Soaring News

Vol. 1 Issue 3 "Newsletter of the Orlando Buzzards R/C Soaring Society" May 1996

CLUB OFFICERS	Rick Eckel, President Don Cleveland, Vice President Lewis Gray, Treasurer Andy Harrell, Secretary
NEXT MEETING	June 9th, Noon at Club Field July 14th, Noon at Club Field

President's Corner — *Rick Eckel*

INSTRUCTOR PROGRAM. Starting out the year we established a rather informal–formal instructor program in the club. I want to keep that program active and make sure that everyone is both aware of its existence and informed about its objectives. I originally outlined an informal course of instruction that I transmitted to the member instructors. That course is not a state secret and bears repeating here in the newsletter so that everyone can be familiar with it. Keep in mind that the instructor program is not intended to prevent anyone from helping newcomers. Any club member is free to instruct. The program merely identifies a few members who have volunteered to go out of their way to help new fliers. By wearing an "Instructor" pin they are advertising that they can be approached freely for help. They are willing to set aside their flying to help new fliers test and fly their airplanes. The course of instruction that I outlined is as follows:

****RC Flight Instruction for New Flyers.** The Orlando Buzzards would very much like to assist new flyers in becoming proficient sailplane pilots. To that end there are members who willingly volunteer their time as flight instructors so that newcomers can successfully solo their airplanes. This brief outline is intended to give a newcomer and the instructor a common understanding of what is to be accomplished. Instructing a new pilot is not so much a matter of telling him what to do as it is allowing him to gain flight time while preserving his aircraft. The most important thing an instructor can do is to send the student home with a feeling of accomplishment and a whole aircraft. The time it may take for a new pilot to solo varies but brand new pilots should expect to take from four to six weekends of flying before soloing. In some cases this may be shortened and in other cases additional time may be needed.

****Flight Instruction Chronology.** Initial trim and initial flight of training aircraft (by instructor)

1. Preflight Inspection
   a. CG checked per plans.
   b. Wing examined for warp
   c. Tailfeathers examined for true installation and proper throw direction
   d. Control rods/cables examined for security and positive action
   e. Examine towhook for proper positioning
   f. Range check the radio installation
2. Hand toss flight(s) to zero trims for straight and level flight
3. Winch or High Start launch and landing by instructor to verify airworthiness.

**** Training Sequence**** Building basic flying skills (instructor guides student)

1. Student practices maintaining level flight without stall/dive tendencies. The instructor will make all launches. Instructor will take over whenever the model gets downwind, below launch height or if the aircraft gets into an unusual attitude. Instructor will make all landings. *(continued on pg2)*

(President's Corner Continued)
2. Student practices keeping the aircraft in a general area of the sky upwind of the field. Instructor may allow the student to handle the transmitter or the winch during launch. Instructor will make all landings.
3. Student practices circling the aircraft in both left and right turns without losing altitude. Instructor may allow the student to handle launches completely. Instructor makes all landings.
4. Student practices flying figure 8's without losing altitude. Instructor may allow the student to solo, handling both launching and landing when he is confident that the student has sufficient control to land successfully.
****Beyond Soloing.** Additional instruction is by mutual agreement between student and instructor.

