C. Stunt Contest for 322, 324, 324, 325, 326(JSO). Site: Big Creek Park. Bob Baldus CD, 6719 Colby Des Moines, IA 50311 PH:515-255-8025. 1/2A stunt, beginners pattern(JSO), 1/2A stunt full pattern(JSO), Old time stunt(JSO), classic stunt (beginners int)(adv & exp). Sponsor: MID-IOWA CONTROLINERS

8/19/00 - 8/20/00 Grimes, IA (C) Big Bird Fly In. Site: West Field. Charles Blake CD, 707 15th Ave SW Altoona IA 50009 PH:515-967-5079. $10 fee includes Sunday morning breakfast for pilot and spouse. AMA only required. Drawings both days, 1/2 way between Grimes & Dallas center. E-mail crskblake@worldnet.att.net. Sponsor: DES MOINES MODELAIRES

8/20/00 LeMars, IA (C) Wings Fun Fly. Site: East Field. Bernard DeBoer CD, 414 S Lynn Drive LeMars IA 51031 PH:712-546-4609. $10 entrance fee, door prizes for everyone, free lunch & drink. Sponsor: WINGS RC CLUB

8/27/00 Grimes, IA (C) Modelaires Summer Fun Fly. Site: West Field. Larry Carter CD, 333 SE Diehl Des Moines, IA 50315 PH:515-287-6548. $10 landing fee, food & refreshments available. Registration 9AM. Pilot=s meeting 10AM. Show 2000 AMA to fly. Use any RC model. At our West Field located halfway between Dallas Center & Grimes on US Hwy 44. At the R22 northbound county road turn off, go south on the gravel road 1/4 mile. Sponsor: DES MOINES MODELAIRES

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
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cdheald@collins.rockwell.com

2000 CMA Membership

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