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Vol. 2 No. 11 NOVEMBER 1985

The FLINGER

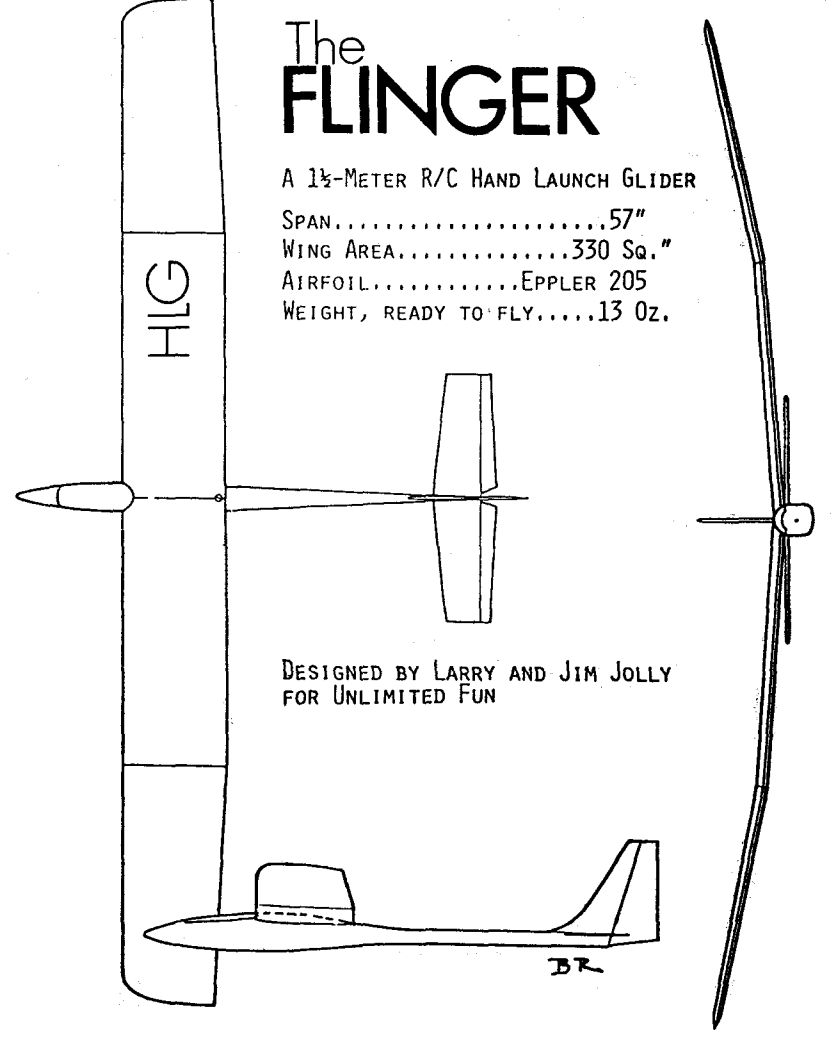
A 1½-METER R/C HAND LAUNCH GLIDER

SPAN.....57"

WING AREA.....330 Sq."

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AT LAST! A WORK CENTER FOR MODEL BUILDERS

- (A) Power Center to Hold Hobby Power Tools
- (B) Extension Work Bench
- (C) Pinable Homesote/Top Over Particle Board
- (D) Pegboard Riser
- (E) Snaptab Tool Holders
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- (J) Adjustable Swivel Casters
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COMPACT WORK CENTER**
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*Power tools not included

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This will give you a work center with the most workshop capabilities on the market.

*Assembly tool included

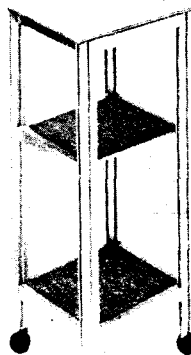


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Name _____

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Growth how to promote and handle it:

One of the ever-present problems with RCSD (and you can call them opportunities, if you like) is how to GET BIGGER, and how to do it in such a way as to improve the size and quality of RCSD. Most of you who have taken the time to write to me (and most of you have - even if it's on your renewal slips) tell me that we're on the right track, and to keep up the good work. Some of you have asked for a bigger and better RCSD each month, with more pages, and more pictures and drawings. You and I want the same thing, but the only question is how we get there. A simple answer would be to say MONEY, but that's not the whole answer.

When RCSD first began, it was twelve pages, including the cover. Then it went to sixteen pages, and finally to twenty pages. There has been an increase in quality, as well - due primarily to my good friend and right-hand man Bob Rondeau. It is the graphic arts talent of Bob that makes this newsletter what it is now, and I'm sure that you'll agree there has been a major optical/visual improvement in the contents and appearance.

So, when am I going to get to the point? Okay, here's the bottom line: RCSD needs to grow by another four pages each month, but I can't afford to do that until the circulation grows by about 20% at the minimum. If we could double the circulation, you could have a really improved RCSD in both size and content. I need your help.

YOU are the solution to that, my friends; you, the loyal subscribers and readers. If each of you were to get me just one more subscriber, we could double our circulation! I want that as bad as you do. All of you who have been with me for a year or so know that my dream is to have an RC Soaring Magazine, slick paper, color and all, someday...and we're getting there slowly but surely.

Please ask your hobby stores to distribute my subscription forms; and ask your contest CD's to request subscription forms to pass out at contests. I'll be happy to provide them at no charge. If you'd like to start a ham radio network, let me know. This is something that is apparently going on already with Walt Good and some others meeting each month on the fifteen-meter band. I'd like Walt to talk up RCSD on the air, too...not sell it, mind you, but just tell folks of its existence: a forum for RC soaring people.

I'm going to expand my advertising in the magazines, too, as money permits. RCSD is going to succeed, bigger and better than ever. You have my promise on that, but I can't do it alone. Let's GO! One of my good friends who has made himself a considerable pile of money has a philosophy about growth: let your business tell you where and when to expand - don't force-feed it with large inputs of capital. Right now, we're in a growth phase, and the newsletter is guiding its own growth through your help...growth that is controlled and from within. Exactly how YOU and I want it. Let's GO!

Jim Gray
Jim Gray

III Start

SOARING MAIL

RECENTLY RCSD RECEIVED A LETTER FROM THE PHILIPPINES, SENT BY ONE F.B. AVENA, 253 HARAYA FARMS, GAYA-GAYA, SAN JOSE DEL MONTE, BULACAN. F.B. IS A NEW SUBSCRIBER, AND HAS PURCHASED ALL OF THE AVAILABLE BACK ISSUES. HE HAS A TEN-FOOT SAILPLANE THAT IS DESCRIBED AS "NOT REALLY WELL DESIGNED". HOWEVER, AFTER READING THE DESCRIPTION, I'D HAVE TO SAY THAT IT IS QUITE WELL DESIGNED, WITH ONLY A FEW CHANGES NEEDED TO MAKE IT QUITE A GOOD MACHINE. HERE IS HOW F.B. TALKS ABOUT IT.

"AVERAGE CHORD IS 12 INCHES, AND THE AIRFOIL IS THE MB253515...WELL, SORT OF. IT CAME OUT VERY TAIL HEAVY AND MIGHT REQUIRE ABOUT 2½ POUNDS OF WEIGHT AT THE NOSE JUST TO BALANCE...WHICH MIGHT NOT FIT INTO THE FUSELAGE, AS I MADE IT QUITE SLIM. THE WINGS ARE FOAM COVERED WITH Balsa, AND THEN COVERED WITH MONOKOTE. I COULD NOT OBTAIN SPRUCE, SO I USED 1/4" X 1/2" PLYWOOD AS SPARS - A REALLY FOOLISH CHOICE. I USED 1/2" SQUARE ALUMINUM TUBE, 6" LONG, IN EACH WING AS A WING JOINER TUBE. IT WAS ONLY LATELY THAT I LEARNED ABOUT THE BIGGIES, AND THIS SPAR SYSTEM JUST WILL NOT TAKE IT. I HAVE ALWAYS USED A GAS ENGINE TO GET UP TO ALTITUDE, AS THIS IS THE MOST CONVENIENT FOR MY SITUATION, NOT NECESSARILY WHAT I LIKE TO SEE ON A SAILPLANE. WITH ALL THESE TECHNICAL PROBLEMS, I JUST HAD TO STOP.

"I HAVE SEEN DAVE PELTZ' BIGGIE, AND I INTEND TO WRITE TO HIM. I UNDERSTAND THE SAGITTA XC IS NO LONGER IN PRODUCTION. DO YOU KNOW OF ANYONE WHO MIGHT HAVE A KIT OF THIS, OR EVEN PLANS, THAT THEY WOULD BE WILLING TO SELL TO ME? SO LONG FOR NOW." (SIGNED) F.B. AVENA.

WELL, I DON'T HAPPEN TO KNOW OF ANYONE WHO HAS EITHER PLANS OR A KIT, BUT I WOULD BE WILLING TO BET THAT SOMEONE WHO READS RCSD KNOWS...AND I'LL ALSO BET THAT THEY WILL GET IN TOUCH WITH YOU - SO BY THE TIME YOU RECEIVE THIS ISSUE, YOU MAY HAVE A RESPONSE...OR NOT LONG THEREAFTER. GOOD LUCK!