CONTEST FLYING. Having just finished a miserable showing in our most recent contest I really wonder why I would ever do it again. After all, if you don't expect to win why enter? If its such an aggravating, agonizing experience what would bring you back for another day? I guess these are rhetorical questions. I already know I'll go back. Maybe I'm not real sure why but I know I'll go. Part of it is stubbornness. I know I'm a better flier than my last showing and I want to prove it if only to myself. (After all, first place and 69 cents will get you a cup of coffee in any McDonald's in the land!) But there are other rewards also. Contests test my equipment and my flying ability in a way that sport flying never can. Being required to launch during a certain time period and keep the airplane in the air for a specified length of time puts a completely different spin on flying. All of a sudden you're not just wandering around the sky waiting for the thermal gods to smile on you. You're left to your own wile and cunning to find thermals. To fly them with such precision that you gain the maximum altitude and time from them. And then bring the plane to rest at a precise location at a precise moment. It's discouraging when you miss. But it feels REAL good when you get it right. Every contest I've ever entered has taught me something. Sometimes its a lesson about equipment preparedness and sometimes its about my own fallibility. Either way I enjoy the challenge of learning and applying the lessons to the next outing. Just being around other fliers (friends) is important to me. Yes, sometimes I enjoy being absolutely alone at the field, but RC soaring would become boring pretty quickly if I had to fly alone all the time. Meeting fliers from other places, discussing planes and equipment and just simply socializing are some of the biggest rewards of attending a contest. I am not at all convinced that I have to expect (or even strive) to win to enjoy contests. If you haven't tried it for yourself give it a go. It is much more fun than you think.
Til next time – Rick "Searching for Thermals in All the Wrong Places" Eckel.

Sometimes we get so advanced in our thinking that we forget the basics. Do you fly alone? What would you do if you were bit by a snake? What if you twist your ankle in a hole while throwing your handlaunch? What if you are splashed with battery acid from a leaking or exploding battery? Obviously, it is best to plan ahead: have a partner that can act as a spotter, render first aid, or summon help if needed.
Summer heat is here, so prepare with these very essential safety items. Wear a hat (with brim), loose/light clothing, and a pair of strong comfortable shoes. The shoes should provide support for walking and standing, and side–to–side stiffness to resist twisting an ankle when you suddenly stomp on uneven ground or a hole. Don't forget to bring and use sun block; drink lots of water (not cola and coffee!) before, during and after flying; and wear sunglasses to protect eyes from UV rays. Some people may benefit from taking an aspirin or two before coming out to the field. It helps to thin the blood and relax muscles and circulatory system. It wouldn't hurt to carry an anti–inflammatory drug too, for control of swelling from bee stings, ant bites, weed spurs, or similar irritants. Light stretching exercises can increase your flying safety too. Even with light loads, stiff joints (especially knees, ankles, and backs) can be injured when you least expect it. Moral: Plan for the conditions. If you can't cope with the conditions, then you are only increasing the odds that you won't be able to cope with the flying. Until next time, remember: "SAFETY FIRST".

Lots of contests to report on this month. First, the two FSS contests hosted by the Buzzards at the Snowhill Road field:

FSS#3. March 23/24 was FSS#3 managed by CDs Ed and Garnett White. Weather was fairly cooperative, but with more wind on Sunday. At least six airplanes were known to have gone down in the vicinity of the river south of the field. The amazing thing was that ALL were recovered, although "Lumpy's" and Terry's airplanes took over 24 hours to find, and even then were found with the aid and generosity of three local canoe campers. Where ever you guys are, THANKYOU! Results were:

FSS#3 CONTEST RESULTS		
PLACE/CLASS	EVENT	NAME
1–Sportsman	2meter	JOEL MELCHIORRE
2–Sportsman	2meter	RICH KIBURIS
3–Sportsman	2meter	ROB RIERSON
1–Expert	2meter	RON BEISER
2–Expert	2meter	AL SORENSON
3–Expert	2meter	MIKE WILLIAMS
1–Master	2meter	TOM BECKMAN
2–Master	2meter	MARK CUMMEROW
3–Master	2meter	DERRICK KHAW
1–Sportsman	open	TED MCMAHON
2–Sportsman	open	J YOUNG
3–Sportsman	open	RICH KIBURIS
1–Expert	open	SCOTT HUNT
2–Expert	open	POH KHAW
3–Expert	open	DAN HOEHNER
1–Master	open	DERRICK KHAW
2–Master	open	ED WHITE
3–Master	open	MARK CUMMEROW

FSS#4. April 20/21 was FSS#4, again hosted by the Buzzards and CDed by Cy Baylor and Hank McDaniel. Weather was not bad, but thermals were fairly hard to find and stay centered in. John Masiello folded the wings of his new Spirit on the first launch! Scores were mixed; Ed White landed off field and still managed third; Don Cleveland placed first with a low round of 256. Congratulations to Don, Ed, Rich Kiburis, and Rob Rierson!

