

The "Flexi Flier" is a standard Rogallo, and is the safest and easiest to build and fly hang glider in use today. I recommend it to all beginning pilots no matter what their previous experience in aviation. But I also recommend it to the most experienced pilots because of its inherent strength and versatility. It is easy to maintain and easy to transport, and by far it can handle the greatest range of wind and terrain conditions known in our sport.

The Flexi Flier does not need aerodynamic controls. Pilot weight shifting - moving the center of gravity in relation to the wing's center of pressure - gives you fast and efficient positive control when flown correctly. I like it because of the simplicity. It feels more natural and birdlike to control flight and to express myself with my body.

I strongly urge you to adhere to the parts list specifications and to assembly instructions. Where there are approved variations, I give them. Otherwise, please realize that there is extensive engineering theory and practical experience behind this design.

The original Flexi Flier plans were copyrighted in 1971 and you now have a copy of the third complete edition of them. There is a well thought-out reason for every feature and revision. The 1971 & 1972 Flexi Fliers were built and engineered to the degree of the maturity of the sport, and the kite and sport have evolved together into a new realm of previously unthought of achievements in duration, height and distance. You are setting out to construct an aircraft and I have over-engineered the Flexi Flier to meet aircraft standards, including extra strong materials and redundancy. You might possibly get away with modifications, shortcuts, and cheaper or easier-to-find parts. On the other hand, you might not.

The Flexi Flier is one of the safest and most forgiving aircraft of any type in the world. But like all aircraft, it has its operating limitations. If used in the wrong wind conditions or over the wrong terrain, or if not maintained and assembled properly, you can quickly find yourself in trouble. Please use good judgment in flying and try to avoid the overconfidence that tempts every pilot with new wings. Think before you leap!

Many points touched in my introductory comments here will be covered further in the following pages. Good luck with your own Flexi Flier, and, hey, drop me a note about how it goes!

DICK EIPPER

## PREFACE

THESE PLANS HAVE BEEN DRAWN IN SEVERAL DIFFERENT STYLES: FREEHAND SKETCHING, FLAT BLUEPRINT DRAFT AND ISOMETRIC ILLUSTRATED PARTS BLOW-UP (I.P.B.). EACH STYLE SUITED TO THE PARTICULAR STORY BEING TOLD CONCERNING WHAT WE BELIEVE TO BE THE MOST COMPLETE HANG GLIDER CONSTRUCTION MANUAL IN PRINT TODAY.

MANY INSTANCES OF OTHER MANUFACTURERS USING OUR EARLIER FORMAT (& IN SOME CASES OUR COMPOSITIONS) ONLY SUBSTANTIATES OUR CLAIM OF HAVING COMPOSED THE CLEAREST & MOST THOROUGHLY ILLUSTRATED PLANS ANYONE HAS YET OFFERED.

WE HOPE THAT THIS NEWEST EDITION WILL RECEIVE AS WIDE & VARIED RECOGNITION AS ITS PREDECESSOR.

SPECIAL THANKS ARE EXTENDED TO BOB LOVEJOY, DAVE CRONK, BILL ALLEN, AND TO THE COMPLETE EIPPER-FORMANCE STAFF FOR THEIR VALUABLE CONTRIBUTIONS AND ABOVE ALL THEIR PATIENCE DURING THE PREPARATION OF THESE PLANS.