THE NEXT LETTER IS FROM ED DEPUE FROM LONG BEACH, CALIFORNIA. ED IS THE SECRETARY OF THE SULA (SOARING UNION OF LOS ANGELES) CLUB, AND OFFERS SOME INFORMATION REGARDING THE SCALE MONARCH SAILPLANE FEATURED ON THE COVER OF A RECENT RCSD. HERE'S WHAT ED HAD TO SAY:

"THE FELLOW HOLDING THE MONARCH MODEL WAS QUENTIN BOLIN - A RESIDENT OF LONG BEACH. HE WAS KNOWN AS "BUTCH" BY HIS FRIENDS. HE DIED OF BRAIN CANCER IN AUGUST '84. I AM SAD TO SAY, AS HE AND I HAD DEVELOPED A MODELLING FRIENDSHIP IN THE TWO YEARS I GOT TO KNOW HIM. HE WAS A MEMBER OF THE SOARING UNION OF LOS ANGELES, AND WAS A PROLIFIC BUILDER AND EXPERIMENTER. HE BUILT THE MONARCH FROM THE 3-VIEWS IN A SOARING BOOK, AND USED HIS OWN AIRFOIL. THE SPAN WAS ABOUT TEN FEET. ALTHOUGH I NEVER FLEW IT, THE MODEL WAS A JOY TO BEHOLD IN THE AIR, AND BUTCH SAID IT HANDLED NICELY. THE WINGS WERE Balsa AND PLY, WITH A "D" TUBE, AND COVERED WITH MICAFILM. THE POD AND VERTICAL FIN WERE FIBERGLASS OVER FOAM. WHEN HE DIED, HIS FATHER ASKED ME TO SELL THE EQUIPMENT TO MEMBERS OF THE CLUB. THE MONARCH WAS PURCHASED BY PHIL BURTON, ANOTHER FRIEND OF HIS. BUTCH ALSO DEVELOPED ANOTHER OUTSTANDING FLYING WING BASED ON THE FULL-SCALE MITCHELL WING GLIDER. UNFORTUNATELY I DON'T HAVE ANY PICTURES OF IT, AS THE MITCHELL WING WAS DESTROYED WHILE LAUNCHING FROM A WINCH. I HAVE A COUPLE OF HIS ORIGINAL SLOPE 'WINGS' DESIGNS; ONE HAS A FOAM WING WITH KEVLAR POD, AND THE OTHER IS BUILT WITH WOOD, GLASS, FOAM AND CARBON FIBER - VERY STRONG AND LIGHT. I LEARNED A LOT ABOUT COMPOSITES FROM MR. QUENTIN BOLIN (BUTCH) AND VERY MUCH MISS HIS COMPANY. HE WAS 31 WHEN HE DIED."

ED, THE LOSS OF BUTCH IS OUR LOSS, TOO. IT'S NEVER GOOD TO LOSE ONE OF THE CLAN. THANKS FOR SHARING.

LARRY JOLLY'S FLINGER - A FINE HAND/WINCH LAUNCH DESIGN...TY SAWYER

I BUILT MY FLINGER STRICTLY ACCORDING TO PLAN, WITH VERY FEW 'MODS', WHICH I WILL DESCRIBE. THIS SMALL, ELEGANT SAILPLANE IS ONE OF THE BEST DESIGNS I HAVE FLOWN OF ANY SIZE, AND I BELIEVE IT IS FULLY EQUIVALENT TO ANY TWO-METER SAILPLANE I'VE FLOWN IN TERMS OF LAUNCH, PENETRATION, GLIDE, AND HANDLING. WITH THE PLANS-RECOMMENDED SETUP, I CAN DO SNAP ROLLS, SPINS, AND LOOPS...BUT NOT OUTSIDE LOOPS. THE STALL IS STRAIGHT AHEAD - EVEN WITH NO ADDED WASHOUT (POLY, OR TIP DIHEDRAL AUTOMATICALLY ADDS SOME WASHOUT). THE C.G. LOCATION IS ABOUT 1/8" - 1/4" BEHIND THE REAR EDGE OF THE SPAR. STABLE, INVERTED FLIGHT IS EASY.

THE FEW MODS I HAVE MADE INCLUDE LIGHT FIBERGLASS REINFORCEMENT AT THE DIHEDRAL BREAK, USING 1/2 OZ. MATERIAL AND BUTYRATE DOPE TO ADHERE IT TO THE WOOD. I ALSO ADDED SOME CARBON FIBER TOW TO THE TOP AND BOTTOM OF THE SPAR - GLUING IT IN PLACE WITH EPOXY RESIN. BECAUSE I GRASPED THE FUSELAGE TIGHTLY TO LAUNCH THIS TINY MACHINE, THE FUSELAGE BEGAN TO CRUSH IN SLIGHTLY UNDERNEATH THE TRAILING EDGE OF THE WING WHERE MY FINGERS SQUEEZED IT, SO I REINFORCED THE ENTIRE RECEIVER BAY UNDERNEATH THE WING WITH 1/32" PLYWOOD. IT IS NOW RIGID. I ADDED A FINGER HOLE UNDERNEATH THE FUSELAGE FOR BETTER LAUNCHING GRASP (JUST MY OWN DESIRE, PERHAPS NOT NEEDED BY ANYONE ELSE) AND PLACED A PLY REINFORCEMENT AT THE FRONT EDGE TO TAKE THE FORCE OF THE THROW. INSIDE THIS RECESS, I MOUNTED A THREE-CIRCUIT, NORMALLY-CLOSED MINI JACK (RADIO SHACK). INTO THIS JACK I FIT A MINI PLUG WITH A COUPLE OF BRIGHT RIBBONS ATTACHED TO IT. WHEN THE PLUG IS INSERTED, IT OPENS THE CIRCUIT - EFFECTIVELY SWITCHING OFF THE ON-BOARD BATTERY. YOU CAN'T FORGET TO PULL THE PLUG (TURN THE SWITCH ON) BEFORE LAUNCH BECAUSE THE PLUG IS IN THE FINGER HOLE WITH THE RIBBONS HANGING OUTSIDE THE FUSE. THE MINI-PLUG (ANOTHER ONE JUST LIKE THE FIRST ONE) IS RIGGED UP TO GO TO THE BATTERY CHARGER, SO THAT WHEN I WANT TO CHARGE THE BATTERY, I PULL THE "OFF" PLUG AND REPLACE IT WITH THE CHARGING PLUG. IT WORKS JUST FINE. THE FINGER HOLE IS 3/4" BEHIND THE MAIN BULKHEAD, BY THE WAY.

I HAVE HAD A FEW CRASHES, OR COLLISIONS WITH OBJECTS AND HAVE BROKEN THE FIN LEADING EDGE. I WOULD LIKE TO SUGGEST THAT WHEN YOU BUILD YOUR OWN FLINGER THAT YOU OUTLINE THE TAIL SURFACES, LEADING EDGES AT LEAST, WITH PROPERLY-SIZED SPRUCE TO HELP THE PROTECTION FACTOR A BIT. OH YES, ALMOST FORGOT: I FOUND THAT THE BOTTOM FORWARD FUSELAGE PLYWOOD FLOOR SHOULD EXTEND ALL THE WAY OUT THE NOSE BLOCK INSTEAD OF TERMINATING AT THE BACK EDGE, SO I EXTENDED IT BY ADDING A SMALL PLYWOOD PIECE. THIS MAKES THE FUSELAGE STRONGER UP WHERE IT CAN USE THE ADDED STRENGTH IN MY OPINION. I FOUND THAT THE TOW HOOK IN THE RECOMMENDED SPOT ON THE PLAN WAS A BIT TOO 'HAIRY' FOR ME, SO I PLACED IT ABOUT 1 1/4" BEHIND THE MAIN BULKHEAD.

THE CARBON FIBER SPAR REINFORCEMENTS PLUS THE NEW TOWHOOK LOCATION ALLOW ME TO PULL MY HEAVY-DUTY HI START BACK TO WHERE I ORDINARILY LAUNCH MY AQUILA - AND THE FLINGER GOES UP LIKE A ROCKET, STRAIGHT AS AN ARROW WITH NO TENDENCY TO WHIP OFF, OR EVEN TURN, RIGHT OR LEFT. THE LAUNCH IS AS NEAR VERTICAL AS I BELIEVE POSSIBLE. MY TOW HOOK IS A JIM TYRRE TYPE (SEE SKETCH). DEAD-AIR TIME (EARLY MORNING OR LATE EVENING) FROM A STANDARD HI-START LAUNCH, GIVES ME CONSISTENTLY 2':50" TIMES TO LANDING. MY AQUILA - WHICH IS A GREAT SAILPLANE - GIVES ME 2':30" DEAD-AIR TIMES FROM ABOUT THE SAME HEIGHT. I HAVE FLOWN AN ENTIRE FLIGHT FROM RELEASE TO LANDING "HANDS OFF" ANY CONTROLS, WITH NO SPIRAL NO CLIMB, AND NO DIVE. THIS IS THE 'TRUEST' SAILPLANE I'VE YET FLOWN.

U.S. POSTAL SERVICE.....AND POSSIBLE POSTAL PROBLEMS.....JIM GRAY

IN THE LAST FEW MAILINGS, I HAVE RECEIVED EVIDENCE IN THE FORM OF LETTERS FROM SOME OF YOU (MOSTLY CALIFORNIA AND NEW YORK) THAT YOU ARE NOT GETTING YOUR ISSUES. THIS IS MOST DISTURBING TO ME, BECAUSE PEGGY AND I RELIGIOUSLY PUT THE BULK MAILING INTO SACKS, HAUL IT TO THE LOCAL POST OFFICE, AND DO ALL THE DOZEN-AND-ONE THINGS THAT YOUR FRIENDLY POSTAL SERVICE DEMANDS BEFORE IT CAN GO OUT THE DOOR. I WILL ONLY SAY THAT THIS IS A HALF-DAY OPERATION ACCOMPANIED BY A FAIR AMOUNT OF GRIEF AND AGGRAVATION.

THEN, WHEN WE HEAR THAT YOU HAVEN'T RECEIVED YOUR ISSUE, WE ALWAYS SHIP A NEW ONE OUT TO YOU IN AN ENVELOPE AT FIRST CLASS RATES... A PROCEDURE THAT PARTLY NEGATES THE ADVANTAGES OF THIRD-CLASS MAILING THAT WE USE FOR THE U.S. (READ COST FOR THIS ONE).

THEREFORE, IF YOU WOULD PLEASE PUT A LITTLE PRESSURE ON YOUR LOCAL POSTMASTER WHEN YOU FAIL TO RECEIVE YOUR COPY, IT MIGHT HELP. OF COURSE IT IS POSSIBLE THAT HE DOESN'T HAVE ANYTHING TO DO WITH IT, EITHER - AND THAT SOME IN-BETWEEN POINT IS GIVING US THE GRIEF.

