

Smoke Signals

Monthly Newsletter of the Meroke RC Club

April 2008

AMA Gold Leader Club #458 - established 1963



Lufbery Field

The skies over Germany saw many great dogfights during the days of World War I. Strapping themselves into airplanes made of nothing but wood, canvas and wire, heading into a mid-air duel-to-the-death, required someone with extraordinary courage. One of the most noteworthy of these brave fliers was Major Raoul Lufbery.

Lufbery joined the Lafayette Escadrille, made up of volunteers from the US, before America's entry into the war. He became the first "Air Ace" in the squadron with 5 kills, and eventually amassed a total of 17 official kills - all behind German lines.

Unfortunately, with the life expectancy of fliers measured in weeks, he met his death in an air battle over Toul, France, after being assigned to the American 94th Aero Squadron. Lufbery was famous for the tactical maneuver that was



named for him - The Lufbery Circle. All of the planes in a squadron would form a circle when at a disadvantage in the skies, allowing no enemy aircraft to get behind one of the planes. They would fly this formation towards their home field, taking the enemy planes far from their own home field.

A few months after Lufbery's death, the Army Air Service built four new flying fields on Long Island. Lufbery Field was located in Wantagh, south of Merrick Road and east of what is now the Wantagh Parkway, in

the area presently occupied by the Cedar Creek Aerodrome. Approximately 200 officers and enlisted men were stationed at the field to support 12 Curtiss Jenny aircraft that were kept in four hangars. Their barracks and mess hall was located in the northeast corner of Merrick Road and Wantagh Avenue. After the Armistice, the field was closed.

When we see a WWI aircraft model flying at the field, it should bring back memories of both Major Lufbery and the brave men who trained and flew at the field named in his honor. There has been serious discussions regarding naming the Cedar Creek Aerodrome after Major Lufbery and giving our field some historical significance.

Many thanks to Ernie Schack, and Bob Cook for bringing this information to Smoke Signals.

Meroke Calendar

April 3 rd	Club Meeting 8 PM - Show & Tell
April 17 th	Club Meeting 8 PM - Meroke Lecture Series - Lewis Schwab, NEPRO NE Pylon Racing Org.
April 20 th	First Fun Flies at the Aerodrome
May 1 st	Club Meeting 8 PM - Show & Tell
May 15 th	Club Meeting 8 PM - Meroke Lecture Series - TBA
May 18 th	Fun Flies at Aerodrome

Some Important Future Dates

June 8 th	Open Fun Fly
June 19 th	Club Meeting 8 PM - Tom Hunt from FLY RC Magazine
June 21 st	Club Picnic (tentative date)
July 17 th	Club Meeting 8 PM - Gary Fitch AMA District II Vice President
August 3 rd	Come Fly with Us
December 4 th	Awards Dinner

Meetings are held the first and third Thursday of each month at 8:00 PM at the First Presbyterian Church of Levittown located at 474 Wantagh Avenue. The church is about 1 mile north of Exit 28N on the Southern State Parkway. Additional information can be found on the club website - www.merokes.com.

Club Officers & Volunteers

President	Dave Bell 516-633-0034	dave.bell0323@verizon.net
Vice President	Lou Pinto 516-785-6890	meroke36@aol.com
Treasurer	Herb Henery 631-665-6274	hahenery@aol.com
Recording Secretary	Al Weiner 516-868-5674	
Corresponding Secretary	Curtis Underdue 917-213-4459	curtisu@msn.com
Board of Directors	Mark Klein 516-326-0855	mclein@optonline.net
	Ed Wiemann 516-735-0733	eww46@man.com
	Nelson Ramos 631-420-2889	nel98rc@optonline.net
	Ernie Schack 516-481-1814	radioschack2@aol.com
Chief	Bob Reynolds 516-775-4377	mrbrew@optonline.net
Field Controller	Tony Pollio 516-794-9637	rctony@optonline.net
Asst Chief	Ed Wiemann 516-735-0733	eww46@man.com
Field Controllers	Tony Pollio 516-794-9637	rctony@optonline.net
Field Safety Officer	Russell Rhine 516-484-0368	rrhine@optonline.net
Smoke Signals Editor	Tom Scotto	
Membership Programs	To be named	
Education	Charlie Lando	
Friends of Cedar Creek	George Carley	
Building Program	Charlie Lando	Ernie Schack
Archivists	Ron Berg	Stan Blum
Webmaster	Ted Evangelatos	
Social (Coffee)	Irv Kreutel	Al Hammer
Raffles	Nick Guiffre	Curtis Underdue
Show and Tell	Ben Corbett	
Video Librarian	Bob Cook	
Come Fly With Me	Mark Klein	Dave Bell
Open Fly-In	Ernie Schack	Tony Pollio
Monthly Fun Fly	Bob Reynolds	Gene Kolakowski
One Fly	Ted Evangelatos	
Picnic/Dinner	Al Weiner	Chris Mantzaris
	Nick Guiffre	
Contest Directors	Allen Berg	Tony Pollio
	Ernie Schack	Tom Scotto
Flight Instructors	Allen Berg	Ted Evangelatos
	Douglas Frie	Dan Gramenga
	Mark Klein	Gene Kolakowski
	Ken Mandel	Tim Murphy
	Tony Pollio	Rick Porqueddu
	Bob Reynolds	Bill Streb
	Ernie Schack	Al Weiner

