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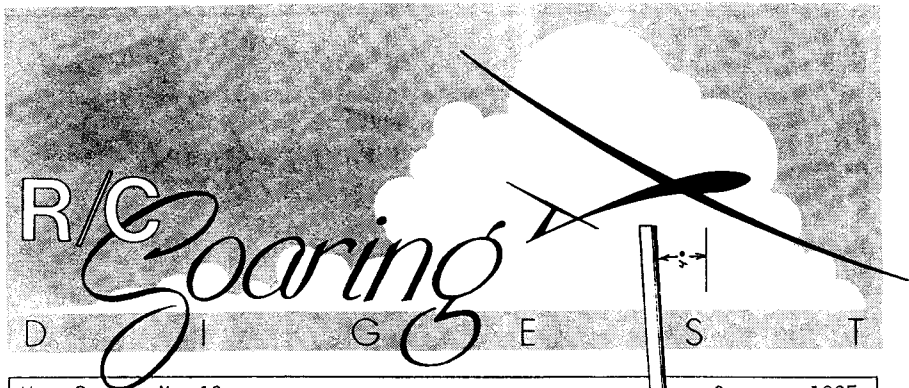
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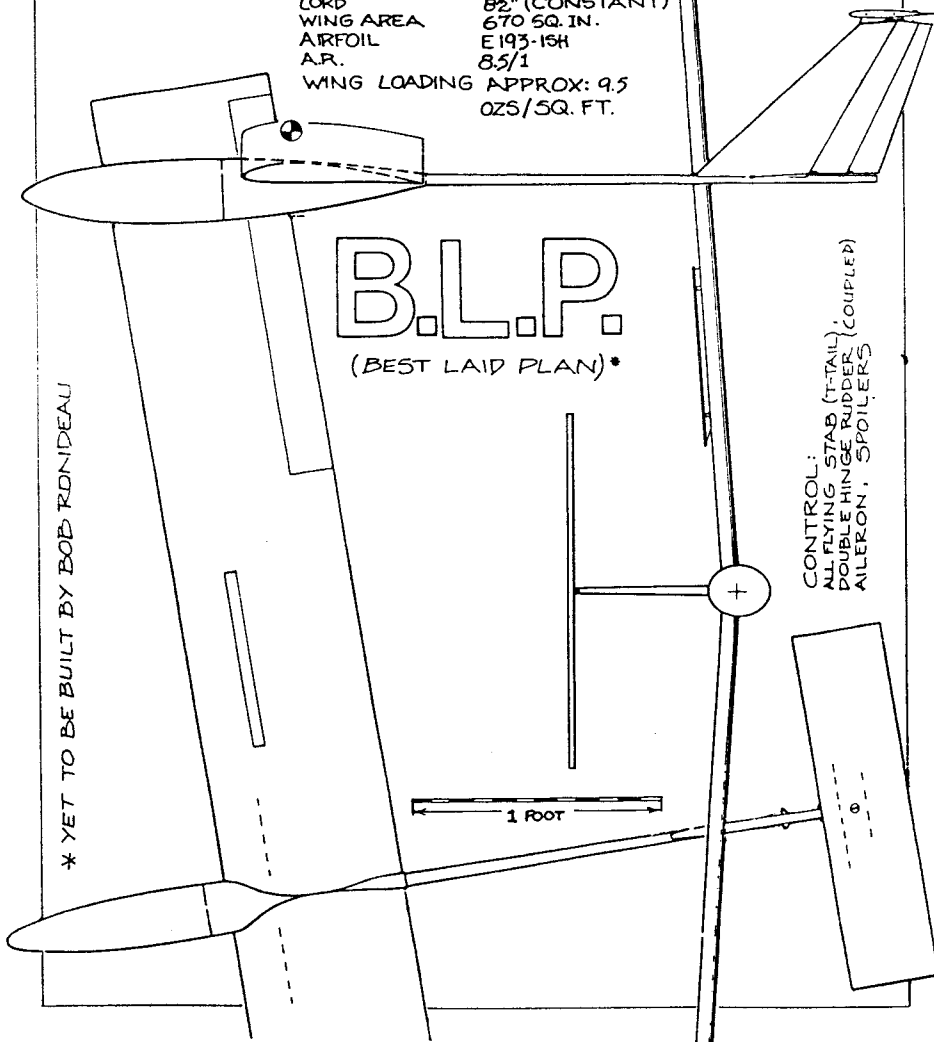
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Vol. 2, No. 10

OCTOBER 1985

LENGTH 42"  
 SPAN 78 3/4"  
 CORD 8 1/2" (CONSTANT)  
 WING AREA 670 SQ. IN.  
 AIRFOIL E 193-15H  
 A.P. 8.5/1  
 WING LOADING APPROX: 9.5  
 OZS/SQ. FT.



# AT LAST! A WORK CENTER FOR MODEL BUILDERS

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- (J) Adjustable Swivel Casters
- (K) Sturdy Aluminum Frame



Includes all accessories shown except: tools, power outlet strip, lamp and casters.

\*Power tools not included

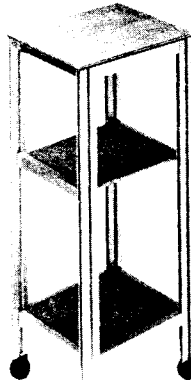
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FINAL TOTAL

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**WORKSHOP CONCEPTS**

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HOW OFTEN DO ANY OF US REALLY GET TO DO WHAT WE WANT TO DO?

I MEAN WHAT WE REALLY WANT TO DO, HAVE ALWAYS WANTED TO DO, AND CAN'T LIVE ANY LONGER WITHOUT DOING? NOT MANY, I ASSURE YOU; ESPECIALLY THOSE OF US BLESSED (OR CURSED) WITH THE OLD-FASHIONED WORK ETHIC.

WELL, COMES A TIME IN EVERYONE'S LIFE WHEN HE OR SHE SAYS "TO HECK WITH IT, I'LL JUST GO AND DO MY THING, NO MATTER WHAT HAPPENS." I'VE JUST ABOUT GOT TO THAT POINT, AND WHAT REALLY HAPPENED IS THAT A SERIES OF CONCATENATING CIRCUMSTANCES (WHATEVER THEY MAY BE) DEVELOPED IN MY LIFE RATHER SUDDENLY, GIVING ME THE IDEA, AND THE CHANCE.

FOR YEARS, I'VE DREAMED ABOUT FREEDOM - FREEDOM TO COME AND GO AS I PLEASE; FREEDOM TO DO ABOUT WHAT I WANT TO DO, WHEN I WANT TO DO IT. TO FLY, TO TRAVEL, TO VISIT, TO WORK OR PLAY DOING MY OWN 'THING'... THAT KIND OF FREEDOM. NOW, IT LOOKS LIKE THAT TIME HAS ABOUT COME TO PASS, AND I WANT TO SHARE WITH YOU THE ESSENCE OF MY IDEA.