ANOTHER PROBLEM IS WITH MEXICO, CANADA AND FOREIGN MAILINGS. THESE ALL ARE EXTRA COST. CANADA MUST GO FIRST CLASS, IN ENVELOPES, AT A COST OF NEARLY 50¢ EACH. FOREIGN COPIES HAVE TO GO IN ENVELOPES AND COST \$1.20 EACH! THERE IS ZERO PROFIT IN ALL MY FOREIGN MAILINGS, IF YOU CONSIDER ALL OF THE OTHER COSTS BESIDES MAIL AND POSTAGE THAT GO INTO PREPARING AN ISSUE.

IT BEGINS TO LOOK LIKE I WILL HAVE TO INCREASE THE PRICE FOR FOREIGN MAILING NEXT YEAR IN ORDER TO BREAK EVEN ON COSTS, AND I WILL HAVE TO DO THE SAME FOR MEXICO AND CANADA. THIS REALLY HURTS YOU AND IT HURTS ME TO HAVE TO DO IT TO YOU, BUT IT'S THE REGULATIONS AND SOMETIMES DIFFICULT-TO-UNDERSTAND RULES THAT OUR LOYAL, FAITHFUL AND HARD-WORKING POSTAL EMPLOYEES HAVE TO CARRY OUT UNDER ORDERS FROM THE POSTAL SERVICE.

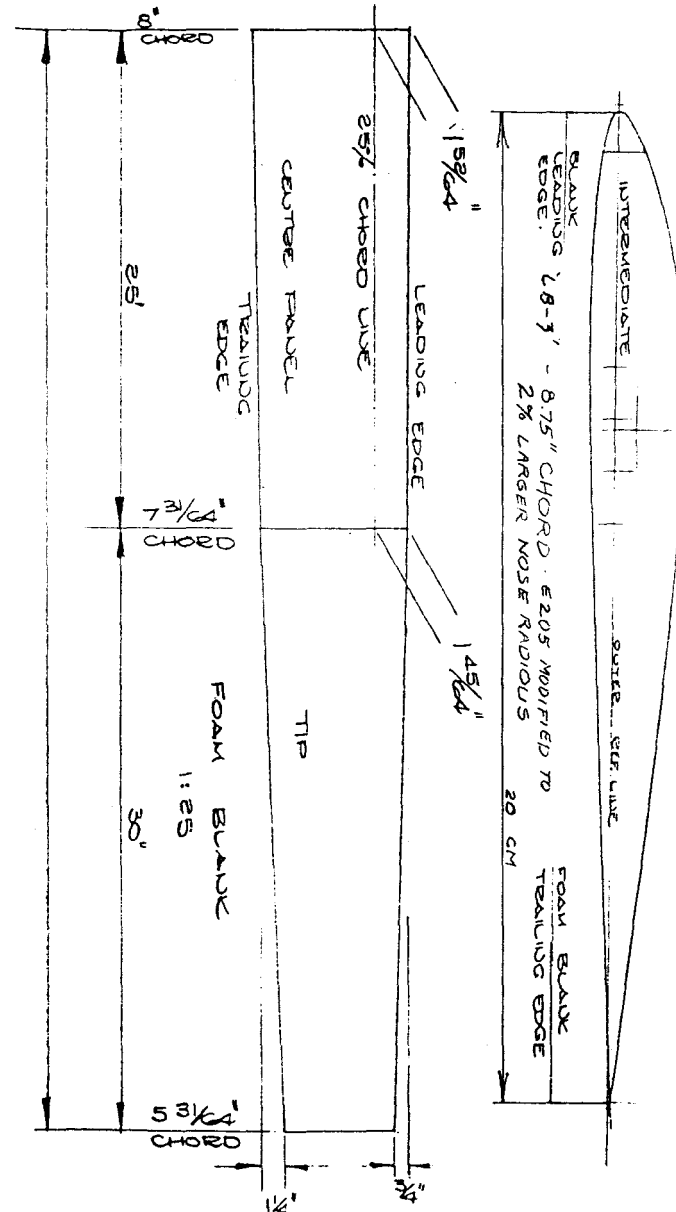
THE NET EFFECT IS A MORE COSTLY MAGAZINE WITHOUT ADDED VALUE TO YOU. IT BOTHERS ME EVERY BIT AS MUCH AS IT MUST ANNOY YOU. I AM LOOKING INTO OTHER MEANS OF REDUCING COST OF MAILING AND MAKING IT MORE EFFICIENT. ONE OF THEM IS TO GO TO SECOND-CLASS MAILING, AND I WOULD...EXCEPT THAT THE REQUIREMENTS ARE EVEN MORE STRINGENT FOR ME, AND INCLUDE SOME VERY REAL I.R.S. DIS-ADVANTAGES, OR SO I HAVE BEEN TOLD.

PLEASE BEAR WITH ME IN THESE TIMES OF TRIAL AND ERROR. I AM DOING MY BEST TO KEEP IT STRAIGHT AND HONEST ALL THE WAY THROUGH. I ALWAYS, WITHOUT FAIL, PUT THE COPIES IN THE MAIL DURING THE FIRST WEEK OF EVERY COVER MONTH. YOUR DECEMBER ISSUE WILL BE MAILED DURING THE FIRST WEEK IN DECEMBER, FOR EXAMPLE. SOMETIMES, WHEN I CAN SWING IT, YOUR COPIES WILL BE IN THE MAIL ON THE FIRST OR SECOND DAY OF THAT MONTH. RARELY, BUT ONCE IN A GREAT WHILE, I SLIP UP AND THEY GO INTO THE POST OFFICE AT THE END OF THE FIRST WEEK - BUT THAT HASN'T HAPPENED IN A LONG TIME. SO, IF YOUR COPY IS LATE GETTING TO YOU, IT COULD JUST BE THAT SOMEWHERE ALONG THE LINE SOMEBODY IS EITHER ASLEEP AT THE SWITCH OR HAS DITCHED ALL HIS BAG OF THIRD-CLASS MAIL BECAUSE HE DOESN'T WANT TO CARRY ALL THAT WEIGHT AROUND. SURE HOPE NOT.

PLEASE KEEP ME INFORMED OF YOUR DELIVERY PROBLEMS, IF ANY, AND THE CONDITION OF THE COPY WHEN YOU RECEIVE IT. MAYBE IT WILL HELP ME BUILD A FILE THAT I CAN PRESENT TO THE USPS AND GET RESULTS.

'THUNDA FROM DOWN UNDA'.....THE NEW LB-3.....BY BRUCE ABELL

MOST OF YOU KNOW BRUCE FROM HIS VARIOUS (AND POSSIBLY NEFARIOUS) SCHEMES PERPETRATED UPON US 'INNOCENT' AMERICAN SAILPLANE TYPES. HE HAS INTRODUCED US TO THE BA SERIES AIRFOILS (IN CASE YOU WONDER, THAT MEANS BRUCE ABELL, NOT THE "A TEAM" CHAP, ALTHOUGH I SUPPOSE ONE COULD MAKE A CASE FOR THAT, TOO). BRUCE HAS DESIGNED MANY SAILPLANES, INCLUDING THE AUSTRALIAN WINDSONG, THE WINDJAMMER, THE EMU, AND OTHERS. HIS SON'S DESIGN - THE PETRI - WAS FEATURED ON RCSD'S COVER LAST YEAR. SO NOW, OLD DAD IS BACK WITH A NEW ONE - THE LB-3. (PLEASE DON'T ASK WHAT THE LB STANDS FOR, AS I HAVEN'T DARED ASK BRUCE, EITHER).

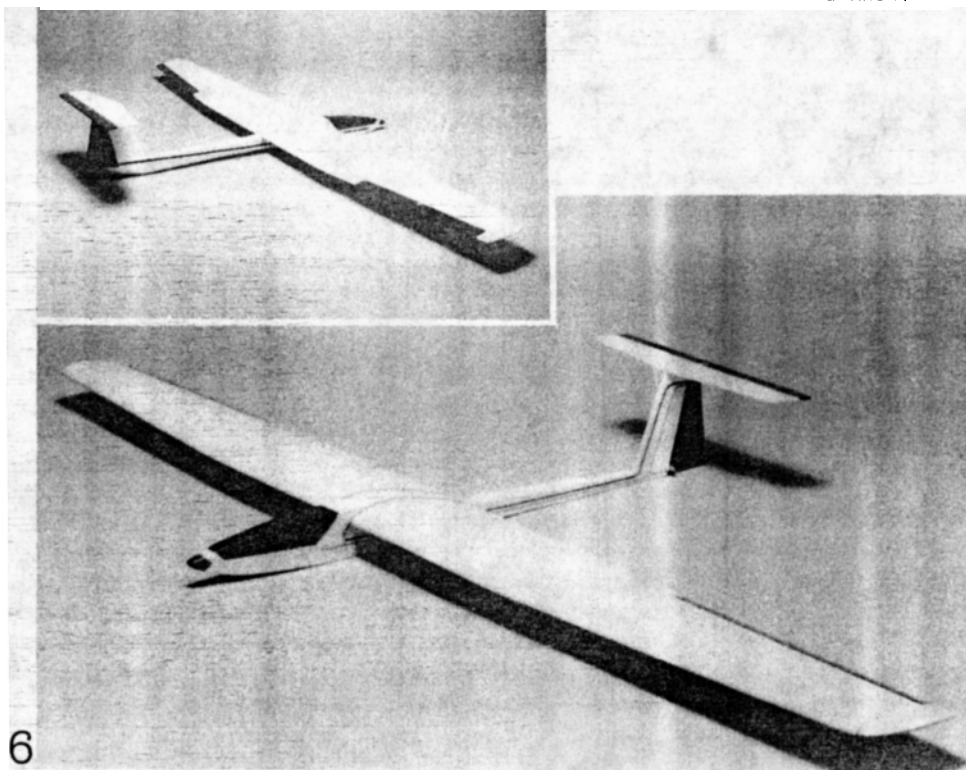


WING:
 MODIFIED EPLER 205 AIRFOIL, WITH 2%
 CAMBER; SPAN - 115"; AREA - 900 SQ. IN.
 ASPECT RATIO - 14.8:1
 STAB:
 SPAN - 20"; AREA - 80 SQ. IN.; ASPECT
 RATIO - 5:1; 8.8% OF WING AREA
 FUSE:
 OVERALL LENGTH - 52"; NOSE CONE - MACA
 63-009; FIN HEIGHT - 9.25"