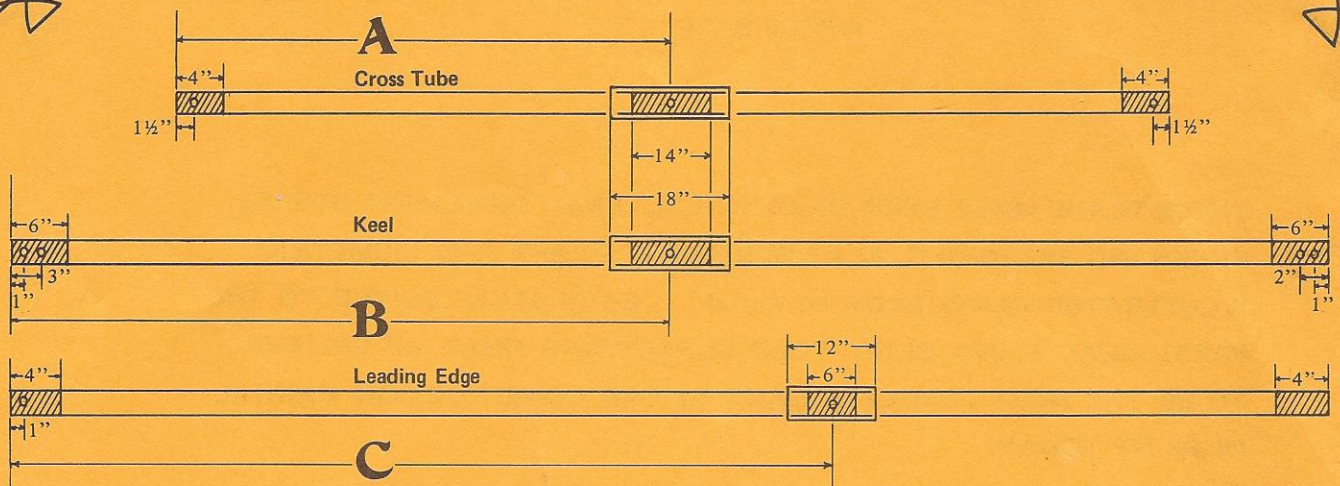
DICK EIPPER

&

DON MURRAY

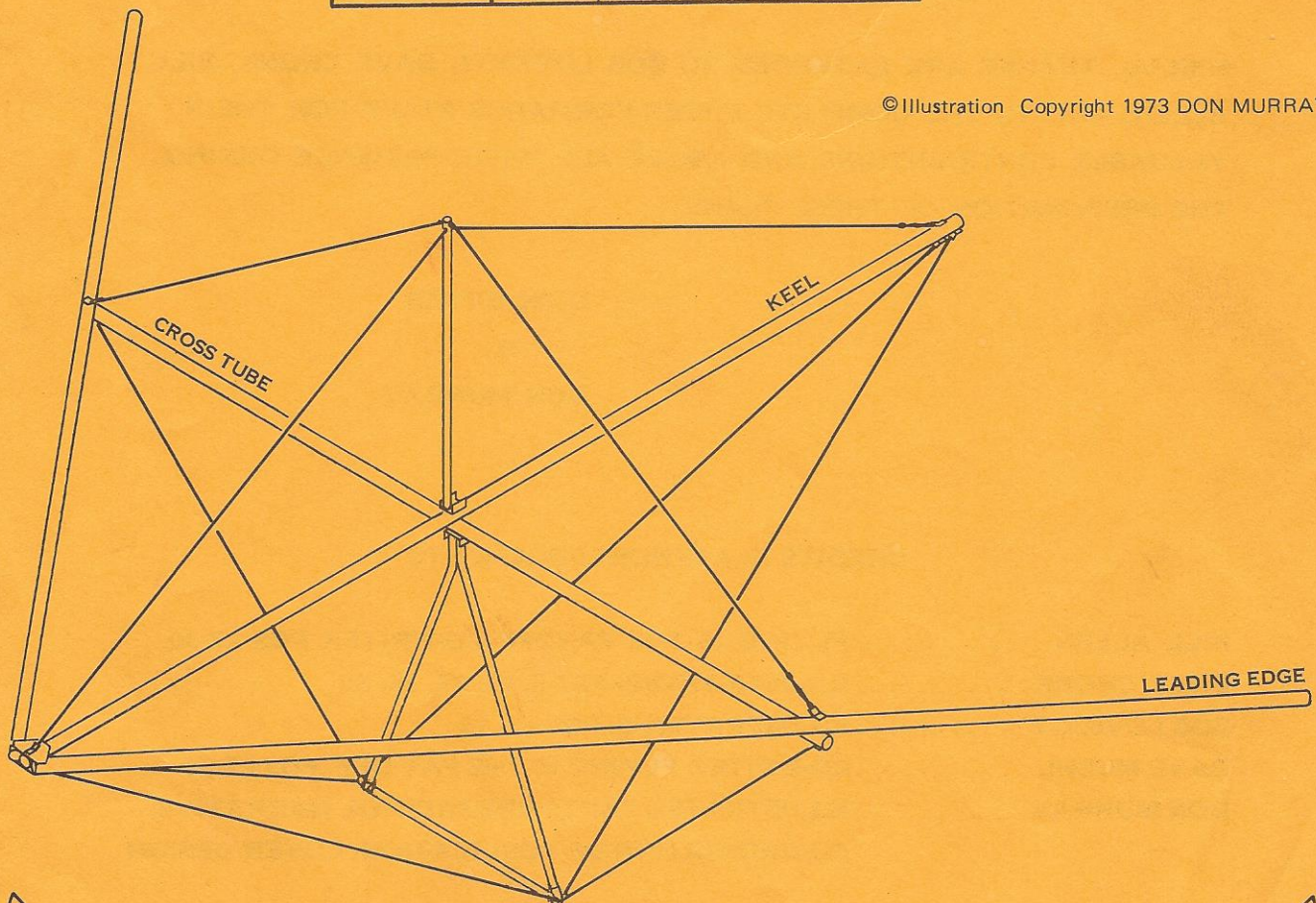
## CREDITS & ACKNOWLEDGEMENTS

BILL ALLEN . . . . . FLYING IS THE PAYOFF CO-WRITER PGS 27-30  
DAVE CRONK . . . . . ILLUSTRATIONS PGS 5, 23, 24, 25, 30  
BOB LOVEJOY . . . . . ILLUSTRATIONS, PGS 17, 18  
DAVE MUEHL . . . . . CO-WRITER FLYING IS THE PAY OFF. PGS 27-30  
DON MURRAY . . . . . ILLUSTRATED PARTS BREAKDOWN, NARRATIVE,  
CO-ORDINATION OF PUBLICATION, COVER DESIGN



Leading Edge and Keel	15'	16'	17'	18'
<b>A</b>	6' 4 1/8"	6' 8 5/8"	7' 1 7/8"	7' 7 1/8"
<b>B</b>	7' 3"	7' 9"	8' 3"	8' 9"
<b>C</b>	9' 5 3/8"	10' 5/8"	10' 8 1/2"	11' 4 5/8"

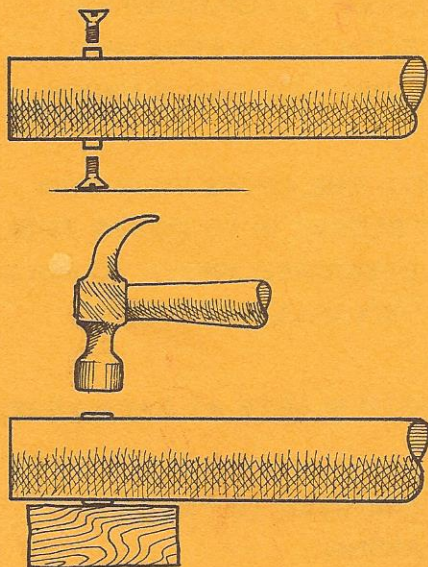
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#### DRILLING & INSERTING BUSHINGS IN MAIN TUBES

1. USING A 3/8" DRILL, SO THAT THE HOLES WILL ACCEPT BUSHINGS FOR A 1/4" DIAMETER BOLT, DRILL THE FIRST HOLE AT THE DESIGNATED SPOT ON THE KEEL WHERE THE CROSS TUBE WILL BE ATTACHED; TAKING CARE THAT THE DRILL DOES NOT DRIFT TO ONE SIDE OR THE OTHER.