AS MOST OF YOU KNOW, I AM A LICENSED PILOT OF BOTH POWERED AIRCRAFT, AS WELL AS SAILPLANES. IN 1983 I OWNED A CESSNA 150 FOR THE SUMMER, FLYING MY WIFE, MY FRIENDS, AND MYSELF AS OFTEN AND AS FAR AS TIME AND MONEY WOULD PERMIT. THAT WAS FREEDOM IN MY TERMS - BUT NOT TOTAL FREEDOM. I ALWAYS HAD TO COME BACK FROM THE WEEKEND, OR FROM THE SHORT HOLIDAY, TO FACE (UGH!) WORK. DURING THESE CROSS-COUNTRY JAUNTS TO SEE FRIENDS AND FAMILY, THE IDEA BEGAN TO MAKE ITSELF KNOWN. "HEY," SAID MY BRAIN, "THIS IS FUN. LET'S KEEP IT UP AND DO IT FOREVER." THE PRACTICAL SIDE OF MY BEING TOLD THE DREAMER IN THE SKULL TO SHUT UP AND PAY ATTENTION TO DUTY. THERE'S ANOTHER WORD FOR YOU: DUTY.

AT LAST, IN 1985, NOT LONG AGO, THE IDEA HAD SOME HOPE OF BECOMING A REALITY. TROUBLE IS, I'M NOW TORN BETWEEN TOURING THE USA IN A PLANE OR IN A TRAVEL TRAILER. MY PRACTICAL (AND USUALLY CORRECT) MATE, PEGGY, THINKS THAT THE TRAILER IS FAR MORE PRACTICAL AND LESS EXPENSIVE FOR A PROLONGED JOURNEY... WHEREAS I, DREAMER THAT I AM, PREFER THE AIRPLANE NOTION. "HOW WOULD YOU GET FROM EVERY AIRPORT TO WHERE YOU WANT TO GO," SAYS PEG. "SIMPLE," I REPLY; "FRIENDS WILL COME MEET US AND TAKE US TO STAY WITH THEM." "WHAT FRIENDS," ASKS THE PRACTICAL ONE. "WHY, RCSD FRIENDS, OF COURSE," I REPLY - TRYING TO SOUND CONVINCED. WELL, MY FRIENDS, THE ISSUE HAS NOT BEEN FULLY RESOLVED, BUT I HAVE A FEELING THAT SOME KIND OF COMPROMISE (YOU KNEW THAT ALL ALONG, DIDN'T YOU) MIGHT BE EFFECTED.

FOR EXAMPLE, I MAY TAKE A MONTH'S LEAVE OF ABSENCE, RENT AN AIRPLANE, AND MAKE A QUICK TOUR OF PLACES AND PEOPLE... CAREFULLY NOTING THE SPOTS AND FACES WE'D LIKE TO REVISIT LATER ON. THEN, BEING CAREFUL NOT TO BURN ALL MY BRIDGES, COME BACK NEXT YEAR BY TRAVEL TRAILER... ONLY THIS TIME, STAYING FOR A FEW DAYS, A WEEK, OR A MONTH... AND MAKING A FULL SIX MONTHS OR YEAR OUT OF IT. ON THE WAY, I'D WRITE RCSD - TALKING ABOUT THE THINGS I DID, THE PLANES I SAW, AND THE PEOPLE I MET. EACH MONTH'S ISSUE WOULD BE A NEW AND DIFFERENT ADVENTURE REPORT.

AFTER ALL, WHY NOT? WE ONLY PASS THIS WAY ONCE - AND I'LL JUST BET YOU THAT THE RESULTS OF THAT TRIP WILL BE MORE EXCITING, MORE FULFILLING, AND - YES - MAYBE EVEN MORE PROFITABLE THAN ANY OTHER I'VE EVER MADE. MIGHT EVEN SELL A FEW SUBSCRIPTIONS, TOO. SEE YOU IN '86.

The Cumic kit was originally purchased in December '84, delivered in the spring of '85, and built in a month preceding the '85 AMA Nats. The kit had a few kinks which may have been straightened out by the time this report becomes public. In case the kit you end up with is an early kit you can benefit from this builder's experience. This evaluation will be divided up into Design, Construction and Flight Performance.

#### DESIGN

The design of the sailplane is similar to the Sagitta 900 but included some improvements which have been proposed and tested by owners of the Sagitta 900. One change was to simplify the construction. One finds that X-bracing between the ribs and the spruce trailing edges for wing and horizontal stabilizers are not in the design. I felt that the spruce trailing edges were one reason why the Sagitta flew so well so I put them back on both the wing and stabs. The stabilizer trailing edge shown in the plans is quite blunt. I added a sandwich of balsa/spruce/balsa to the stabilizer T.E. which was sanded to a thin edge. The horizontal stab design didn't provide any balsa at the tips in front of and behind the spars to provide a smooth airfoil shape for the stabilizer. The plans also don't show sanding being done on the spar perhaps they are showing the pre-sanded view. However, all the Cumics at the Nats including my own had smoothed airfoil sections for the stabilizers.

The fuselage is shaped to receive the Quabeck airfoil of the Adante'. One who looks for all the ways to reduce drag might improve the joint with some kind of fillet or seal. I would like the option of trying the Quabeck airfoil.

The amount of nose weight required to balance my finished model at the rear edge of the spar seemed to be excessive at 10.5 oz. I am sure that my changes can account for some of that weight but I have found that others building to "spec" have had to add between 5 and 9 oz.

I used the Airtronics releasable tow hook instead of the plain hook shown on the plan. I am now having trouble finding the space for ballast in the model because of the control actuator rods and the towhook. Things are much easier if one uses a plain tow hook as shown in the plans. Bulk heads can then be added and weights poured for the purpose and placed right on the center of gravity.

Some additional streamlining can be done with the wing bolt. A round headed bolt is supplied which runs through a rectangular 1/16" plywood plate over the trailing edge. The best modification I saw for this was to inset the plywood in the trailing edge stock and shape fillets to match the contour of the fuselage. The round headed bolt was replaced with a bolt with a flat top set down into the wing so no protrusions existed into the airflow.

One happy design feature was that the Ace Thermic Sniffler (rectangular design) fits into the canopy perfectly using two sided tape. The only modification I made was to lower the servo tray 1/4" to permit plenty of clearance between the servo control arms and the Sniffler. I used Royal Mini-titan servos. I don't believe that large servos are necessary for this model because of the low friction of the control movements. I included a sniffler antenna tube in the center section and the first bay of the wing tips. This tube ran inside the center D-section (upper rear corner) and clears the important wing saddle and other hardware. The tubes exit behind and outside of the spoiler tubes from the lower leading edge of the center section.

The weights for the completed parts of my Cumic and Sagitta 900 are compared below. The Sagitta includes some extra glass and epoxy for having survived 4 seasons (1.5 oz.).

	Weight in grams and (oz)	
	CUMIC	SAGITTA 900
Wing rods	41 (1.4)	57 (2.0)
Wing center panels	419 (14.8)	-
Wing tip panels	227 (8.0)	-
Wings	-	577 (20.3)
Wings (total)	687 (24.2)	634 (22.3)
Fuselage with trim ballast	954 (33.6)*	852 (30.0)
H. Stabilizers with rods	85 (3.0)	54 (1.9)
Total flying weight	1726 (60.8)	1540 (54.2)

\* = Thermal Sniffler mounted in canopy

#### CONSTRUCTION

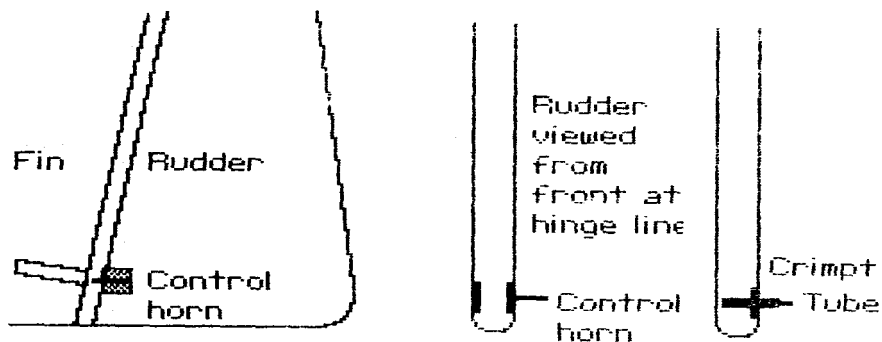
One joy in building an Airtronics kit is the quality of the machine cut parts. The Cumic fuselage is of the same excellent quality. I don't remember any kit having a higher quality than the Cumic or Sagitta. Any modeler will be proud of a completed Cumic. However, I believe there is yet room for improvements and these mainly in communicating the instructions. I recommend that the builder copy portions of the plan for the stabilizer and wing center sections. This will provide an easy way to see important details once the center bottom sheeting or other parts are in place when you are building over the plans.