MASS:
 UNBALLASTED - 85 OZ.; BALLASTED - 129 OZ.;
 BALLASTED SURFACE LOADING - 18 OZ./SQ.FT.
 FUNCTIONS: ALL-FLYING STABILIZER; ALERONS WITH
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 COUPLED WITH ALERONS, AND SPOILERS.
 ALL CHORD DIMENSIONS
 ARE FOAM BLANK SIZES

HAVE YOU SEEN...HAVE YOU HEARD?.....NEW PRODUCT ANNOUNCEMENT

I REALLY DON'T KNOW MUCH ABOUT THIS ONE YET, BUT HERE ARE A COUPLE OF PHOTOS. IT'S THE NEW BOBCAT FROM BOB MARTIN RC MODELS, 20134 STATE ROAD, CERRITOS, CA 90701. (213) 865-0444. YOU MAY RECALL THE PUSSYCAT THAT APPEARED ON THE COVER OF RCSD A FEW MONTHS AGO. THAT HAS BEEN A VERY FINE SUCCESS IN THE TWO-METER CLASS, ACCORDING TO BOB MARTIN. NOW, HE'S BRINGING OUT A NEW ONE IN WHAT I'D GUESS IS THE MODIFIED STANDARD CLASS. IT'S A FLAT-WING, AILERON SHIP WITH ONE OF THE MODERN AIRFOILS, AND SPORTS A T TAIL. CONTROLS APPEAR TO BE RUDDER, AILERON AND ELEVATOR. IT DOES NOT LOOK AS IF FLAPS HAVE BEEN INCLUDED, BUT THEY MAY BE. IF NOT, YOU PROBABLY COULD ADD THEM. THE FUSELAGE HAS A NICE SILHOUETTE, BUT IS PROBABLY EASY TO BUILD, BECAUSE THE SIDES ARE FLAT. THE SHIP IS A REAL 'LOOKER' AND HAS A WING WHOSE CENTER SECTION IS PLANK/PARALLEL, WHILE THE TIPS ARE SLIGHTLY TAPERED ON BOTH LEADING AND TRAILING EDGES. THIS IS PRETTY CLOSE TO THE IDEAL PLANFORM FOR PRODUCING ELLIPTICAL LIFT DISTRIBUTION IN A WING THAT CAN BE MASS PRODUCED. MY GUESS IS THAT THE SHIP WILL BE A VERY FINE PERFORMER...PERHAPS NOT F3B CLASS COMPETITION...BUT CERTAINLY A CAMPAIGNER IN EVERYTHING BUT AN OUT-AND-OUT DOG...ER..'CAT' FIGHT. SIMPLICITY, GRACE, AND CLEAN LINES CHARACTERIZE THIS DESIGN. IF THE PRODUCTION VERSION IS AS NICE AS THE PROTOTYPE - AND IF IT FLIES AS GOOD AS IT LOOKS - BOB MARTIN WILL NO DOUBT SELL A BIG BUNCH OF THEM. I'VE NO IDEA YET WHAT THE PRICE WILL BE. IF YOU NEED TO KNOW MORE, CALL BOB MARTIN....AND THEN LET ME KNOW.



WORKBENCH KIT BY WORKSHOP CONCEPTS.....PRODUCT REVIEW BY JIM GRAY

FOR THE PAST SEVERAL MONTHS YOU'VE PROBABLY NOTICED THE FULL-PAGE AD IN THE FRONT OF RCSD, SHOWING THE WORKBENCH BY WORKSHOP CONCEPTS. LAST WEEK MY PRODUCT REVIEW BENCH ARRIVED, AND TODAY MY WIFE AND I PUT IT TOGETHER. HERE'S WHAT WE FOUND, AND HOW IT WENT.

THE UPS-SHIPPED BOX IS ABOUT 48" LONG, 24" WIDE AND 6" THICK...AND IT IS HEAVY - ENOUGH SO THAT YOU MAY WANT A HAND GETTING IT INSIDE YOUR HOUSE. A COUPLE OF ZIPS WITH THE X-ACTO KNIFE ALONG THE CENTER TAPE AND EDGE TAPES ALLOWS YOU TO OPEN THE FLAPS AND PEER INSIDE, WHERE YOU'LL SEE THOUSANDS OF THOSE LIGHT, WHITE HEMISPHERES USED NOWADAYS TO PROTECT THE CONTENTS OF A BOX FROM RATTLING AROUND. PAWING THROUGH THESE AND SHOVELING THEM OUT INTO ANOTHER BOX, YOU'LL BEGIN TO SEE SOME INDIVIDUALLY WRAPPED AND PROTECTED PACKAGES. THREE LONG PACKAGES CAREFULLY WRAPPED AND TAPED IN HEAVY BROWN PAPER CONTAIN THE BRUSHED-ALUMINUM CHANNEL MEMBERS THAT MAKE UP THE FRAME OF YOUR WORKBENCH. THERE ARE 2 - 29" LEGS 2 - 41" LEGS, 2 - 43" FLANGED CROSSRAILS, 1 - 42½" FLANGED CROSSRAIL, AND 4 - 20½" FLANGED CROSSRAILS. YOU'LL ALSO FIND A PLASTIC BAG WITH THE FOLLOWING CONTENTS: 10 SPRING CLIPS TAPED TOGETHER, 1 - 5/32" ALLEN WRENCH, & 4 VELCRO BUTTON SETS. THERE IS A LARGE GREY ENVELOPE CONTAINING THE INSTRUCTIONS AND EXPLODED ISOMETRIC VIEW OF THE BENCH COMPONENTS, WITH A PHOTO OF THE ASSEMBLED BENCH, PLUS A COUPLE OF ILLUSTRATIONS THAT SHOW CLOSE-UP DETAILS OF THE INTERLOCKING FASTENER SYSTEM. NEXT, YOU WILL DISCOVER SOME PLASTIC-WRAPPED ITEMS WHICH INCLUDE 4 PACKAGES OF TOOL HOLDERS OF THE KIND THAT FIT INTO PEG BOARD HOLES, 5 HANDY BINS WITH A BRACKET MADE TO BE SUPPORTED ON THE PEG BOARD, AND LAST, BUT NOT LEAST, A NEAT BRACKET/HOLDER/DISPENSER FOR FILM COVERING ROLLS THAT CLIPS TO THE PEGBOARD.

WITH ALL THAT PEG BOARD HARDWARE AROUND, YOU WILL WONDER WHERE THE PEG BOARD ITSELF IS, AND THAT'S WHAT YOU COME UPON NEXT AS YOU BURROW YOUR WAY TO THE BOTTOM OF THE BOX: ONE PEG BOARD RISER AND TWO PEG BOARD SIDE PANELS. BENEATH THESE IS A PIECE OF 44" x 24" HOMOSOTE BOARD 1/2" THICK, AND BENEATH THAT A PARTICLE BOARD THAT IS CUT TO FIT EXACTLY INTO THE WORKBENCH FRAME, AND ALSO 1/2" THICK. OKAY, THAT'S IT - NOTHING LEFT IN THE BOX, SO LET'S OPEN UP THESE PACKAGES AND LAY OUT THE FRAMEWORK MEMBERS...MAKING SURE THAT THEY LOOK LIKE THE PIECES SHOWN ON THE INSTRUCTION SHEET. NOW HERE IS WHERE YOU WILL FIND ONE OF THE CLEVEREST AND BEST FEATURES OF ANY KIT ANYWHERE: EACH FRAME MEMBER IS PROVIDED WITH A RECESSED, EXPANDABLE EXPANSION FITTING DRIVEN BY ALLEN SCREWS. THESE EXPANSION FITTINGS ARE INITIALLY TIGHT AS SHIPPED FROM THE FACTORY, BUT ALL YOU HAVE TO DO IS FIT THE ALLEN WRENCH INTO THE ALLEN SCREW HEADS AND LOOSEN THEM WITH A FEW COUNTERCLOCKWISE TURNS. YOU DON'T HAVE TO WORRY ABOUT THEM FALLING OUT, OR WORRY ABOUT THE SCREWS COMING LOOSE, AS THEY ARE ALL CAPTURED INSIDE THE FRAME ITSELF.

TO ASSEMBLE THE FRAME, WE FOLLOWED INSTRUCTIONS AND SET UP THE TWO 41" LEGS ON THE FLOOR ABOUT 44" APART AND PARALLEL TO EACH OTHER. THE NEXT STEP WAS TO PLACE THE EXPANSION FITTINGS AT EACH END OF THE 43" FLANGED CROSSRAIL LOOSELY INTO ONE SIDE CHANNEL OF EACH 41" LEG, SLIDING IT UP OR DOWN UNTIL IT IS EXACTLY 29" FROM THE END OF EACH LEG. NOW, YOU MERELY TIGHTEN THE ALLEN SCREW SNUGLY, OR FINGER-TIGHT, TO LOCK THE EXPANSION FITTING INTO THE LEG CHANNEL. THAT'S IT! THAT'S ALL YOU HAVE TO DO. NO MESSY DRILLING, NO FUSSING WITH SCREWS AND NUTS, AND NO BOTHER. NOT EVEN MUCH MEASURING TO DO - EVERYTHING IS MEASURED AND PRE-CUT AS