President's Message

This month is when we plan to start the Top Gun and the Monthly Fun Fly competitions. Let's hope for good weather so we can get tuned into the upcoming flying season and all the events and programs we have planned. If you have any questions or concerns about the events, please see Ted Evangelatos for the Monthly Fun Fly and Chief Reynolds or Gene Kowlakowski for the Top Gun. They promised it will be exciting, and they also plan on feeding you.

We are still in the grips of the Cedar Creek issue with the Guard Booth. At this time, I have nothing additional to add that you haven't already heard. Letters will be available for the Public to sign if they are interested, at the Cradle of Aviation this weekend.

Again we all owe a big thank you to all the individuals who have spent a considerable amount of personal time on the issue at Cedar Creek, for the benefit of us all. Many countless hours of Emails, letter writing, telephone calls and meetings have taken place in an effort to secure our Flying Field. Those that have given their time know who they are. Volunteering is what keeps our Club a "Gold Leader Club" and allows us the benefit of programs like TAG (Takeoff And Grow) from the AMA which was awarded to us last year.

Speaking of volunteering - the Open Fun Fly is scheduled for June 8th and Ernie will start announcing the positions that will need to be manned in order to make this another successful event for the Merokes. Please volunteer when he asks so he doesn't have to appoint you, and believe me he will. This is a big event for us and we send out many letters to R/C Hobby related and R/C Hobby Companies asking for donations for the prizes and raffles. Make it a point to be involved. All the newcomers will get to experience a day of skilled flying, good food and more important, great camaraderie.

All of the behind the scenes issues and paperwork have been brought up to date with the AMA and others. Now the Board wants to concentrate on the upcoming flying season and all that it brings to us as Meroke Club Members. As a reminder to all newcomers, please contact our Club Instructors to get a schedule so you can get started in your flying lessons, and if you feel you are ready to take your flying test, contact any of our Examiners to take schedule.

We should all be looking forward to a fun, exciting and safe 2008 flying season.

Ask Dr. Phil

Hi Folks,

Boy, am I happy. Someone finally submitted a few articles for this month's segment. I want to thank our friend from Port Washington Ken Casser for the following:

I keep my 12 volt gel cell on "Float" with my Alpha 4 at all times. Gel Cells like to be full, and this charger monitors the battery's condition, and gives me a read-out on its voltage. Last night I just finished installing this gel cell into a new field box, and, of course, plugged it into my Alpha 4 as always. To my surprise, the LCD told me that the voltage was too high - over 14 volts. Normal full charge is around 13.30 volts. I wondered how the battery could have increased its charge while sitting on my bench? The answer was simple. In the new box, I soldered 14 gauge wires directly to the battery terminals and ran them to Power Poles. In the old box, I had used female crimp connectors which slipped onto the battery terminals, thinking that this would be an easy way to change batteries when this one died. What a surprise to find out that these simple crimp connectors were robbing my battery of power. I was inadvertently overcharging the gel cell, and then, not getting the power out of it that I should have. Especially when using a heavy duty electric starter, it pays to run heavy wire directly to the battery instead of through a Power Panel or anything else that might impede the flow of electricity.