Achieving the proper alignment of the stab rods when epoxying the tubing into the stab framework was tricky. I think that two alignment pieces having the same spacing as the stab control horn would have made the job easy. A top fuselage view on the plan would be useful in marking the location of the tow hook and formers. I used a fuselage jig with a cross hatch grid on its base and still managed to get the hook off to one side by 1 mm. Templates were made to mark the locations for the canopy locating pin, the limits for the moving stabilizer pin slot and the wing dowel. Placing the former in the fuselage which will receive the 1/4" wing dowel was not as easy as one might seem. This is because the fuselage was thicker on one side than it was on the other in this confined area. I rotated the former until the pre drilled hole looked like it was in the proper place. I don't know what to recommend as a solution, but you should be aware that the former hole might not end up where it should. If you use a "write on anything" felt marker as I started to do, you should know that the ink may wick into the glass fiber of the fuselage. I switched to a pencil and wished I had a wax pen.

In constructing the rudder, plan to install the control horn inset into the rudder or install a control horn with another kind of mount (see illustration). Also don't cut the slot in the fuselage as shown on the plan. The slot should run perpendicular to the hinge line.

The wing construction was fairly straight forward except for a few trouble spots. The first was with the description of how the spoiler tubing is to exit the bottom sheeting. I recommend that you cut the tubing off flush with the bottom sheeting from the start. I didn't with the first center section and forgot about its presence when I installed the top sheeting on that side of the center section. The result was that the tubing held the wing up slightly off the building board and then I had a warp to get out.

One construction aid that I tried worked very well for adding the top sheeting to the leading edge of the wing. The bottom sheeting is first glued in place. Place an 1/8" piece of sheet metal against the spruce leading edge and trim off any bottom sheeting past the sheet metal. Mark and cut the top sheeting so that when it is in place, there would also be 1/8" excess sheeting past the spruce leading edge. Place white glue on the ribs, spruce leading edge and the spar.



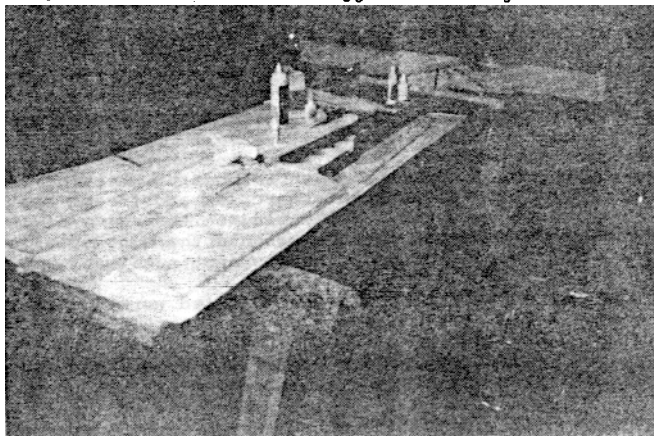
## Rudder Control Horn Modification

Position the top sheeting on the spar and align the ends. Weigh the sheeting down on the spar then force the sheeting down over the ribs and onto the leading edge. In order to hold the top sheeting in place, add some baking soda where the bottom and top sheeting come together and add some CA. The sheeting stays in place and in good contact with the leading edge spruce. If you have tried planing or clamping the sheeting to the spruce I'm sure you will appreciate the ease of this approach. I added some pins to be sure the sheeting stayed in contact with the ribs. See Photo showing the two tip panels under construction. Clamps or CA tacking of the sheeting to the spar would also work fine if weights aren't available.

Another problem was to successfully drill the 1/4" hole into the upper leading edge of the wing to accept the wing dowel. Dan Farwell from the MARCS club told me of his problems in this regards. Being forewarned, I used a Dremel tool and a milling bit to create a 1/4" round pilot hole with a vertical balsa surface for the drill to start in. Without this starter hole the drill will be partly on spruce and partly on balsa which will cause it to wander. After making the pre-drilled pilot hole, I could use my fingers to turn the 1/4" bit into the balsa which remained. The hold is drilled when the wing is in position and through the fuselage former. The epoxy used to hold the pin filled up any traces of poor judgment on the pilot hole.

The instructions call for one to mark the position of the wing saddle pieces from the leading edge to the trailing edge. Only a portion of that section needs to be cut out.

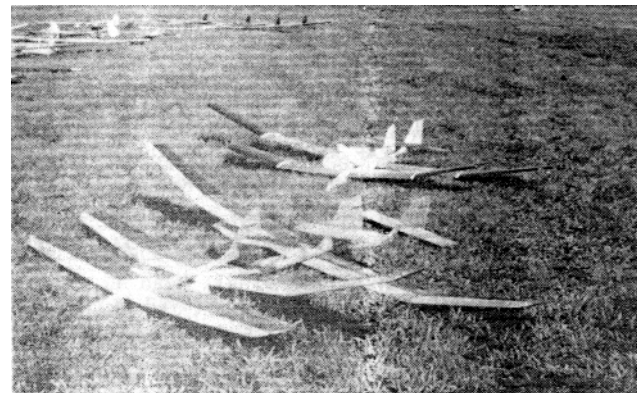
When threading the wing hold down bolt hole there was no instruction as to the drill size to be used. Use a #8 tap drill. There is only 1/8" plywood to tap and some of this may have been splintered by the tap drill. Fred Weaver suggested adding hot stuff to the threads.



When finishing the wing I used color matched epoxy paint on the wing center section in the area of the fuselage to avoid having to make the covering material conform to the complex curvatures. Two part epoxy paint and primer work nicely with the fuselage finishing. When attaching the spruce longerons to the fuselage you will probably create dents in the outer fuselage surface which should be filled.

## FLIGHT PERFORMANCE

I won't say much about flight characteristics as yet since I haven't had much stick time on the Cumic. I have already noted improvements in my ability to fly the Cumic and in my first contest since the Nats took a third place in some good competition. I also saw the Cumic perform well at the Nats in the hands of "Team Airtronics". The location of the tow hook as shown on the plan is conservative. I plan to move it back just a little. I've been trying a ping release and the plane seems to take the high wing loads just fine.



PART OF THE AIRTRONICS "AIR FORCE" AT THE NATS  
F. to B.: Sagitta 600, Cumic Std., Cumic Unl.