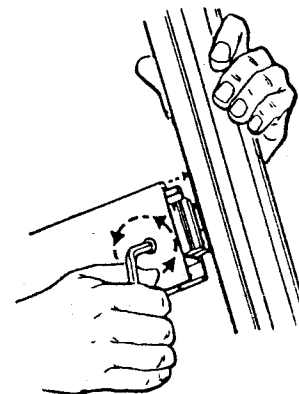
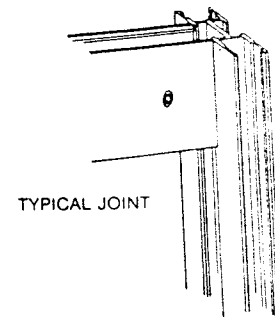
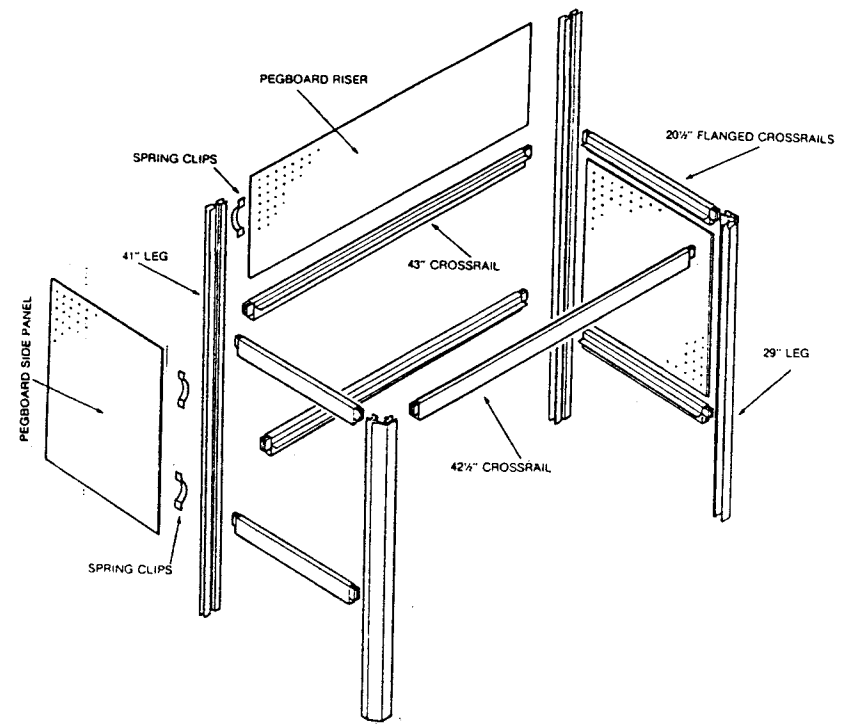
ACCURATELY AS ONE COULD HOPE FOR, AND BETTER THAN ONE HAS COME TO EXPECT FROM MANY SUPPLIERS OF SO-CALLED 'KITS'. THE BOTTOM CROSSRAIL GOES INTO PLACE THE SAME WAY AS THE TOP ONE. THEN, YOU PUT THE 20 1/2" CROSSRAILS INTO PLACE, LOCKING THEM SNUGLY, BUT NOT TOO TIGHTLY JUST YET. THE 42 1/2" CROSSRAIL FITS ONTO THE FRONT OF THE SHORTER ONES, FORMING THE FRONT EDGE OF YOUR WORKBENCH. NOW, YOU CAN SET IT UP ON ITS LEGS AND FIT THE PARTICLE BOARD TOP WHICH SITS ON THE FLANGES FORMED BY THE FRONT, BACK AND SIDE RAILS. IT WAS AT THIS POINT THAT I HAD TO JIGGLE AND JOGGLE THE RAILS A BIT, LOOSENING THEM JUST ENOUGH TO MAKE ROOM TO FIT THE TOP IN PLACE SNUGLY...AND IT IS A SNUG FIT, TOO! FINALLY, WITH ALL IN PLACE, YOU DO THE FINAL TIGHTENING OF ALL ALLEN SCREWS TO LOCK EVERYTHING TOGETHER. THE VELCRO 'BUTTONS' ARE TO ENABLE YOU TO PLACE THE HOMOSOTE BOARD ON TOP OF THE PARTICLE BOARD (BECAUSE YOU CAN STICK PINS INTO THE HOMOSOTE) AND HOLD IT IN PLACE WITHOUT SLIDING. THUS, YOU CAN REMOVE THE HOMOSOTE COVER WHEN YOU WISH, BUT I FOUND THAT THE VELCRO REALLY WASN'T NEEDED.

FOR FINAL ASSEMBLY YOU SLIDE THE PEG BOARD RISER INTO THE CHANNELS OF THE TWO BACK LEGS WHICH PROJECT ABOVE THE WORKBENCH TOP. THEN, YOU PUT IN THE TOOL HOLDERS, THE PARTS BINS, ETC. THE INSTRUCTIONS TELL YOU TO SLIDE THE PEG BOARD SIDES INTO THE LEG CHANNELS, BUT YOU FIND YOU CAN'T DO IT BECAUSE THE CROSSRAILS PREVENT IT. WHAT TO DO? EASY: JUST TURN YOUR WORKBENCH ONTO ITS BACK, AND LOOSEN THE BOTTOM CROSSRAILS, SLIDING THEM OUT OF THE LEG CHANNELS. THEN SLIDE THE PEG BOARD UP INTO THE CHANNELS, REPLACE THE CROSSRAILS, AND TIGHTEN EVERYTHING IN PLACE AGAIN. IN MY OWN BENCH, I FOUND THAT THE BOTTOM CROSSRAILS SHOULD BE PLACED WITH THE FLANGE INSIDE AND DOWN, LEAVING AN UPWARDLY FACING CHANNEL TO SEAT THE BOTTOM OF THE PEG BOARD IN, WHICH NOW HOLDS THE PEG BOARD ON ALL FOUR SIDES. AS A LAST STEP, YOU TAKE THE SPRING CLIPS AND WEDGE THEM BETWEEN THE PEG BOARD AND THE SIDES OF THE ALUMINUM CHANNEL, INSURING THAT THEY WON'T RATTLE AROUND LOOSELY.

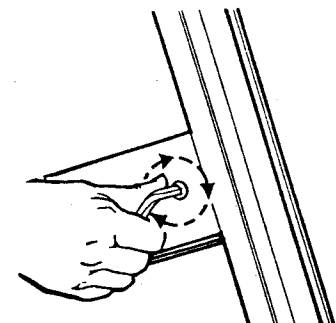
YOUR FINISHED WORK BENCH IS VERY, VERY STURDY, YET LIGHT ENOUGH TO MOVE READILY. YOUR TOOLS, SMALL PARTS, COVERING MATERIAL, AND THE LIKE ARE WITHIN EASY REACH AT ALL TIMES. IF YOU NEED ILLUMINATION, YOU CAN USE A LAMP WITH A BRACKET ON IT, OR A CLAMP, TO ATTACH TO THE TOP OF ONE OF THE BACK LEGS. WORKSHOP CONCEPTS CAN ALSO FURNISH WORKBENCH EXTENSIONS OR EXTRA SHELF SPACE TO ACCOMMODATE POWER TOOLS. YOU CAN ALSO GET PLUG MOLDING TO FIT ON YOUR BENCH FOR PLUGGING IN THE POWER TOOLS. PERHAPS BEST OF ALL, THIS BENCH CAN BE DISASSEMBLED OR 'KNOCKED DOWN' AGAIN FOR STORAGE OR SHIPPING IN A VERY FEW MINUTES. ASSEMBLY TIME, DOING A CAREFUL JOB, WILL TAKE LESS THAN AN HOUR. DISASSEMBLY OUGHT TO TAKE LESS THAN FIVE MINUTES.

I CAN BUILD ONE WING PANEL OF A SAILPLANE ON THE BENCH AS IT IS. IF I REALLY WANTED TO HAVE A MONSTER SAILPLANE WING ON THE BENCH, I'D HAVE TO MAKE ARRANGEMENTS FOR AN END EXTENSION...OR (CHUCKLE) BUY TWO BENCHES AND PLACE THEM END TO END. WHY NOT? YOU CAN'T BUY BETTER FURNITURE THAN THIS FOR THE PURPOSE OR FOR THE MONEY...ESPECIALLY WHEN YOU CONSIDER CONVENIENCE. ANY FUSELAGE OR TAIL GROUP YOU ARE LIKELY TO USE - EVER - WILL EASILY FIT.

HOW DO I LIKE IT? WELL, THERE'S A SMALL PROBLEM: MY WIFE DECIDED SHE WANTED A SEWING TABLE AND BENCH WHERE SHE COULD DO ALL OF HER PATTERN CUTTING, SCISSORS AND PIN STORAGE, SEWING MACHINE PLACEMENT, ETC. GUESS WHO HAS THE BENCH NOW? SO, GUESS I'LL JUST HAFTA GET ANOTHER ONE - FOR ME!



TO LOOSEN EXPANSION FASTENER
FIGURE 1



TO TIGHTEN EXPANSION FASTENER
FIGURE 2

HINTS & 'SOAR'CES: FILLERS AND FILLETS FOR FUN AND FANCY FLIERS

RON RAYMOND, BLOOMINGTON, INDIANA TELLS ME ABOUT A PRODUCT THAT APPEARS TO BE ONE OF THE BEST FILLERS AND FILLET-MAKERS AVAILABLE. IT IS CHEAP, PURE WHITE IN COLOR, HAS A PLEASANT ODOR AND IS VERY EASILY MOLDED WITH THE FINGERS OR SIMPLE TOOLS. IT FILLS CRACKS, GAPS, DINGS AND HOLES IN FOAM, Balsa, AND OTHER MATERIALS...AND IT IS WATER SOLUBLE. IT CAN BE THINNED WITH WATER WHEN IT BECOMES TOO THICK, AND IT CAN BE SMOOTHED WITH WATER ON A BRUSH TO MAKE A NICE, CLEAN FILLET. IT IS CALLED ONE TIME™ VINYL SPACKLING COMPOUND, AND IS AVAILABLE IN MOST LARGE HARDWARE STORES. THE COMPANY LOGO IS A BLUE AND WHITE CLOCK.