ENELOOP Batteries - Has anyone heard of them? They are made by Sanyo, the premier rechargeable battery maker, and are a newer version of the Nickel Metal Hydride cells we currently use. Their capacity is 2000 mAh in the AA size, but the difference is that they retain their charge far longer than typical NiCds or NiMHs. That means that you don't have to charge your batteries as often as you do now, depending on how much actual flying you do, of course. They come fully charged, and even if they've been on the shelf for a year, they will still have 85% of their original charge, according to Sanyo. There is a guy in Florida who uses them for his helicopter receiver, and says, "Use them at your own risk.

I am happy to fly a \$17,000 scale bird on them." According to George Joy, owner of Peak Electronics who make the popular Sirius line of chargers and accessories, they make a terrific transmitter pack. Safer than lithium and they don't degrade their charge the way NiCds do. Now, try to find them! I've looked and looked. I finally found them last weekend at Costco. It was a bulk pack of 6 "AA" and 2 "AAA" for \$18.99. I don't plan on soldering my own battery packs, but I will be using them in a lot of other places. For my transmitter, I'll be calling Batteries America, who puts the packs together in any configuration and with any plug you need. It may cost more, but I know I'll have a great performing pack.

Submitted to Dr. Phil by Ken Casser - Thanks Ken

From the Editor

So - what is going on with the status of the security gate? It seems that things have quieted down regarding this issue. But you can bet that there is a lot of action going on behind the scenes. We have to keep up our offensive and continue sending letters to Tom Suozzi - letting him know that there are a lot of us out there. And there's not only us - there's also our support mechanism - our families and friends - let them speak out for us. This coming Thursday night, at the first meeting on April, we expect to have County Legislator Dennis Dunne at our meeting. It's our time to get a first-hand status of exactly what is going on. Be there - and certainly bring guests to hear from Mr. Dunne if there has been any progress.

On another note - you saw the article on page 1 about Major Raoul Lufbery and the field named after him. We are looking for any information regarding the field - photos, exact location, etc. Anything to add to the documentation we already have. Hopefully, with enough documentation, we can persuade the County Legislature to name our flying field after Major Lufbery. Being an historical site would greatly cement having the field remain for our use for many, many years to come.

Charge your batteries; tighten your engine mounts and clevises; buy a few gallons of fuel - the flying season is upon us.

Why CA Instant Glue Spouts "Clog"

Found this very interesting article on a woodworking website.

Background: The key word is "INSTANT", which, for our purposes means it will cure rapidly if given any incentive. This characteristic is, after all one of the reasons you use these glues. The curing incentives that the user inadvertently provides at the spout tip causes clogging. There are many such incentives listed below that might be the causing the clogging you may be experiencing.

1) STORAGE:

New, Unopened containers of any instant glue may be stored in the freezer (at or below 32 degrees F) to double shelf life. Always allow the container to warm to room temperature before opening. Once opened, never return an opened bottle to cold storage. Why? -- Moisture is one of the catalysts. Opening a cold bottle or placing a previously opened bottle back in cold storage causes the warm air that has entered the bottle, (carrying moisture with it), to condense the moisture into water. This has a negative effect on shelf life causing the contents of the bottle to thicken and eventually harden and causes the spout to clog very frequently. The thicker these glues become, from the original viscosity, the more frequently clogs occur.

Note: This is not to say that the gap filling versions are more likely to clog.

2) APPLICATION:

Keep the tip of the spout from touching the work, especially if dust, from sanding, is present. Each time the spout touches foreign matter, the glue is effectively being told to cure. Foreign matter, if sucked into the spout, can also cause the contents of the bottle to thicken and eventually harden.

3) SEALING:

If an over-cap is provided, use it to reseal the bottle between uses. The over-cap prevents dust or accelerator overspray etc. from settling on the spout. Never wipe off the spout tip with anything. Lint from cloth or paper products sticks to the tip and causes clogging. If you have a problem with clogging overnight or over the course

of several days, here is a Special Note Regarding "HOT STUFF"[™] glues. If our special sealing ring (located 3/8" down from the tip of an unopened spout) has not been trimmed off, try tipping the bottle and squeezing slightly to fill the spout with glue. As the beginning of a drop appears ready to come out, snap the over-cap in place. Then store the bottle upside down and your spout will remain unclogged, ready to use up to several weeks.

4) ACCELERATOR OVERSPRAY:

Always make sure that accelerator OVERSPRAY does Not touch an exposed spout. Set glue aside or reseal with the over-cap before spraying accelerator.

5) FOREIGN OBJECTS:

Avoid putting pins or nails or anything into spout to try to keep it clear. The trace moisture on these objects is carried into the spout and makes clogging more frequent. Instead, trim off the tip a little with a knife.