## NEW PRODUCT ANNOUNCEMENTS

SATELLITE CITY, MAKERS OF THE "HOT STUFF" PRODUCTS RECENTLY ANNOUNCED 1/4-POUND QUANTITIES OF "HOT STUFF"<sup>TM</sup> PENETRATING, 3-5 SECOND CA CEMENT; SUPER 'T'<sup>TM</sup> 10-25 SECOND BOND GAP-FILLING CA CEMENT; AND SPECIAL 'T'<sup>TM</sup> (NEW) 20-50 SECOND, ULTRA GAP-FILLING CA CEMENT. AN INTERESTING SIDELIGHT IS THAT SATELLITE CITY CLAIMS TWO-YEAR SHELF LIFE INDUSTRIAL STRENGTH, UNCONDITIONALLY GUARANTEED. THEY ALSO FURNISH THE EXCLUSIVE NO-CLOG, SNAP'N'SEAL FLIP-TOP CAP. THE PRICES SEEM VERY REASONABLE FOR THE 1/4-POUND QUANTITIES, AND I'D SUGGEST THAT THESE MIGHT BE THE MOST ECONOMICAL, OVERALL, FOR BUILDERS OF 1/4-SCALE SAILPLANES OR POWERED SHIPS. IF YOU HAVEN'T SEEN THE STANDARD "HOT SHOT"<sup>TM</sup> MILD, NON-FOAMING ACCELERATOR, OR THE NEW "KICK-IT"<sup>TM</sup> HOT POWER CURE FORMULA ACCELERATOR, OR EVEN THE GOLDEN WEST SOLVENT, PLEASE WRITE TO SATELLITE CITY, P.O. Box 836, SIMI, CALIFORNIA 93062. IF YOU ARE 'INSTANT' ORIENTED, THEN CALL S.C. ON THEIR TELEPHONE, WHICH IS (805) 522-0062. IF YOU SAW THE NOTICE HERE, I'D BE MIGHTY PLEASED TO HAVE YOU TELL THEM THAT YOU READ ABOUT THEIR PRODUCTS IN RCSD. THANKS.

\*\*\*\*\*

SOARING MAIL FROM HERE AND THERE

DAN McLEOD, FROM OTTAWA, ONTARIO WROTE ABOUT A LOT OF THINGS I'D SAID IN A RECENT EDITORIAL, AND THEN PROCEEDED TO TALK ABOUT HOW SIMILAR WE ALL FEEL ABOUT SOARING, AND HOW WE'D ALL LIKE TO DO MORE OF IT, EVEN IF IT REQUIRES COURAGE AND FORTITUDE. HERE'S DAN:

"THERE'S ONE PROBLEM - STAYING INSIDE IN THE WINTER. I LIKE BUILDING - TO A POINT - BUT FLYING = HAPPINESS. SO, LAST WINTER I FLEW FOR BETTER OR WORSE. THE 2M SHIPS ARE THE MOST CHALLENGING FOR ME; SO, ALTHOUGH IT WAS COLD, SNOWY, WINDY - I.E. ZERO DEGREES, F., BUT SUNNY - YOU CAN FLY. HI STARTS SKID ON ICY SNOW VERY WELL. NOT MANY FLIGHTS OVER TEN MINUTES, BUT LOTS OF FUN IF YOU'RE DRESSED PROPERLY. IT SURE FILLED THE WINTER GAP FOR ME AND A FEW OTHER HARDY SOULS. IT WAS ALSO A GREAT INCENTIVE FOR US TO INSULATE THE CLUB HOUSE...JUST LIKE HAVING AN OASIS IN THE SNOW."

OKAY, DAN; I LIKE TO FLY TOO, AND HAVE EVEN FLOWN THE SLOPES IN THE DEAD OF WINTER (HAD THE BATTERIES FALL OUT WHILE UPSIDE DOWN, AND PLUNGE INTO THE DEEP SNOW DOWN THE SLOPE...WHILE THE SILENT SQUIRE FLOATED LIKE A FALLING LEAF AND LANDED IN THE PINE TREE); BUT, MY FINGERS GET STIFF AND LOSE FEELING, MY NOSE RUNS, MY FEET GET ICY, AND THE EYES TEAR SO BADLY I CAN'T SEE. JEEZ - WHAT SOME OF US WON'T DO TO GET THAT EXTRA FLIGHT OR TWO. I WONDER IF YOU FLIERS FROM DOWN SOUTH EVER MISS THESE KIND OF CONDITIONS?

IF ANYONE HAS SOME TIPS AND TRICKS FOR WINTER FLYING, WRITE 'EM IN TO ME, AND I'LL PUT THEM HERE...WINTER'S ON ITS WAY!

MIRKO BODUL FROM SHOREWOOD, WISCONSIN SENT IN SOME PIX OF HIS VARIOUS SAILPLANES, AND WROTE A FEW COMMENTS TO GO ALONG WITH THEM.

"...I'M SUBSCRIBING TO YOUR INTERESTING MAGAZINE; IT REMINDS ME OF THE PUBLICATION PUT OUT IN FRANCE BY EOLE, A SOARING GROUP HEAD-QUARTERED IN PARIS. IT HAS MANY MEMBERS, BUT WHEN I WAS A MEMBER, IT HAD ONLY TWO FROM THE USA - MYSELF AND ANOTHER MODELLER FROM CALIFORNIA.

"MY PREFERRED WAY OF FLYING IS SLOPE, AND I ONLY GO THERMAL FLYING WHEN THERE'S NO WIND ON THE SLOPE. MAKING A 'SPECK' OUT OF ONE OF MY OWN PLANES MAKES ME NERVOUS, AND WATCHING SOMEONE ELSE MAKE A 'SPECK' OUT OF THEIRS IS BORING. SINCE MOST GLIDER FLIERS FLY 'CAVE MAN' GLIDERS (I.E., POLYHEDRAL) IT IS DOUBLY BORING TO WATCH.

"MY FIRST EXPOSURE TO ADVANCED SOARING WAS IN FRANCE IN 1980. FOUR AND FIVE METER SCALE SAILPLANES MADE MY POOR LITTLE (OMITTED) LOOK RIDICULOUS - PATHETIC. NO ONE FLEW ANYTHING BUT STRAIGHT-WING PLANES. HERE IS A LIST OF WHAT I FLY NOW: JANTAR I - 4.75 METER; ALPINA - 4 METER; KESTREL - 3.8 METER; MINI NIMBUS - 3.3 METER; AXEL - 2.2 METER; AND EPSILON - 1.5 METER. MY SB-10 'BOUGHT THE FARM' ABOUT TWO YEARS AGO.

"WATCHING THE ALPINA FLY IS NOT FLYING; IT'S A RELIGIOUS EXPERIENCE! I'VE HAD MY ALPINA SINCE 1981 AND IT DOES EVERYTHING: AEROBATICS, THERMAL SOARING, SPEED FLYING, AND MORE. ARE THERE ANY IN YOUR REGION? SO LONG FOR NOW, AND MAY YOU HAVE SCREAMING WINDS."

MORE MAIL...