FSS#4 CONTEST RESULTS		
PLACE/CLASS	EVENT	NAME
1–Sportsman	2meter	MARK ERICKSON
2–Sportsman	2meter	ROB RIERSON
3–Sportsman	2meter	RICH KIBURIS
1–Expert	2meter	DON CLEVELAND
2–Expert	2meter	DAN HOEHNER
3–Expert	2meter	JAMES WILSON
1–Master	2meter	DERRICK KHAW
2–Master	2meter	MARK CUMMEROW
3–Master	2meter	ED WHITE
1–Sportsman	open	INGO DONASIT
2–Sportsman	open	RICK KIBURIS
3–Sportsman	open	JOEL MELCHIORRE
1–Expert	open	POH KHAW
2–Expert	open	DON CLEVELAND
3–Expert	open	DAVID VEATCH
1–Master	open	ED SLEGERS
2–Master	open	DERRICK KHAW
3–Master	open	RAY ALONZO

BUZZ CHUCK. Results of the first annual Buzz Chuck (May 5th) are here! Ed White hosted this well–planned handlaunch event and was rewarded with a lot of praise. 15 contestants tried to sling higher, search further, and climb on the slightest of lift. Victory was to be dominated by two men from Cincinnati. YES, Ohio. They flew down just to demonstrate how serious HLG is. Ed held 'em off enough to grab second while the rest of the club members came in behind third place. "Thank You" to John Masiello and Rick Eckel for their outstanding assistance, especially John's awesome computer program that kept track of and normalized the scores! Contestants said this was one of the most professional events they have ever attended. This event was easy and fun , so expect more HLG events in the near future.

Future Contest Dates:

May 25–26	FSS#5, Morriston—2 meter/Unlimited CD: Ken Goodwin	**Aug 30**	Fun Fly, Morriston CD: Ken Goodwin
June 29–30	FSS#6, West Palm—2 meter/Unlimited CD: Jim McCudden	**Aug 31–Sep1**	FSS#8, Morriston—2 meter/Unlimited CD: Ken Goodwin
July 21	Annual, Orlando*—Gentle Lady's only CD: Rick Eckel	**Sep 21–22**	FSS#9, Orlando—2 meter/Unlimited CD: Hank McDaniel
July26–Aug3	AMA Nationals, Muncie, Indiana (see Model Aviation Magazine for info)	**Oct 19–20**	FSS#10, Morriston—2 meter/Unlimited CD: Bob Wargo
Aug 3–4	FSS#7, West Palm—2 meter/Unlimited CD: Jim McCudden	**Nov 29–Dec1**	23rd Tangerine Nationals, Orlando CD: Ed White & Rick Eckel

Contest Directors/Volunteers: THANK YOU!!!

We would like to thank our CDs and contest volunteers that have made the many contests not only possible, but run smooth even with equipment failures and other unscheduled events. More CDs are needed in the future. If you are a registered CD please consider volunteering to manage a future contest. If you would like to become a registered CD, contact Rick Eckel for the AMA requirements and application process. And as always, when the contest trail returns to Orlando, we will need volunteers to work July 21, September 21/22, and Nov29–Dec1. Jobs include winch operation and repair, tent buildup/teardown, and battery charging.—*Get Involved!*

Mixing Full House Sailplanes

By Rick Eckel (Copyright 1995, printed by permission)

Let's admit it. The simple two channel 'floater' type sailplanes are the most relaxing and enjoyable planes to fly. They look graceful in the sky, practically fly themselves, and land so slowly you can walk beside them. On a beautiful, calm, sunny, summer Sunday there is no better way to spend time than guiding a floater beneath billowy clouds suspended in a deep blue sky. But...