2. IT IS IMPORTANT THAT ALL OF THE HOLES DRILLED IN EACH TUBE BE ALIGNED WITH EACH OTHER, SO IF YOU INSERT A LONG BOLT THROUGH THE FIRST HOLE DRILLED, IT CAN BE USED AS A VISUAL AID TO ACHIEVE THIS END. MORE EFFICIENT METHODS CAN BE IMPROVISED.
3. USING THE METHOD DESCRIBED ABOVE, "OR ONE BETTER", FINISH DRILLING YOUR KEEL WITH HOLES AT ONE AND THREE INCHES FROM THE NOSE, ONE AND TWO INCHES FROM THE TAIL.
4. WITH YOUR CROSS TUBE CUT TO THE PROPER LENGTH, YOU HAVE LEFT 1 1/2" OF TUBE ON EITHER END PAST THE HOLE TO HOLE MEASUREMENT SPECIFIED. DRILL THESE TIP HOLES ACCORDINGLY. THE CENTER HOLE, OF COURSE, WILL BE EXACTLY IN THE CENTER.
5. BOTH LEADING EDGE TUBES ARE TO BE DRILLED THE SAME AS EACH OTHER. MEASURING FROM THE NOSE, THE FIRST HOLE SHOULD BE AT 1", AND THE SECOND AT THE LENGTH SPECIFIED IN THE TUBE DIMENSION CHART.
6. THE CENTER HOLE ON THE CROSS TUBE AND THE CORRESPONDING HOLE IN THE KEEL SHOULD NOW BE REAMED WITH A 7/16" DRILL SO THAT THE HOLES WILL ACCOMMODATE BUSHINGS FOR THE 5/16" DIAMETER CENTER BOLT.
7. USING TWO FLAT HEAD SCREWS TO FLAIR YOUR BUSHINGS, PROCEED AS ILLUSTRATED.
8. THE MAIN TUBES ARE NOW READY FOR ASSEMBLY.