6) AGE or Foreign Matter:

Shelf life is determined, to a great extent, by the quantity in the container. As a rule of thumb, a two ounce bottle has a one year shelf life at room temperature. As the bottle ages and passes the expected useful lifetime, it begins to thicken. This can also occur because of improper storage or because of foreign matter being introduced into the bottle, as explained above. If you are very familiar with these glues, you know that even glue thickened because of any of the reasons above, is still usable as if it were gap filling versions. NEVER add new glue to an open bottle as the older glue will shorten the shelf life of the new. Large bottles of glue are poor economy unless a smaller container is used up entirely within 4 weeks.

7) REPLACEMENT SPOUTS:

Replacement spouts are available for most glue. It is always a good idea to have an extra on hand for those times when you have accidentally ruined the current working spout.

April Birthdays

- 11 *Bob Reynolds*
- 13 *Robert Albano*
- 13 *Curtis Underdue*
- 18 *Mark Klein******
- 26 *Ted Evangelatos*
- 29 *Frank Lasala*
**Big One*



Engine Myths Busted

Use a fuel that has at least 20-percent castor oil content?

If you want to generate some excitement at the flying field, just bring up the subject of fuel — specifically, lubrication type and oil content. Beginners who seek advice from multiple club members about which fuel to use, invariably end up very confused. Part of the problem is that modern engines have different requirements from the engines using lapped-iron pistons that were common long ago. These lapped engines required a very high oil content, up to about 30 percent, most of which was castor oil. In fact, most modern engines of ringed or ABC construction don't need this much oil. The question is, what is an acceptable percentage of oil?

The oil that we use in our 2- and 4-stroke nitro-methane-fueled engines serves two purposes. The first is cooling; the oil carries away combustion heat and keeps the cylinder and piston cooler. The second is to lubricate the internal moving parts, such as the crankshaft bearings, connecting-rod bushings, etc. If an engine doesn't receive enough oil, either from a fuel with too low an oil content or a lean running engine (as you lean the engine, less oil flows through it, and the internal temperature rises), there will be rapid wear on the parts — especially the piston and sleeve. The obvious advantage of using less oil is increased performance; the fuel's nitro-methane and methyl alcohol percentage will be higher. The engine will also idle and transition better without the extra lubrication molecules interfering with the interaction of the fuel and oxygen molecules.

Much has been written about the merits of castor oil and synthetics. Very briefly, castor oil's primary benefit is that when the cylinder head's temperature exceeds 550 degrees F, it forms long-chain molecules (varnish) that protect the moving parts from contracting and being destroyed.

Synthetics lubricate better in low temperatures and leave the engine cleaner, but they have inferior film strength and don't form a protective varnish. Years ago, this was a very hot topic, but if you understand each type's characteristics, you can make your own choice. O.S. recommends 18-percent castor or synthetic or both; Saito and YS recommend 20 percent, with Saito recommending that not all of it be castor oil; Super Tigre

mentions 18 to 20 percent, and Evolution recommends only certain name-brand fuels. Since manufacturers' recommendations vary, it can be problematic if you fly using a variety of engines and don't want to carry a separate fuel jug for each.

Will most engines run acceptably on fuel with 16- or 17-percent oil content? Absolutely; however, the lower the oil content, the less cushion there will be against a lean run. There will be an even slimmer cushion if 100-percent synthetic is used. In some applications, such as racing—in which winning is the primary objective, and engine longevity is not a concern—low-oil-content fuel is used. If you are adept at engine tuning and never run your engine lean, you will not experience any problems running 16- or 17-percent oil content fuel. On the other hand, the small gain in performance using these fuels versus one with 20-percent oil content may not be worth the price of an engine. There may be occasions on which an engine goes lean in flight because of dirt or pinhole leaks that develop within the fuel-delivery system, not to mention the detrimental effects of vibration. The added protection of a higher oil content fuel can save an engine from destruction.

So what is the ideal fuel? On the one hand, for most of us, using a fuel with at least 20-percent oil content is good advice—unless you are in need of an expensive paperweight. On the other hand, the percentage of castor need not be very high; 2 to 4 percent will provide adequate protection and won't cause excessive varnish build-up.