There are some of us who can't leave a good thing alone. We must have speed... Or "performance"... Or a thousand little switches sticking out of our transmitters. We want launches to the moon, thermal searches that cover at least three states and landings on the head of a nail every time. For us there's no fun like the good adrenaline rush of a high speed pass low across the field!

So we opt for the full house sailplane. Fiberglass, carbon fiber, kevlar, foam, obechi, and servos in every nook and cranny. Beasts that are inherently unstable, fast as the dickens and prone to landing like lawn darts. And then we are faced with trimming the dang things, getting them to fly in a civilized (or at least somewhat controlled) manner, and landing 'em without cutting off our own legs. The key to all this is a computer radio and that most dreaded of all procedures: mixing.

Many newcomers to our wonderful sport have approached me and asked about computer radios, how to choose one and what it is that you really do with one when you have it. Nosy and full of questions as they are, they are seldom satisfied with "mixing" as an answer. So here is the lowdown on what 'real' sailplane pilots do with a computer radio.

Let the mixing begin

Setting up, or 'mixing', a full house sailplane with a computer radio can be a pretty intimidating task for the uninitiated. There seem to be so many possibilities, so many control surfaces, so many switches and so many terms and nomenclatures. Actually... there really are too many. But they're manageable if we first understand the basics of what we need to accomplish. Then we must translate that into the terminology and control functions provided by our particular computer radio manufacturer.

Sailplanes have three distinct flight requirements: launching, landing and the flight task. Mixing is used to enhance the flight characteristics of the plane for each of these requirements. In launching we want to obtain the highest possible altitude. For landing we require slow speed with the most control possible in order to land very precisely. The flight task requirements vary with the task (I'm most familiar with the thermal duration task but there can also be speed and distance tasks).

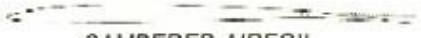
As the full house sailplanes and computer radios have become more common, basic ways of enhancing each (*continued next page*)

(Mixing Full House Sailplanes continued)
of these flight requirements have become more or less standard. They are enabled by mixing two or more control functions (for instance: flaps and elevator or aileron and rudder) together so that the flight characteristics of the plane are optimized for a particular flight requirement. The interesting part is that each airplane design will have its own reaction to the typical mixes and must be optimized individually for top performance.

A Few Definitions

Camber, reflex, crow and butterfly are terms tossed about by those baptized in the use of computer radios as if their meaning were obvious. From my experience they are only obvious if you already know them. (Or is that obvious?) Anyway, a brief review won't hurt.

Camber and reflex are kind of equal but opposite terms. They refer to the position of the wing's flaps and/or ailerons. Camber means that the flap or ailerons is deflected a little downward effectively adding undercamber to the normal wing airfoil. Adding undercamber means that the bottom surface of the wing becomes more concave. Reflex, on the other hand, is the deflection of the flaps or ailerons upward. Moving the flap or ailerons up removes camber in the airfoil making the bottom more flat or even giving the wing a 'reflexed' trailing edge.



CAMBERED AIRFOIL

REFLEXED AIRFOIL

Butterfly and crow are different terms for the same thing. A sailplane in the crow or butterfly configuration has its flaps lowered and both ailerons reflexed (raised). The ailerons stick up and the flaps hang down making the plane look reminiscent of a crow or butterfly as they approach a landing.

CROW (BUTTERFLY) CONFIGURATION

The flaps, ailerons or the full trailing edge (both flaps and ailerons) can be referred to as cambered or reflexed. Camber and reflex are used in a variety of circumstances. Crow (or butterfly) is only used for landing or perhaps for diving out of a thermal.

Launch Mixing

A sailplane will launch from a winch or high start perfectly well without any trim adjustments – assuming that the tow hook is well positioned. However the launch may be enhanced by several adjustments. The first is to camber flaps a bit to generate more lift during the launch. A little up or down elevator compensation is frequently of benefit when flaps are used during launch.