INCIDENTALLY, RON HAS COME UP WITH SOMETHING THAT WE'RE ALL GOING TO LIKE, AND I CAN'T WAIT TO TELL YOU ABOUT IT, BUT WE'RE NOT QUITE READY. THE PHOTOS WILL BE MADE SOON, AND THEN I WILL SHOW THEM ALONG WITH SOME DESCRIPTION OF WHAT WE'RE DOING AND HOW IT WORKS OUT. SO FAR, WE'VE MADE SOME FLIGHT TESTS WHICH WERE VERY SATISFACTORY. NOW, WE HAVE TO ADD THE RADIO SYSTEM FOR ANOTHER SERIES OF FLIGHTS TO PROVE IT OUT. BELIEVE ME, IT'S GOING TO BE MORE FUN THAN ANYONE HAS HAD IN A LONG TIME, AND IT'S GOING TO BE INEXPENSIVE, SIMPLE AND EASY TO DO. THE PROTOTYPES WERE FLOWN THIS MORNING WITH EXCELLENT RESULTS. WANT A HINT? OKAY: SLOPE? YES! SCALE? YES! FOAM? YES! THAT'S ALL I'LL TELL YOU NOW, BUT I'LL BET THAT IT'S SOMETHING YOU SELDOM IF EVER THOUGHT OF...AND WE'LL START OUR OWN REVOLUTION WITH IT (OR THEM) AS THE CASE MAY BE, AND YOU'LL BE THE FIRST TO KNOW. OH YES, ALMOST FORGOT: THERMAL, TOO!

SUPER SPOILERSNew Product Announcement...JIM GRAY

THIS IS A NEW PRODUCT, AND ONE OF THE BEST I'VE SEEN. THESE ARE REALLY SCHEMPP-HIRTH SCISSOR-TYPE DIVE BRAKES (YOU KNOW, THE PARALLEL RULER KIND) THAT SLIDE UP OUT OF RECESSES IN THE WING TO PROVIDE REAL LIFT-KILLING AND DRAG-PRODUCING BRAKES. THE NICE THING ABOUT THEM IS THAT THEY CAN BE 'MODULATED' FOR AS LITTLE OR AS MUCH EFFECT AS YOU NEED. THEY ARE MADE FROM ALUMINUM, WORK VERY EASILY, AND ARE PRACTICALLY INDESTRUCTIBLE. OH SURE, YOU CAN BEAT ON 'EM AND WRECK 'EM IF YOU TRY HARD ENOUGH...BUT IN AVERAGE USE THEY SHOULD LAST THE LIFETIME OF MANY MODELS. SOME OF THE FEATURES INCLUDE: ADJUSTABLE ELASTIC STOP NUTS SO THAT FRICTION CAN BE ADJUSTED; JOINTS THAT CAN BE LUBRICATED WITH SPRAY SILICONE; AND VERSATILITY WHEREBY YOU CAN SET UP AND PLAN YOUR INSTALLATION BEFORE THE SPOILERS ARE PUT IN PLACE.

THE SPOILERS ARE PERFORATED TO MINIMIZE TURBULENCE AND BUFFETING, AND THEY ARE ONLY 3/4" DEEP IN THE CLOSED OR 'STORED' POSITION. THEY ARE 1/2" WIDE. IN THE FULLY OPEN POSITION, THEY WILL PROJECT ABOUT 1" ABOVE THE WING'S UPPER SURFACE; AND -OH YES, THEY ARE EXACTLY 15" LONG.

THEY OPERATE BY BOWDEN CABLE (GOLD-N-ROD AND BALL LINK) AND WOULD GIVE YOU ABOUT 15 SQUARE INCHES OF PROJECTED DRAG AREA, EACH. THE TOP OF EACH SPOILER HAS PROVISIONS FOR A STRIP OF Balsa TO BE GLUED ON (THE ALUMINUM IS ALODINED GOLD FINISH) SO THAT THEY CAN BE SANDED TO EXACTLY MATCH THE WING SURFACE CONTOURS. WEIGHT IS ONLY 1.25 OZ PER PAIR!

RON CARTER, THE OWNER/MANUFACTURER OF SUPER SPOILERS GOES BY THE BUSINESS NAME OF RC DESIGN AND DEVELOPMENT, AND THE ADDRESS IS 821 STUBBS AVENUE, PROVO, UTAH 84601. AT ONLY \$15 PER PAIR, THERE'S NO WAY YOU CAN GO WRONG. IN FACT, CONSIDERING THEIR UTILITY, DESIGN AND CONSTRUCTION, I'D HAVE TO SAY THEY ARE THE BEST BUY ON THE MARKET. IN CASE YOU'D LIKE TO CALL, RON'S TELEPHONE IS 801-375-7805. TELL HIM RCSD IS WHERE YOU HEARD ABOUT HIS PRODUCTS.

AEROSPACE COMPOSITE PRODUCTS

CARBON FIBER - INTRODUCTORY OFFER FOR RCSD READERS

(Prices quoted are 10% off ACP's low list price!)

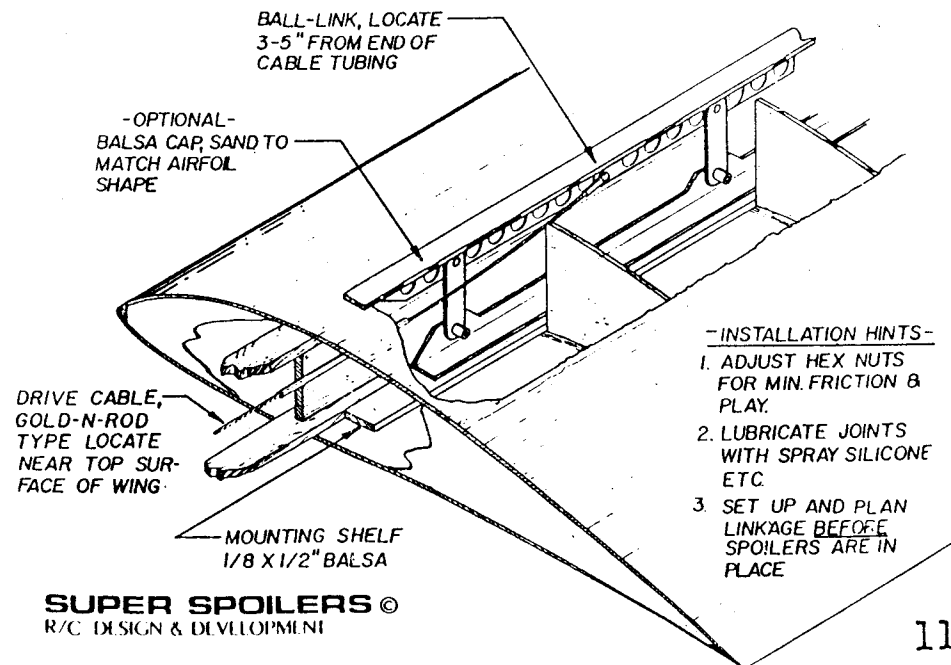
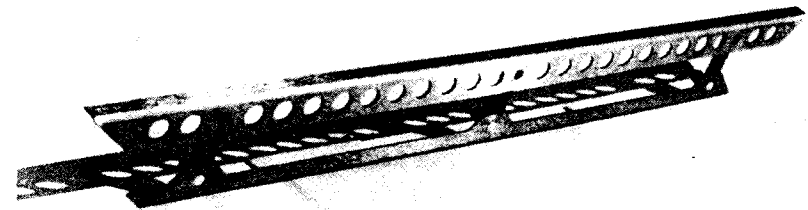
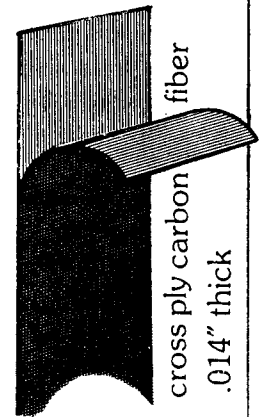
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One-ply, 4" x 48".....	\$14.40
Two-ply, 2" x 48".....	\$14.40
Two-ply, 4" x 48".....	\$27.00
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Unidirectional Carbon Fiber Tape: 1" x 12'...	\$4.00
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Fiberglass Cloth: 1/2 Oz./Sq.Yd : 38"x15'..	\$14.40
Fiberglass Cloth: 1/2 Oz./Sq.Yd : 38"x30'..	\$27.00

For shipping and handling, please add \$2.50.
For orders under \$8.00, add \$1.50 for postage.
Send check or Money Order. For price sheet, send SASE to: AEROSPACE COMPOSITE PRODUCTS, DEPT. S, 28 CROSSWOOD ROAD, FARMINGTON, CT 06032



-INSTALLATION HINTS-

1. ADJUST HEX NUTS FOR MIN. FRICTION & PLAY.
2. LUBRICATE JOINTS WITH SPRAY SILICONE ETC.
3. SET UP AND PLAN LINKAGE BEFORE SPOILERS ARE IN PLACE.

SUPER SPOILERS ©
R/C DESIGN & DEVELOPMENT

How Big Should it Be?.....E.G. CURRINGTON*

I AM PLANNING TO BUILD A CROSS-COUNTRY SAILPLANE OF MY OWN DESIGN, AND ASKED MYSELF THE QUESTION: "SHOULD IT BE THE LARGEST POSSIBLE, OR SMALLER AND AT A HIGHER WING LOADING?" THE PROBLEM WAS FED INTO MY TI-66 PROGRAM, ASSUMING:

EPPLER 193 PROFILE (USING ALTHAUS WORK).

AR=12

STAB AREA/WING AREA =0.12

TAIL ARM=3.3 MEAN CHORDS

FUSELAGE LENGTH=5.5 MEAN CHORDS

CONSTANT FUSELAGE CROSS SECTION

CONSTANT WING TAPER RATIO, $\lambda = 0.7$

CONSTANT SPAN EFFICIENCY, $e = 0.9$

$V \geq V_{MIN DRAG}$

THIS LATTER IS A HOBBY-HORSE OF MINE. I BELIEVE THAT FLIGHT AT SPEEDS BELOW THE SPEED AT WHICH THE TOTAL AIRCRAFT DRAG IS A MINIMUM SHOULD NOT BE ATTEMPTED...THE AIRPLANE IS NOT SPEED STABLE, AND CAN ACCELERATE OR DECELERATE AT WILL.

THE RESULTS ARE SHOWN IN FIG. 1, GIVING THE EXPECTED RESULT THAT:

- + THE SINK SPEED IMPROVES WITH SIZE AND DETERIORATES WITH INCREASED WING LOADING;
- + THE L/D (AT THE SAME FLIGHT SPEED AS ABOVE) IMPROVES WITH BOTH SIZE AND WING LOADING.