Show & Tell

We had 4 participants in the March Show and Tell:

- Patrick Boll discussed his Hangar 9 Tribute - a plane he won't allow his Dad to fly. Patrick also won the prize.
- Mark Klein built a Japanese Zero from a kit from the 70s. It had a fiberglass fuselage, and the wings were foam core with split flaps added by Mark.
- Alan Berg showed his progress to date on an SBD-5 Dauntless that he is building from Ziroli plans.
- Ben Corbett - our Show & Tell host - discussed his Yak-54 from Nitro Models with an installed Magnum 90 4-stroke.

Top Ten ARF Assembly Tips – Part 2

4. RUBBER TUBING AROUND THE CLEVIS

When the control surfaces deflect, pressure builds on the control horn and the clevis. The weakest link is the clevis—specifically, on its tiny pin. The pressure can generate enough force to pop that clevis pin loose, but rubber tubing will help prevent this.

5. REINFORCE THE SCREW HOLES WITH CA

All screw holes in wood (balsa, plywood and hardwood) should be reinforced with CA, especially those for the control horns, servos, canopy and cowl. Drill the hole, insert the screw and remove it, and then drop thin CA into the hole. This will strengthen the wood and prevent it from being stripped.

6. SEAL FUEL-TANK TUBING AT THE FIREWALL

Tubing that exits through holes in the firewall will eventually wear out from vibration, but you can prevent this by sealing the fuel tubing at the firewall with silicone sealant. Tanks that extend through the firewall should also have sealant around the hole; this will stop any fuel from seeping into the tank compartment.

7. PROPERLY INSTALLING THE HINGES

The CA hinges that are included in many ARF kits do a fine job of supporting the control surfaces. They are usually chemically treated to encourage the CA to wick to all parts of the hinge and provide good adhesion, but this process can be helped along by drilling a small hole (3/32 inch) in the center of each hinge slot. This gap above and below the hinge will allow the CA to penetrate all the way to the back of the hinge.

8. FOAM TAPE ON THE WING SADDLE

Exhaust residue that enters through the wing saddle can damage unprotected wood in the plane's interior and will eventually ruin it. You can protect this area by applying foam tape around the wing saddle. It will form a fuelproof seal and is soft, so it won't hinder wing alignment.

9. THREAD-LOCK ALL BOLTS

With the exception of engine screws, all of the bolts that screw into nuts, blind nuts and threaded metal pieces benefit from thread-lock. It reinforces the grip and provides a measure of insurance that the screws won't vibrate loose. This simple step can save you quite a bit of grief later.

10. KEEP THOSE WHEELS ROLLING

To ensure that the wheels remain in place, use a small file or a rotary tool to grind a small flat spot on the axle beneath the wheel-collar setscrew. This flat spot will prevent the wheel collar from sliding off. Don't forget to apply thread-lock to the setscrew.

Tech Tip

Conquer those Crosswinds! - *Crosswind Flying Hints:*

- Will you alter heading during maneuvers to compensate for wind or ignore it and compensate via crosswind maneuvers?
- "Hang time" has a huge bearing on exposure in a crosswind.
- Start spins upwind.
- Think about wind direction and plan corrections; use vector drawings where helpful.
- Use more heading correction in level flight and less in vertical lines.
- On a vertical line, if you have a wind rudder correction input and you perform a 1/2 roll, you'll need opposite rudder after the roll.
- The more slowly you fly, the larger will be the heading adjustment you'll need.
- Concentration is vital to success.
- Practice in less than ideal conditions.

For Sale

Charlie Marcino (631-951-3373) has a lot of "stuff" for sale. Here is a list of some of the items.

Ohio 84" chipmunk 75% built, with Super Tigre 1.8 engine, and all other parts & electronics needed.

Spitfire in camouflage with .46 engine (in flying shape)
Dragon Lady with ASP90 (very repairable after crash landing)

Complete field box w/folding legs

Trimming Your Airplane

The following chart may be used to systematically set up and trim a model for straight flight and aerobatic maneuvers. Please note that for best results, trimming should be done in near-calm conditions. Before you decide to make a change, be sure to try the test several times before making adjustments. If any changes are made, go back through the previous steps and verify that they are not also affected. If they are, make further adjustments as necessary. *This chart was forwarded to Smoke Signals by Tony Pollia.*