Flaps only cover perhaps 1/2 of the length of the trailing edge of the wing. Some fliers find that additional lift can be generated and a steeper launch attained if the ailerons are also cambered to match the flaps, or a little less, when launching. As a beginning point of reference, we are talking about a cambering of flaps and ailerons of perhaps 1/4".

At the end of the launch some additional altitude can be gained by "zooming" off of the winch line. This zooming can be enhanced by reducing airfoil drag by reflexing the trailing edge. That is, reflexing both the flaps and ailerons slightly above their normal positions. Again, as a point of reference, we are talking about maybe a 1/16" reflex of flaps and ailerons.

All of these things can often be controlled using the 3-position flaps switch as the master channel for the flaps and slaving the other channels that require adjustment (elevator and ailerons) to them. This means that a lot of flexibility for mixing to flaps is necessary for the launching task. That makes it one of the key things to look for if you are choosing a radio for a full house sailplane.

Landing Mixing

For landing a sailplane the flaps are again important. They are useful for obtaining the slow speeds while retaining good control that make spot landings easier. Most airplanes exhibit a nose up pitching motion (or "ballooning") when flaps are deployed. So a mix of elevator to the flaps is employed to counteract the pitching. The elevator mix used in the launch may or may not work (or be available) for the landing flaps deployment. So a different elevator mix may be needed. Most pilots also prefer to have landing flaps fully proportional and controlled by the throttle stick on the transmitter so that they can vary the flaps depending on their landing approach.

Another enhancement to the landing function is the use of ailerons as spoilers. When both ailerons are reflexed and the flaps are lowered the plane is said to be in the "crow" or "butterfly" configuration. A little reflex of the ailerons just dumps (spoils) the lift of the wing and steepens the glide slope. A large degree of reflex adds drag as well. *(continued next page)*

(Mixing Full House Sailplanes continued)
So this landing mix is a lot like the launch mix except that the ailerons have a different motion, the elevator to flaps mix is different and the flaps are proportionally controlled by the throttle stick rather than having preset positions via the 3–position switch. Only the more advanced programmable radios and/or those specialized for sailplanes will have the ability to provide both launching and landing mix setups.

Flight Task Mixes

Perhaps the most widely used flight task mix is rudder to ailerons. The purpose of this mix is to allow coordinated turns to be accomplished using only the right stick on the transmitter. This mix also eases the transition from a two channel (rudder–elevator) sailplane to an aileron equipped model. (Just don't forget that the ratchet trim for the rudder is now under the left stick!)

There are also a variety of other mixes for the flight task requirements for sailplanes. Pilots tend to vary in their preferences for these mixes. Part of the preference is personal and part is because different planes respond differently.

Some pilots like to have the trailing edge of the wing camber, either just flaps or flaps and ailerons, with the application of up elevator. This gives an apparent increase in the effectiveness of the elevator. Conversely they sometimes want the trailing edge to reflex with the application of down elevator. This makes the plane accelerate more quickly. Pilots like to be able to switch this mix in and out depending on whether they're in a thermal or not. So they turn it on and off with a switch on the transmitter.

In addition to or in place of the above some pilots like to be able to 'dial in' some camber on the wing while they are working a thermal. With more camber some airfoils can fly slower, develop more lift, and get more altitude out of a given thermal. Once a thermal expires or is lost pilots want to 'flee the sink'. The ability to reflex the trailing edge can be very effective when you need to get away from a particular piece of sky quickly. These controls are often handled by a pot (potentiometer) on the transmitter or, as an alternate by the throttle stick so that they are proportionally variable.

In slope racing it is very important to make good 'bank and yank' turns. I understand that some pilots like to use an inverse aileron differential mix in order to put some adverse yaw in the plane as they bank up for the turn just prior to the 'yank'.

The Mix is the Secret!