IAN GUNN FROM ALDERVIEW, NEW BRUNSWICK (ONE OF OUR MANY CANADIAN CORRESPONDENTS) WRITES AS FOLLOWS:

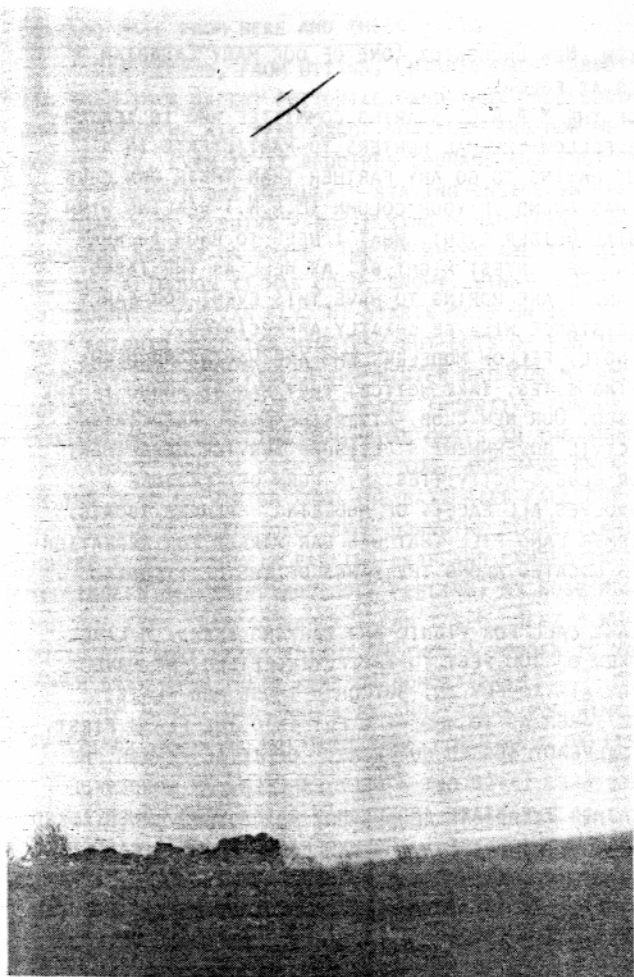
"I'M A MEMBER OF THE M.A.A.C. SOARING COMMITTEE WHO IS SEARCHING FOR A WAY FOR OUR FELLOW THERMAL HUNTERS TO PARTICIPATE IN A NATIONAL EVENT WITHOUT HAVING TO GO ANY FARTHER THAN THEIR OWN CLUB FIELD...THE SOLUTION WAS FOUND IN YOUR COLUMN (M.A.N.) DEALING WITH THE INTERNATIONAL POSTAL GLIDER EVENT. WHAT I NEED TO KNOW IS WHAT THE RULES FOR THAT KIND OF CONTEST MIGHT BE, AS WELL AS THE TASKS. MY NATIONAL CHAIRMAN AND I ARE HOPING TO HAVE THIS EVENT FOR EARLY THIS FALL, SO YOUR ASSISTANCE WILL BE GREATLY APPRECIATED.

"ON A POSITIVE NOTE, FELLOW MODELERS WHO ARE HAVING PROBLEMS FINDING OR LOSING FLYING SITES, TAKE NOTICE: THEY CAN BE FOUND IF THE CORRECT APPROACH IS USED. OUR NEW CLUB, RIVERSIDE MODEL ASSOCIATION APPROACHED THE LOCAL CIVIL GOVERNMENT'S 'LEISURE SERVICE DEPARTMENT' AND 'SOLD' THEM ON OUR CLUB'S ACTIVITIES AS A FORM OF 'LEISURE'. NOTE THAT OUR CLUB INVOLVES ALL FACETS OF MODELING - PLANES, BOATS, ETC. THE SITE IS A FORMER LAND FILL THAT WAS EAR MARKED FOR REREATION-AL DEVELOPMENT, AND IS LOCATED ALONG THE BANKS OF THE PETITCODIAC RIVER.

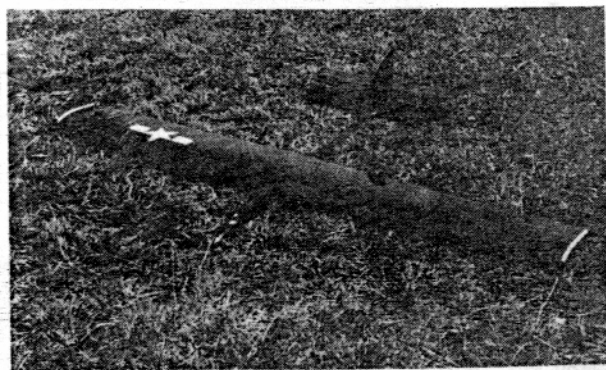
"OUR INITIAL PLANS CALL FOR PICNIC AND PARKING AREAS, A LARGE 'PIT' AREA WITH A BUFFER OF 100 FEET TO THE FLYING FIELD. WE HAVE LITERALLY MILES OF OPEN AIR TO FLY IN, BUT OH - THOSE MUD FLATS! BETS ARE ALREADY BEING TAKEN AS TO WHO WILL FLY INTO THE FLATS FIRST. ME AND MY GENTLE LADY ALREADY LOGGED OUR FIRST 'OFFICIAL' CRASH. WE HIT ONE OF THE MARKER STAKES LAYED OUT A WEEK EARLIER. MY WONDERFUL WIFE SAW ME TAKE A BEAD ON THE STAKE AND DIDN'T SAY A WORD. WHEN ASKED WHY NOT, SHE SAID: 'YOU'RE THE PILOT - THE EXPERIENCED ONE - CARE TO BORROW MY GLASSES?'"

IAN, YOU'VE SAID IT ALL. THE IDEA OF APPROACHING THE LOCAL 'REC' GROUP IN YOUR TOWN HAS A LOT OF MERIT, AND A CAREFUL SELLING JOB WITH POSSIBLY A SKETCH OR TWO AND SOME PHOTOS IS A GOOD PLAN. I HAVE ALSO KNOWN CLUBS TO INVITE THE LOCAL OFFICIALS OUT TO SEE THEM IN THEIR ACTIVITIES; PICNICS, FLYING, KIDS, WIVES, ETC., ETC. THEY LIKE TO SEE THE WHOLE FAMILY INVOLVED, TOO...AND YOU STAND A BETTER CHANCE WITH THEM IF THEY CAN SEE THAT WHAT YOU'RE ASKING WILL BENEFIT A GREAT VARIETY OF PEOPLE. THANKS FOR SHARING WITH US, AND -SAY- WHO WAS THE FIRST IN THE MUD, ANYWAY? - JHG