FROM THIS, IT MIGHT BE ASSUMED THAT THERE COULD BE A TRADE-OFF, AND IT MIGHT BE PREFERABLE TO TRADE OFF SOME SINK SPEED FOR IMPROVED GLIDE RATIO (L/D).

THERE IS, HOWEVER, A FLY IN THE OINTMENT: THE FAI HAVE IMPOSED LIMITS ON MAX WEIGHT (5 KG = 176 Oz.) AND MAX AREA (1.5 M² = 2325 IN.² = 2076 IN.² WING WITH A 12% STAB). THESE LIMITS ARE SUPERIMPOSED ON FIG. 1, AND SHOW AN ALMOST CONSTANT L/D WITH SIZE. FIG. 2 SHOWS THE PERFORMANCE AT MAX L/D. THE WEIGHT LIMIT HAS THE SAME EFFECT.

THIS SHOWS THAT ANY POTENTIAL IMPROVEMENT IN L/D BY INCREASE IN WING LOADING CANNOT BE ACHIEVED, AND THAT THE LOSS IN SINK SPEED OSTENSIBLY NULLIFIES THE SMALLER AIRPLANE.

I DISCUSSED THIS SUBJECT WITH BILL PETTIGREW (A FELLOW CLUB MEMBER) AND BASED ON HIS EXPERIENCE IN THE GREAT RACE, AND THE ONTARIO DASH FOR CASH, HE FELT THAT THE LARGER AIRPLANE WOULD GIVE BETTER RESULTS - FLYING IN UP TO MODERATE WINDS. IN HIGH WINDS (25 MPH), THE SMALLER, MORE HEAVILY-LOADED AIRPLANE MIGHT BE BETTER AS IT WOULD BE FLYING FASTER (THE 18 oz./SQ.FT. SAILPLANE WILL FLY 20% FASTER THAN THE 12 oz./SQ.FT. ONE). THIS IS TRUE, BUT:

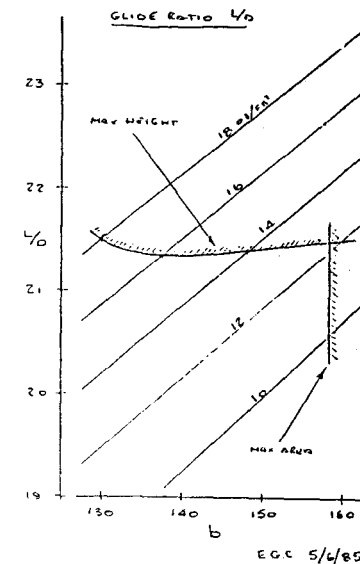
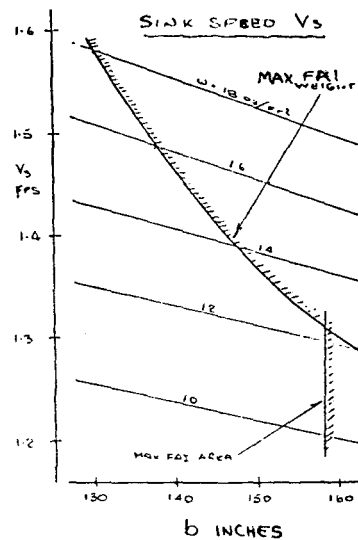
- + THE LARGER SAILPLANE IS MORE VISIBLE (THE 160" SPAN ONE A/C HAS 50% MORE WING AREA THAN THE 130" SPAN A/C);
- + THE LARGER SAILPLANE SHOULD BE ABLE TO BE LAUNCHED HIGHER - IT IS MORE ABLE TO CARRY THE WEIGHT AND DRAG OF THE LINE;
- + THE LARGER SAILPLANE WILL HAVE A LOWER LANDING SPEED; AND THIS IS IMPORTANT IF YOU HAVE TO LAND 'OFF COURSE' AND A PROBABLY 1/4-MILE AWAY.

FOR ME, THE ANSWER IS "BIGGEST IS BESTEST"

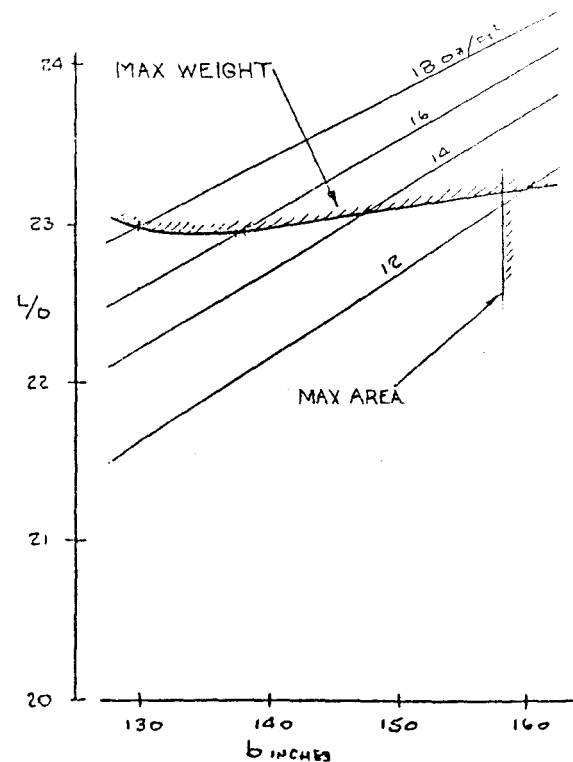
* 12 CARIBOU CRESCENT, KIRKLAND, QUEBEC, CANADA H9J 2H8. IF YOU WISH TO CALL E.G., YOU MIGHT FIND HIM AT HOME: (514) 697-8445.

XC SAILPLANE PERFORMANCE

FIG 1 - FLIGHT AT $V_{MIN DRAG}$



XC SAILPLANE PERFORMANCE FIG 2 - MAX L/D



UPDATE ON MY B.L.P. CONSTRUCTION.....BOB RONDEAU

Most of us will remember Bob's pod-and-boom original design that graced our September cover. Here are some more details about it. I think you'll be as impressed as I was with the original thinking.

MOST OF MY KIT BUILDING SEEMS TO BE DONE IN A HURRY. I START LATE IN THE WINTER AND THERE IS A PUSH AT THE END TO GET THE THING READY FOR THE CONTEST SEASON. B.L.P. IS AN ATTEMPT TO OVERCOME THIS PROBLEM BY STARTING EARLY AND FOLLOWING A DEFINITE SCHEDULE SO THAT NOTHING IS RUSHED AND SHORTCUTS DON'T HAVE TO BE TAKEN.

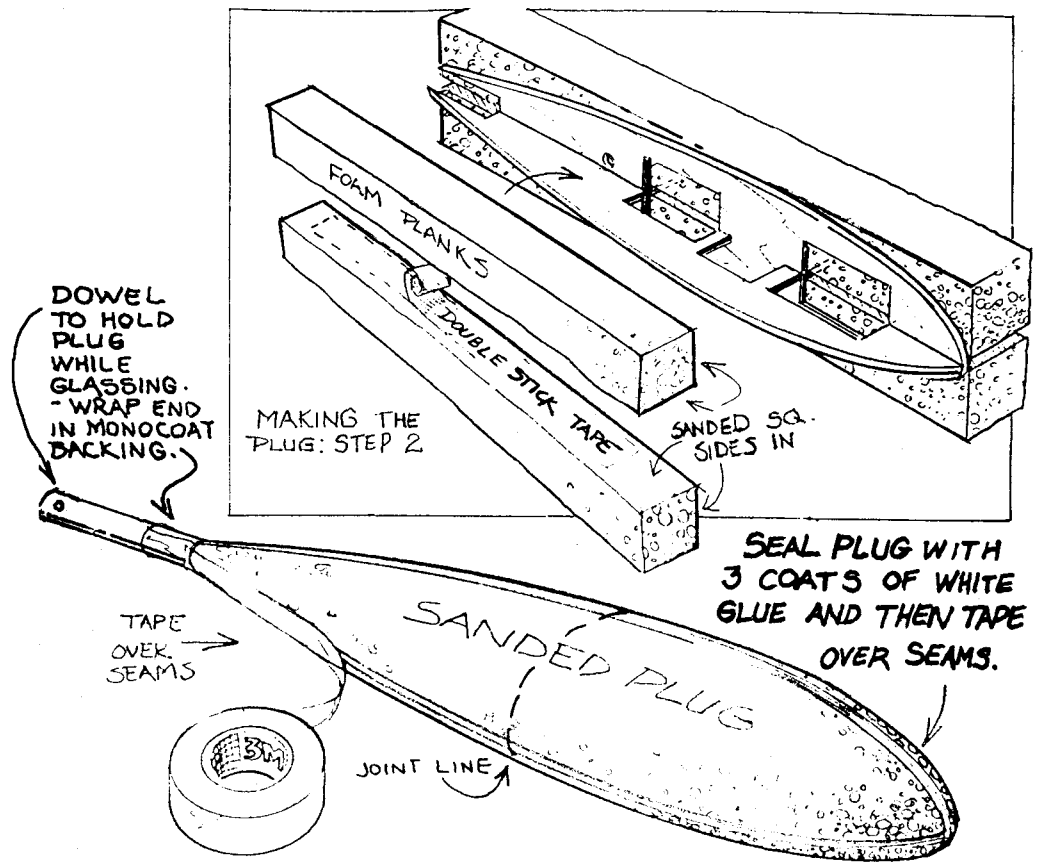
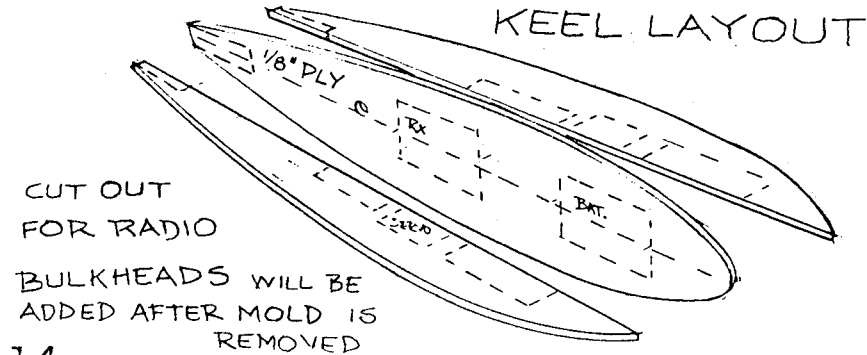
AT THIS POINT, I HAVE THE POD FORMED AS A TWO-PIECE MOLDING. IF YOU REMEMBER, I WAS USING THE THE FOAM MALE MOLD METHOD TO DO THIS, AND IT WORKED ABOUT AS I FIGURED. GLASSING WAS DONE IN TWO SECTIONS, MAIN BODY AND NOSE CONE - WITH A REMOVABLE JOINT AT MID POINT.