There are many other mixes and variations on mixes that different pilots use for different flight requirements. I think that some of them must be closely guarded secrets! Secret mixes that provide a competitive edge that pilots develop and hand down only with greatest ceremony to select coconspirators! I think that's why I can't fly as well as Brian Agnew or Joe Wurts (or a lot of other pilots for that matter) – I don't have any secret mixes! (Aren't conspiracy theories wonderful excuses!)

Classified Advertisements

For Sale: Carl Goldberg Mirage 550. Ready to fly electric, upgraded motor, 8.4V cells and ailerons. Fast with gear off. Any Offer to save from Attic. call Terry @ (904) 789–0323

For Sale: Two Hi–Tec Focus 4 txer/rxer sets. One CH.19 ($50) and one CH.11 ($75). Contact Rob Rierson (407) 273–1127

Wanted: Old/unusable Txer/Rxer chargers and charging adapters. Donate to Terry. Leave in field shed.

This could be your ad. Help your fellow club members find a great deal on needed equipment. Advertise for free right HERE!!!

ODDS-N-ENDS

☐**DO YOU KNOW SOMEONE WHO DID NOT GET THIS NEWSLETTER?** Are they still a Buzzard Club Member? Help us ensure that SOARING NEWS is delivered to our valued members. Contact the club secretary to add or correct names on the club roster.

☐**MOBILE WINCH SYSTEM.** The Trailer is completed and has already seen use at our two recent FSS events. Equipment has been working good, especially since changing to 6-Volt retriever systems. But, lets all do our part to ensure the life of these great assets.

☐**BATTERY TRAINING.** Battery maintenance is very important. It can mean the difference between flying and not flying; a mishandled battery could cause serious injury; and batteries (and battery support equipment) are the highest single club expendiure. On-field training in battery charging and maintenance will be announced soon.

Give us a hand Jot it down!

Your words could appear in SOARING NEWS! If you have news, safety issues, technical ideas, or equipment to sell, write it up and mail to: Terry Cusack, SOARING NEWS
1471 San Carlos Ave
Deltona, FL 32738-9771
or call: (904) 789-0323. I can accept disk copies in MS WORD, WORDPERFECT, WORDSTAR...or you-name-it. Watch for email address in near future.

TECH-TIPS

PRIMING FOAM FOR REGULAR GLUE

Here's one that beats any idea you might have heard of for priming foam. You can't apply glue or paint on Styrofoam unless it is a water or epoxy base material. Henry Ortiz, Interlachen, FL, has decided to share with us his secret for priming foam. Go to your drug store and purchase a bottle of Pepto Bismol, Original Formula, NDC-37000-032-02 made by Proctor and Gamble. Yes, I said Pepto Bismol! Paint the foam with it, making sure it penetrates the surface with complete coverage. Allow to cure overnight. You can then use any type of paint or glue on it. And, if you happen to have a bad case of heartburn, it's also good for that too. A consumable primer, not bad! *(Editor's note: I don't test these things, I just print 'em)*