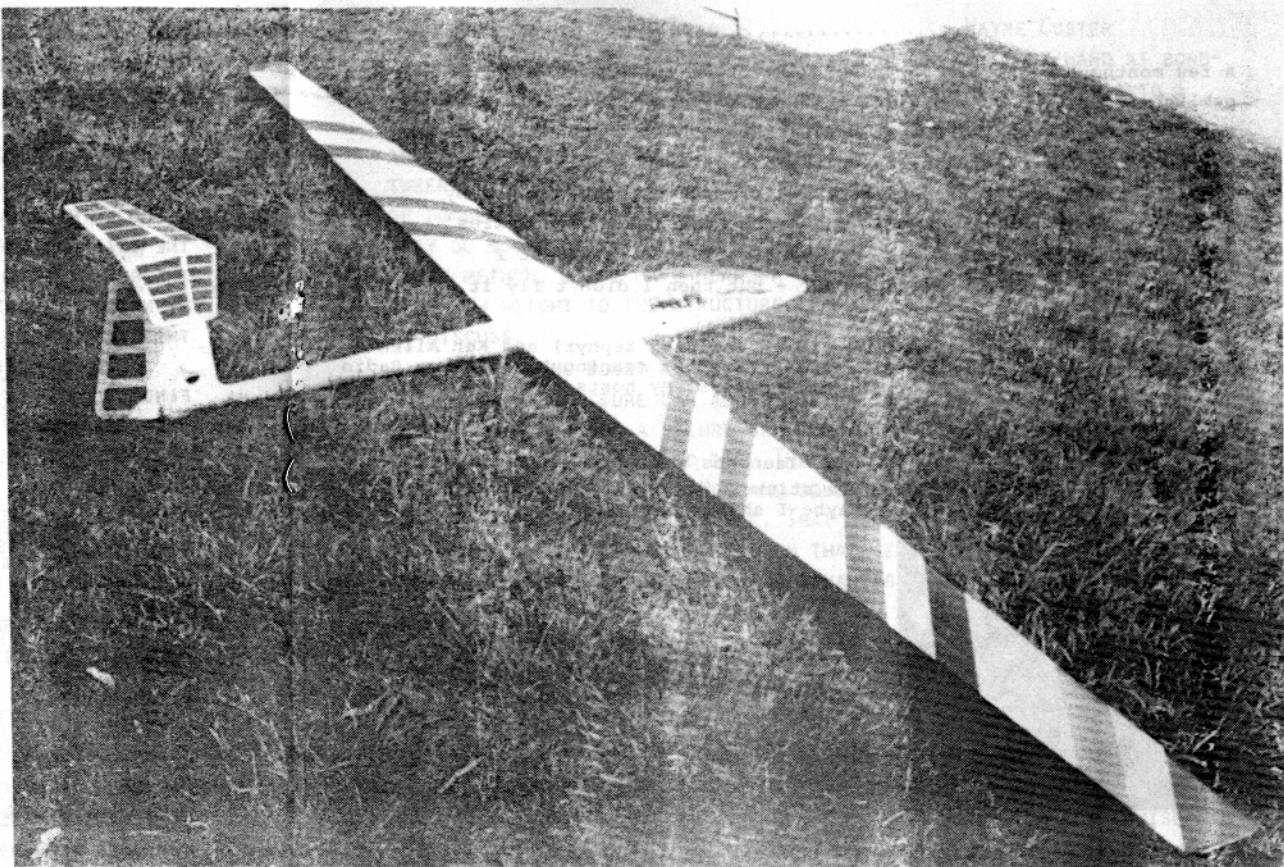


THE SB-10 ASCENDS IN 25 MPH WINDS ON ITS FIRST FLIGHT - WHICH LASTED FOR AN HOUR. CARRERA DESIGN.



JIM GILGENBACH, FOND DU LAC, WISCONSIN, HAS UNIQUE 'TIPERON' DESIGN, USING WINGLETS. SHIP FLEW IN VALLEY AERO MODELERS ANNUAL 2-METER CONTEST.

PHOTO BY MIKE BARKELOW OF VAM. INFO SUBMITTED BY LEE MURRAY.



MIRKO BODUL'S KESTREL FROM CARRERA



JOHN DUINO OF THE INLAND SOARING SOCIETY (CALIF.) SENDS US THIS SHOT OF A CANARD DESIGN ENTERED IN THE RECENT HAND-LAUNCH SAILPLANE CONTEST. NO OTHER INFORMATION WAS SENT WITH THE PHOTO, BUT WE CAN PROBABLY GET IT IF ENOUGH READERS ARE INTERESTED. SHIP REMINDS ONE OF THE RUTAN SOLITAIRE,

A few months ago, April '85 to be exact, your intrepid editor/publisher ventured to the wilds of the mid west - Dayton Ohio - to visit some friends from the DARTS club: Ken Allen and Gale Leach. While there, they persuaded me to fly Gale's hand-launch sailplane ZEPHYR, scratch-built from plans. The accompanying photos show my pitiful attempts to fly what is one of the outstanding 'chuckies' available today. Thanks, guys, for your patience...at least I didn't 'ding' the ship beyond repair - but then I didn't fly it that much!!!

Gale Leach (holding Zephyr) and Ken Allen of the DARTS club; meaning Dayton Area Radio Thermal Soarers. My hosts in April at the club field.



Gale launches while Jim nervously thumbs the sticks. Will it, or won't it? Maybe I should say: will I or won't I?



Photos courtesy of Ken Allen



Yaaaay! It's way up there!  
(Well, at least it looks small because of the wide angle lens and the small span.)



Sometimes you have to let a guy fly his own sailplane, so I retrieved it a couple of times for Gale...but I did manage to get in some really nice early evening flights...and soared, too!

## BONDING SKINS TO FOAM CORES.....WAYNE CUSTER

SOONER OR LATER, YOU'LL PROBABLY WANT TO TRY YOUR HAND AT BONDING SHEETS OF Balsa, PLYWOOD, FIBERGLASS, OR OTHER MATERIALS TO A FOAM WING CORE. TRADITIONAL PRACTICE IS TO USE EPOXY FOR THE BOND - AND IT WORKS QUITE WELL, RESULTING IN A SECURE AND UNIFORM BOND BETWEEN FOAM AND SKIN. OTHER METHODS OF MORE RECENT DATE RELY ON STRIPS OF DOUBLE-STICK TAPE, AND THESE ARE QUICKER AND LESS 'MESSY' - BUT THEY DO NOT ALLOW MISTAKES ON THE FIRST TRY. FRANKLY, I LIKE THE EPOXY METHOD, BUT I HAVE HEARD A LOT OF CRITICISM ABOUT EPOXY ADDING TOO MUCH WEIGHT TO THE STRUCTURE...AND IT IS THIS POINT THAT I'D LIKE TO DISCUSS.

THERE'S NO DOUBT ABOUT IT, EPOXY RESIN IS HEAVY, AND LIBERAL APPLICATION TO A STRUCTURE CAN ADD WEIGHT BEYOND WHAT IS REALLY NEEDED FOR A GOOD BOND, OR FOR A SECURE ADHERENCE - OR WHAT IS WANTED IN TERMS OF FLYING WEIGHT. WHAT TO DO? THE USUAL SOLUTION IS TO SPREAD THE EPOXY AS THINLY AS POSSIBLE, AND SQUEEGEE OFF THE EXCESS WITH THE EDGE OF A PLAYING CARD, FOR EXAMPLE. THAT WORKS FINE, BUT IS STILL MESSY.

I'VE DEVELOPED MY OWN SYSTEM THAT GETS RID OF THE EXCESS WEIGHT WHILE RETAINING ALL OF THE OTHER ADVANTAGES OF EPOXY, AND IT WORKS LIKE THIS:

1. BEFORE SMEARING THE EPOXY ON YOUR WING CORES, CAREFULLY SAND THEM SMOOTH AND THEN VACUUM OR BLOW THE SURFACES TO REMOVE ALL TRACES OF DUST. TAKE A DAMP (NOT WET) CLOTH AND QUICKLY WIPE THE SURFACE, ALLOWING IT TO DRY BEFORE FURTHER WORK.

2. NEXT, CAREFULLY MARK THE WING SURFACE WITH A GRID OF LINES ABOUT ONE INCH APART, RUNNING IN BOTH DIRECTIONS; I.E., SPANWISE AND CHORDWISE, RESULTING IN A 'CHECKERBOARD' PATTERN OF LIGHTLY-DRAWN PENCIL LINES (USE VERY SOFT LEAD SO AS NOT TO SCORE THE SURFACE...OR A MARKING PEN WITH FELT TIP, WHICH I PREFER).

3. NOW, USING YOUR FAVORITE DAUBER: AN 'ACID' BRUSH, A Q-TIP,<sup>TM</sup> YOUR FINGERTIP, OR SOME OTHER ITEM, PLACE JUST A DAB OF EPOXY IN THE CENTER OF EACH SQUARE (OR AT THE INTERSECTION OF EACH PAIR OF LINES).