ONE PROBLEM I ENCOUNTERED WAS IN BUILDING THE KEEL STRUCTURE INTO THE MOLD PLUG. ALTHOUGH THIS HELPED TO KEEP THE POD STRAIGHT AND TRUE, IT MADE REMOVAL OF THE PLUG MORE DIFFICULT. AFTER TRYING TO SEPARATE THE POD AT MID JOINT (UNSUCCESSFULLY) I TOOK IT OUT INTO THE YARD AND POURED GASOLINE INTO IT TO MELT THE FOAM. THIS ALLOWED EXTRA FLEXING AT THE JOINT, AND I WAS ABLE TO FREE THE POD FROM THE KEEL. THIS ALSO LEFT ME WITH A 2-PIECE POD THAT FIT NICELY TOGETHER OVER THE PLY KEEL... BUT IT ALSO LEFT ME WITH A SLIMY, STICKY COATING (FOAM?) INSIDE THE POD AND ON THE KEEL. A RUBBER CEMENT PICKUP DIDN'T WORK; FINALLY, I GOT A SMALL BALL OF GOO STARTED, AND ROLLED AND BLOTTED IT UP.

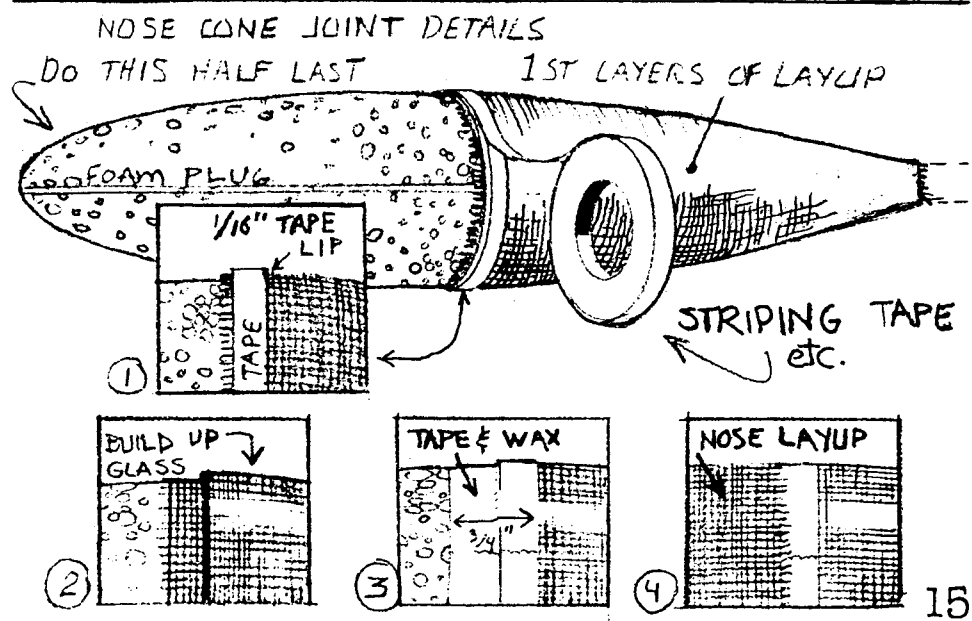
THE POD IS VERY LIGHT WITH 2 LAYERS OF 1.8-OZ. KEVLAR COVERED WITH 2 LAYERS OF 2-OZ. GLASS, AND FINISHED WITH 1 LAYER OF 0.6-OZ. GLASS. THERE IS SOME FLEX WITH THIS LAYUP, BUT THE HORIZONTAL AND VERTICAL KEEL KEEPS EVERYTHING FIRM. THE KEEL IS FURTHER STIFFENED WITH CARBON FIBER.

THE BOOM WAS NOTCHED INTO THE KEEL ABOUT 1 1/2" AND A KEVLAR-CARBON-GLASS POCKET WAS MOLDED AROUND IT TO HOLD ALIGNMENT WHILE STILL ALLOWING REMOVAL OF THE BOOM. WITH THE BOOM IN PLACE, I SLID THE REAR HALF OF THE POD OVER THE BOOM AND KEEL FOR A REALLY SNUG FIT. EVERYTHING NOW HAS A MOLDED-TOGETHER FIT, YET COMES APART EASILY - KEEPING ALL MY OPTIONS OPEN.

WITH THE EPOXY LEFT-OVERS, I EXPERIMENTED WITH LAMINATIONS TO FORM A T-TAIL FITTING. I WANTED SOMETHING FIRM AND LIGHT THAT WOULD FIT INSIDE THE FIN. LAMINATING 6 LAYERS OF KEVLAR CLOTH (1.8 OZ.) WITH ALTERNATING LAYERS OF CARBON FIBER TOW BETWEEN 2 SHEETS OF PLATE GLASS, I CAME UP WITH A SMOOTH, STRONG 1/16" SHEET MATERIAL WITH WHICH TO MAKE A PIVOTING TONGUE ARRANGEMENT WHICH I HOPE WILL DISTRIBUTE THE TAIL LOADS INTO THE BOOM. MY PLAN IS TO MOLD A HINGE IN PLACE AS AN INTEGRAL PART OF THE FIN...MORE ON THIS NEXT TIME.



FIBERGLASS LAY-UP OVER MALE PLUG



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NEW - FACTOR - COMING SOON, Two-meter or 83" span DASSL-LIKE SAILPLANE (PLANS SHOW BOTH VERSIONS) WITH EPPLER 193 AIRFOIL, EPOXY/GLASS FUSELAGE FOAM WING CORES, AND PLANS (NO WOOD, NO HARDWARE INCLUDED). WRITE OR CALL FOR PRICE.

"AERO"SHAFTS - FIBERGLASS ARROW SHAFT STOCK - IDEAL FOR TAIL BOOMS, HOLLOW SPARS, WEIGHT CONTAINERS, AND MUCH MORE. YELLOW COLOR, 32" LONG, 0.261" DIAMETER, WEIGHT EACH 15 GRAMS. PRICE \$1.95 EACH. ADD \$2.50 FOR SHIPPING AND HANDLING. IT WILL SAVE YOU MONEY TO BUY A DOZEN.



SUPER SPOILERS BY R/C DESIGN & DEVELOPMENT, (SEE REVIEW THIS ISSUE) 15 INCHES LONG, 3/4" HIGH (CLOSED), 1.25 OUNCES. PRICE \$15.00 PER PAIR. PLEASE ADD \$2.00 FOR SHIPPING AND HANDLING.

FIBERGLASS CLOTH - 1/2 oz. - 38" WIDTH X 36" LENGTH...\$3.95. IF YOU DESIRE, JERRY WILL CUT THEM TO ANY CUSTOM LENGTH WITHIN REASON @ ONLY \$3.95 PER YARD. PLEASE ADD SHIPPING AND HANDLING COST OF \$2.00 WITH EACH ORDER. BECAUSE OF WEIGHT, IT WILL SAVE YOU MONEY TO BUY A LOT.



CROSS-COUNTRY, ANYONE? TRY THE CONTESTANT - 58" FUSELAGE LENGTH, EPOXY/GLASS CONSTRUCTION; SHIPPED WITH PLANS, CANOPY AND CANOPY TRAY. IS INTENDED FOR EPPLER 205 AIRFOIL, BUT YOUR CHOICE MAY BE JUST AS GOOD. NO WINGS, NO CORES INCLUDED AT THIS PRICE OF \$50, PLEASE INCLUDE \$7.50 FOR SHIPPING AND HANDLING. THIS IS ONE OF OUR BEST-SELLING FUSELAGES, AND THE LAY-UP WORK IS AS GOOD AS ANY AVAILABLE TODAY. IF YOU WANT A XC MACHINE FOR NEXT SEASON, HERE'S YOUR FUSELAGE TO GIVE YOU A START.

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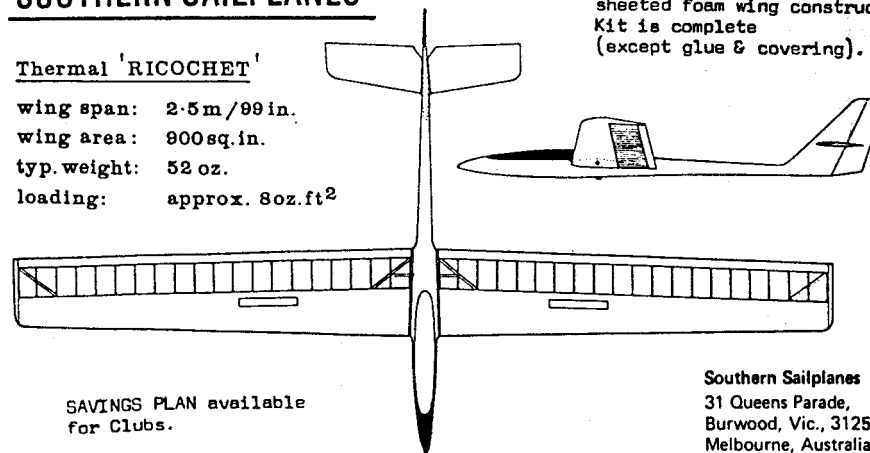
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wing span: 2.5m/99in.
wing area: 900sq.in.
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