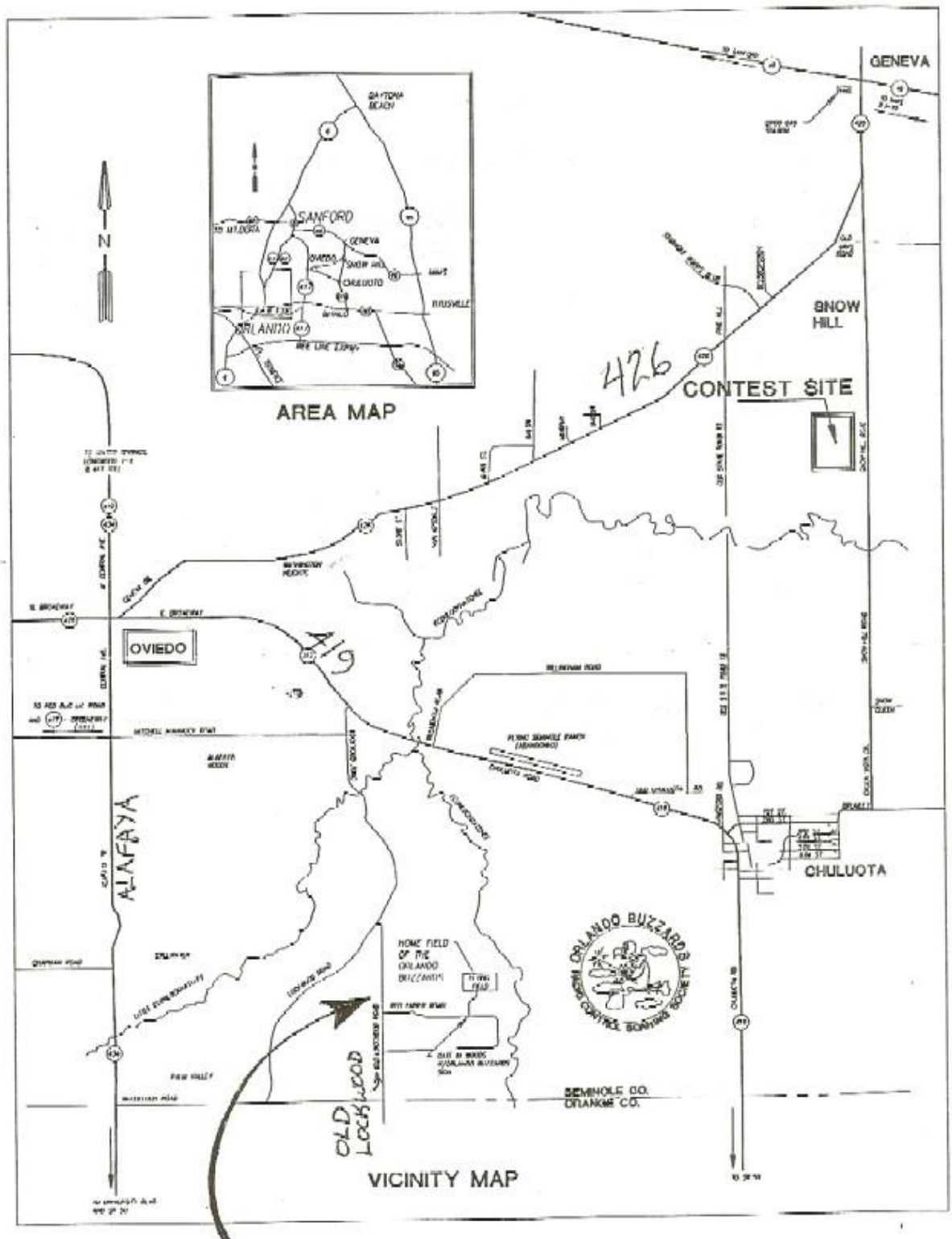
EASY TRANSFER

If you are trying to find a good way to put special scripts, notices, or instruments on your model, you might try the following procedure: Get your artwork to the state that you want it, special scripts done on a computer, laser printed, etc. Then go to the nearest copy center and ask them to photocopy the artwork onto a transparency (for overhead projectors), then ask them to flip it over and photocopy it again. You now have a photocopy with ink on the backside. Back to the shop. Put a blob of 5-minute epoxy on the surface to be lettered, and lay the transparency on the epoxy so there are no bubbles under it. Let it cure. When the epoxy has cured, you can peel off the transparency, leaving behind only your artwork and the incredibly shiny surface where the transparency was. Submitted by Roy Young, Odessa, Ontario, Canada.

THIS IS YOUR SPACE. USE IT OR LOSE IT! PLEASE CONTRIBUTE ARTICLES FOR THE BENEFIT OF ALL CLUB MEMBERS. Next issue: July 8, 1996.

It's thermal time!!!
Come fly with us...

Soaring News
1471 San Carlos Ave
Deltona, FL 32738-9771



COME FLY WITH US!

SATURDAYS & SUNDAYS 10am - 2pm

AT RED EMBER RD.