4. PLACE THE SKINS AS USUAL, AND WEIGHT AS USUAL UNTIL CURE IS ACHIEVED. THE EPOXY SQUEEZES OUT UNDER THE PRESSURE AND COVERS A GOOD SURFACE AREA, BUT NOT ALL OF IT. BE SURE TO RUN A THIN BEAD OF EPOXY AROUND ALL EDGES: LEADING EDGES, SPOILER OUTLINES, TRAILING EDGES, ETC.

THE ADVANTAGE HERE IS GREAT WEIGHT SAVING - POSSIBLY 3/4THS OF WHAT YOU'D ORDINARILY USE. IN CASE YOU THINK THAT THIS BOND IS NOT ENOUGH, CONSIDER THE FACT THAT FOR YEARS WE'VE ALL BEEN ADHERING OUR COVERING MATERIALS TO THE TOPS OF RIBS...AND EVEN THOSE WITH CAP STRIPS OFFER FAR LESS BEARING AREA THAN MY DOT AND DAUB METHOD. I FIGURE I GET 25 - 50% COVERAGE (CONSIDERING THE SQUEEZE-OUT OF EACH DROP). IT WORKS FINE FOR ME, AND I THINK IT WILL WORK WELL FOR YOU, TOO. YOU CAN HAVE THOSE SECURELY BONDED SKINS AND STILL BE LIGHTER THAN YOU THOUGHT POSSIBLE. TRY IT.

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## WINDJAMMER, ELECTRIC-POWERED SAILPLANE FROM AUSTRALIA...BRUCE ABELL

By way of introduction - or should I say 're-introduction' - I'd like to mention a few things about Bruce Abell. First, he's my good friend (in Aussie, they call it 'mate') of longstanding... a friendship that began by correspondence about six or seven years ago. Second, he's a darned fine modeller, having built and flown everything from free flight to RC. He's interested in SAM, in Nordic, Wakefield, Scale, Electric Power, design, construction, fiberglass and other composites, plus a dozen or more other things I've forgotten. Not only that, he's an authority on Australian wildflowers. He writes the gliding column for Airborne, Australian model mag, and has contributed to RCSA, Model Airplane News, Soartech, and a bunch of other journals and newsletters. Bruce designs airfoils, too, and some of them have been featured in RCSA in past issues; they are the "BA-" Series, and over 20 of them have been designed and tested to date. What else can I say? One thing: we welcome you once again to our pages, mate!

"...I'VE BUILT A NEW 2-METER BIRD, AND I'VE USED MY BA-19/12A SECTION ON IT WITH FULLY SHEETED UNDER SURFACE AND FABRIC-COVERED UPPER SURFACE, AND TWO TURBULATOR SPARS AHEAD OF THE MAIN SPAR. I'VE USED AN ARTICULATED TAILPLANE AND RUDDER INSTEAD OF MY USUAL 'ALL-FLYING' TAILPLANE UNIT, BUT I THINK I'LL HAVE TO INCREASE THE RUDDER AND ELEVATOR AREAS, AS THE RESPONSES AT LOW SPEED ARE VERY POOR.."

"THE MODEL FLIES VERY WELL AND HAS AN EXCELLENT SPEED RANGE, WHICH ALLOWS ME TO WORK LIFT WELL DOWN WIND AND STILL GET BACK OK. I BUILT A SECOND FUSELAGE FOR THE WINGS AND CALLED IT WINDJAMMER, AND FITTED THE ELECTRIC UNIT...IT FLIES LIKE A DREAM. IN THE 2-METER CONFIGURATION THE WING LOADING IS 7 OZ./SQ. FT., AND THE REYNOLDS NUMBER IS 85,000. THE ELECTRIC VERSION HAS A LOADING OF 15 OZ./SQ. FT. AND A REYNOLDS NUMBER OF 125,000. THERE IS VERY LITTLE DIFFERENCE IN PERFORMANCE BETWEEN THEM, OVERALL."

"THE STRAIGHT GLIDER VERSION WINS OUT IN LIGHT, FLUKEY CONDITIONS, WHILE THE ELECTRIC-POWERED BIRD IS BETTER IN THE WINDIER, NO-LIFT SITUATION. BY THE WAY, THE TAIL FEATHERS ARE THE SAME FOR BOTH VERSIONS, BUT THE ELECTRIC VERSION HAS THE WING MOVED 2" FARTHER FORWARD THAN THE STRAIGHT GLIDER UNIT."

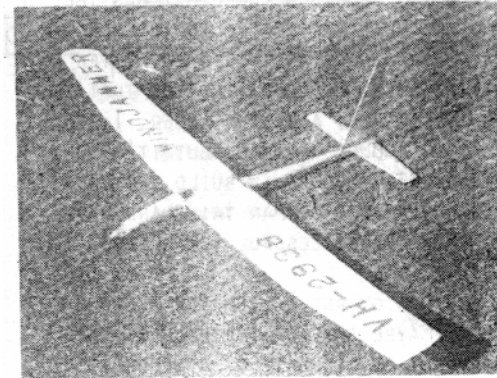
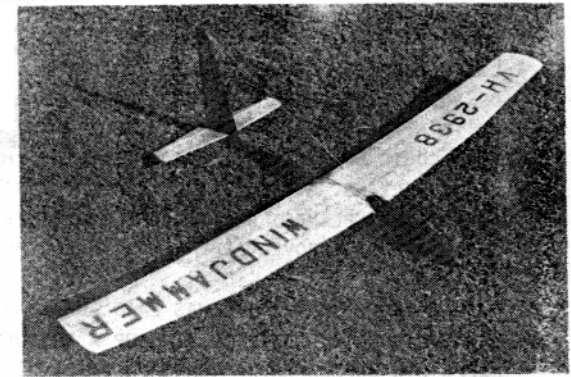
"THE NEXT MOVES ARE TO BUILD A NEW 100" WING FOR THE ELECTRIC BIRD, AND TO START PLAYING AROUND WITH PROPS. I'M CERTAIN I CAN IMPROVE ON THE CLIMB PERFORMANCE BY BOTH MODS. THE PROP WILL PROBABLY FINISH UP AROUND 16" DIAMETER BY 5-TO 6-INCH PITCH, AND COULD EVEN BE A SINGLE-BLADE FOLDER, WITH THE COUNTER-WEIGHT FOLDING, TOO."

"THE MOTOR, BY THE WAY, IS THE STANDARD GRAUPNER Jumbo 550 WITH 3:1 GEARING AS SOLD BY HOBBY LOBBY. I FLY IT WITH THE 2 BY 5-CELL PACKS IN SERIES THAT CAME WITH IT, AND ALSO THE 2 BY 7-CELL PACKS (SANYO 800 A.R.) THAT I'VE MADE UP FOR IT. I CAN SEE VERY LITTLE DIFFERENCE BETWEEN THE TWO DIFFERENT PACKS. MOTOR RUN TIME IS ABOUT 4 - 5 MINUTES, WHICH IS AMPLE."

"MY CLUB (N.A.C.M. - NORTHERN AREA CONTEST MODELERS) RAN A 2-METER GLIDER AND ELECTRIC THERMAL EVENT LAST SUNDAY, AND WE HAD A GREAT DAY. THE 2-METER GLIDER EVENT WAS A STRAIGHT TASK A EVENT IN SCRATCHY LIFT, BUT I COULD ONLY SCORE A 1000 FOR TWO OF THE 5 ROUNDS, SO MISSED OUT ON A PLACE."