To Test for...	Test Procedure	Observations	Adjustments
1. Control neutrals	Fly the model straight and level	Use the transmitter trims for hands-off straight-and-level flight	Change the electronic subtrims or adjust clevises to center transmitter trims.
2. Control throw	Fly the model and apply full deflection of each control in turn.	Check the response of each control: — Aileron high rate: 3 rolls in 4 seconds; low rate: 3 rolls in 6 seconds — Elevator high rate: to give a smooth square corner; low rate gives approximately 130 foot diameter loop — Rudder: high rate 30-35° for stall turns; low rate maintains knife-edge	Change ATV (for high rates) to achieve desired responses.
3. Decalage	Power off vertical dive (crosswind if any). Release controls when model is vertical (elevator trim must be neutral).	a) Model continues straight down b) Model starts to pull out (nose up)? c) Model starts to tuck in (nose down)?	a) No adjustment b) Reduce incidence c) Increase incidence
4. Center of gravity	Method 1: roll into near vertically banked turn. Method 2: roll model inverted	1a) Nose drops 1b) Tail drops 2a) Lots of forward tick (down elevator) required to maintain level flight 2b) No forward stick (down elevator) required to maintain level flight, or model climbs	a) Add weight to tail b) Add weight to nose
5. Tip weight (coarse adjustment)	Fly model straight and level upright. Check aileron trim, maintain level wings. Roll model inverted, wings level. Release aileron stick.	a) Model does not drop a wing b) Left wing drops c) Right wing drops	a) No adjustment b) Add weight to right tip c) Add weight to left tip
6. Side thrust and warped wing	Fly model away from you into any wind. Pull it into a vertical climb, watch for deviations as it slows down.	a) Model continues straight up b) Model veers left c) Model veers right d) Model rolls right	a) No adjustment b) Add right thrust c) Reduce right thrust d) Put trim tab under left wing tip
7. Up/down thrust	Fly the model on normal path into any wind, parallel to strip; at a distance of around 100 meters from you (elevator trim should be neutral as per test 3). Pull it into a vertical climb and neutralize elevator.	a) Model continues to straighten up b) Model pitches up (goes toward top of model). c) Model pitches down (goes toward bottom of model).	a) No adjustment b) Add down thrust c) Reduce down thrust
8. Aileron differential	Method 1: fly model toward you and pull into a vertical climb before it reaches you. Neutralize controls, then half roll the model.	1a) No heading changes. 1b) Heading change opposite to roll command (i.e. heading veers left after right roll). 1c) Heading change in direction of roll command.	a) Differential settings okay

To Test for...	Test Procedure	Observations	Adjustments
8. Aileron differential (continued)	Method 2: fly model on normal pass and do three or more rolls. Method 3: fly the model straight and level and gently rock the aileron stick back and forth.	2a) Roll axis on model centerline. 2b) Roll axis off to same side of model as roll command (i.e. right roll, roll axis off right wing tip). 2c) Roll axis off to opposite side of model as roll command. 3a) Model flies straight ahead without yawing. 3b) Model yaws away from roll command (i.e. right roll, yaw left). 3c) Model yaws toward roll command (i.e. right roll, yaw right).	b) Increase differential. c) Decrease differential
9. Dihedral	Method 1: fly the model on normal pass and roll into knife-edge flight; maintain flight with top rudder (do this test in both left and right knife-edge flight). Method 2: apply rudder in level flight.	a) Model had no tendency to roll. b) Model rolls in direction of applied rudder. c) Model rolls in opposite direction in both tests.	a) Dihedral okay. b1) Reduce dihedral. b2) Use mixed to produce aileron opposing rudder travel (start with 10%). c1) Increase dihedral. c2) Mix ailerons with rudder direction 10%.
10. Elevator adjustment (for model with independent elevator halves).	Fly the model as in Test 6 and pull up into an inside loop. Roll inverted and repeat the above by pushing up into an outside loop.	a) No rolling tendency when elevator applied. b) Model rolls in the same direction in both tests— halves misaligned. c) Model rolls in opposite directions in both tests. One elevator half had more throw than the other (model rolls to side with most throw).	a) Elevators are in correct alignment. b) Either raise one half, or lower the other. c) Reduce throw on one side, or increase throw on the other.
11. Pitching in knife-edge flight	Fly the model as in test 9.	a) There is no pitch up or down. b) The nose pitches up (the model climbs laterally). c) Nose pitches down (model dives laterally).	a) No adjustment needed. b) Alternate cures: 1) move CG aft 2) increase incidence 3) droop ailerons 4) mix down elevator with rudder c) Reverse "b" above

CHICKEN WINGS™

BY MICHAEL AND STEFAN STRASSER