"THE ELECTRIC THERMAL EVENT IS SOMETHING WE'RE DEVELOPING OVER HERE TO TRY TO EVEN OUT THE PERFORMANCE DIFFERENCE BETWEEN THE FERRITE (CHEAP) MOTORS AND THE COBALT (EXPENSIVE) UNITS. THIS EVENT COMPRISES A 15-MINUTE MAXIMUM FLIGHT WITH THE MOTOR RUN TIME BEING DEDUCTED FROM THE TOTAL FLIGHT TIME. HOWEVER, THE FERRITE-MOTOR POWERED GLIDERS GET A BONUS OF 2 MINUTES' FREE MOTOR RUN (AS DO THE 7-CELL COBALT MOTORS), AND THIS REALLY EVENS THINGS OUT - AS WITNESS THE FACT THAT OUT OF 7 ENTRIES, I CAME IN 3RD IN MY FIRST ELECTRIC-POWERED GLIDER CONTEST WITH MY FIRST ELECTRIC-POWERED GLIDER. IT'S A GREAT TYPE OF COMP., AND I CAN THOROUGHLY RECOMMEND THE GRAUPNER (OR SIMILAR TYPE) FERRITE MOTOR AS A GOOD, CHEAP WAY OF STARTING OUT IN ELECTRIC-POWERED FLIGHT."

ABELL'S ORIGINAL 2-METER  
(GLIDER) WINDJAMMER



HERE'S THE ELECTRIC WINDJAMMER;  
NEAT, HUH?

WINDJAMMER'S FOLDING PROP  
(NOTE AIR SCOOP)



LAYOUT OF WINDJAMMER'S ELECTRIC MOTOR,  
BATTERIES, RADIO, SERVOS, ETC. CROWDED,  
BUT NEAT AND FUNCTIONAL. NOTE AIR EXITS.

Bruce, many thanks for your comments and for the pix. I hope that you will get the turning problems straightened out, too. Have you by any chance thought about playing around with the dihedral a bit to see if you can get more rudder authority? That helps sometimes. We'll all be waiting for more pix and reports on your success. - JHG.



HAMPSON'S RHINE/OXFORD GLIDER.....FOR FUN.....CRAIG HAMPSON

CRAIG HAMPSON HAS WRITTEN TO ME SEVERAL TIMES OVER THE PAST YEAR OR SO, AND HAS REALLY IMPRESSED ME WITH HIS ABILITIES AND EFFORTS. HE IS A YOUNG MAN, STILL IN HIGH SCHOOL, AND HAS INTERESTS IN THE BOY SCOUTS OF AMERICA, PHOTOGRAPHY, AND HELPING OTHERS GET THEIR PLANES FLYING. A PRETTY BUSY FELLOW. BESIDES ALL THAT, HE DESIGNS HIS OWN SAILPLANES, AND IS VERY MUCH INTERESTED IN MODIFYING BASIC DESIGNS FOR IMPROVED APPEARANCE AND/OR PERFORMANCE. HERE'S HIS LATEST CREATION.

IT SEEMS THAT CRAIG WAS LAID LOW BY A COLD A FEW MONTHS AGO, AND SPENT HIS 'DOWN' TIME DRAWING UP A SET OF MINI PLANS FOR WHAT HE CALLS HIS OXFORD/RHINE (OR RHINE/OXFORD) GLIDER. IT HAS THAT 'OLD FASHIONED' LOOK AND CAN BE BUILT IN TWO VERSIONS: ONE THAT HAS THE ENGLISH LOOK (THE OXFORD) AND ANOTHER THAT HAS THE TEUTONIC LOOK (THE RHINE). HE SAYS: "...THEY (THE DRAWINGS) ARE FOR A TWO-METER SAILPLANE THAT I AM TRYING TO GIVE THE WWI LOOK TO...NOTICE THAT THE FRAMEWORK IN THE REAR IS OPEN AND UNCOVERED, A LA THE ELDER. I REALISE THAT THIS WILL CREATE AN ENORMOUS AMOUNT OF DRAG, BUT IT'S SUPPOSED TO BE A FUN, NON-COMPETITION PLANE. YOU COULD BUILD TWO; ONE WITH THE BRITISH TAIL AND THE OTHER WITH THE GERMAN TAIL, AND HAVE COMBAT. IF I EVER BUILD THEM AND THEY ARE SUCCESSFUL (CRASHLESS) I MAY SUBMIT THEM AS A CONSTRUCTION ARTICLE."

THE SHIP LOOKS VERY NEAT TO ME, CRAIG, AND I WISH YOU ALL THE SUCCESS YOU WANT OR NEED WITH THEM. MAYBE SOME OF THE RCSD READERS WOULD LIKE TO BUILD A PAIR AND HAVE AT IT (COMBAT) ON A SLOPE SOMEWHERE, OR EVEN IN A THERMAL. THEY LOOK AS IF THEY SHOULD FLY QUITE WELL, ESPECIALLY WITH THE EPPLER 214 AIRFOIL YOU HAVE GIVEN THEM, PLUS THE GENEROUS WING AREA, SIMPLE PLANFORM, AND A PRETTY DARNED GOOD SET OF PROPORTIONS. THERE OUGHT TO BE ENOUGH DETAIL IN THE SKETCHES THAT ALMOST ANYONE COULD BUILD UP A PAIR OF SAILPLANES FROM SCRATCH. EVEN BETTER, A SET OF WORKING PLANS COULD BE MADE UP FROM THE DETAILS GIVEN. WHO'LL BE THE FIRST?

AS A MATTER OF FACT, THE THOUGHT HAS OCCURRED THAT THESE MIGHT MAKE SOME SPLENDID HAND-LAUNCHED SHIPS. NOW THEN, ABOUT THAT 'OPEN' AREA IN THE REAR FUSELAGE: WHY NOT COVER IT WITH TRANSPARENT COVERING MATERIAL, TO IMPROVE THE DRAG SITUATION WHILE PRESERVING THE APPEARANCE OF OPEN STRUCTURE?

I NOTICED THAT THE AREA OF THE 'GERMAN' TAIL APPEARS TO BE A BIT LESS THAN THAT OF THE 'BRITISH' TAIL. I THINK IT WOULD BE A GOOD IDEA TO KEEP THE SHAPES, BUT TO CHANGE THE AREAS SO THAT THEY ARE MORE NEARLY EQUAL. IN FACT, PROBABLY THE GERMAN TAIL OUGHT TO BE A TAD LARGER.

THIS IS A TWO-METER SAILPLANE, AND COULD BE FLOWN IN CONTESTS AS WELL AS JUST FOR FUN. IN FACT, I WAS THINKING THAT THE WING COULD BE MADE TO HAVE A 'SCALLOPED' TRAILING EDGE (DONE WITH A BIT OF SANDPAPER WRAPPED AROUND A DOWEL) TO MAKE IT LOOK MORE LIKE A SPAD, FOR EXAMPLE, OR ANY ONE OF HALF A DOZEN OTHER SHIPS THAT USED WIRE TRAILING EDGES. THE FABRIC, WHEN PUT IN PLACE AND DOPED, PULLED THE WIRES IN BETWEEN THE RIBS THROUGH THE SHRINKING PROCESS, MAKING THAT SCALLOPED LOOK. AS I SAID BEFORE - WHO'LL BE FIRST?