#### BUSHING

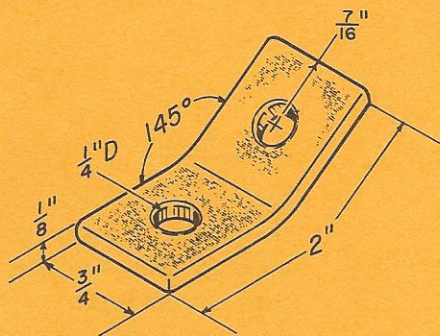
CUT BUSHING INTO 2" LENGTHS AND INSERT INTO HOLE, LEAVING AN EQUAL AMOUNT PROTRUDING ON EACH SIDE. INSERT FLATHEAD SCREWS ON BOTH ENDS OF BUSHING AND LAY TUBE ON A HARD CONCRETE SURFACE. POUND WITH A HAMMER UNTIL BUSHING FLARES. REMOVE SCREWS AND FINISH FLARE BY BACKING WITH A BLOCK OF WOOD AND FLATTENING BUSHING ENDS.

### MAIN TUBE LENGTHS

1. THE LENGTH OF THE KEEL AND BOTH LEADING EDGE TUBES ARE EQUAL. THIS LENGTH IS DETERMINED BY THE SIZE OF FLEXI FLIER YOU HAVE DECIDED TO BUILD. FOR AN 18' FLEXI FLIER THESE THREE TUBE LENGTHS ARE EACH 18'; FOR A 17' FLEXI FLIER, 17'; AND SO ON.
2. THE CROSS TUBE SHOULD BE CUT ACCORDING TO THE CHART
3. THE TUBES ARE NOW READY TO RECIEVE DOWELING AND SLEEVES.

### DOWELING & SLEEVES FOR MAIN TUBES

1. YOU WILL NEED ENOUGH 1 3/8" DIAMETER FULL ROUND DOWEL TO CUT TWO LENGTHS 14" LONG AND FOUR 6" LONG, AND SIX 4" LENGTHS.
2. THE SLEEVE MATERIAL IS 1 5/8" DIAMETER .049 WALL 6061-T6. YOU NEED TWO 18" LENGTHS AND TWO 12" LENGTHS.
3. INSERT ONE 14" LENGTH OF DOWEL INTO THE KEEL TUBE SO THAT IT WILL BE POSITIONED INSIDE THE AREA COVERED BY THE SLEEVE. A STICK OR LENGTH OF SMALL DIAMETER TUBING CAN BE USED AS A RAM-ROD TO POSITION THE DOWEL AT THE DESIRED DEPTH.
4. SLIDE ONE 18" LENGTH OF SLEEVE MATERIAL OVER THE KEEL TUBE TO COVER THE AREA REINFORCED BY THE 14" DOWEL. A POP RIVET OR SHEET METAL SCREW CAN BE USED TO HOLD BOTH THE SLEEVE AND DOWEL IN PLACE UNTIL THE HOLE HAS BEEN DRILLED AND BUSHING INSERTED.
5. THE OTHER 14" DOWEL IS TO BE INSERTED INTO THE CROSS TUBE AND POSITIONED AT THE CENTER. THE OTHER 18" SLEEVE IS TO COVER THIS REINFORCED AREA. USE THE SAME METHOD DESCRIBED ABOVE TO HOLD THE SLEEVE AND DOWEL IN PLACE SO THAT THEY WILL NOT SHIFT BEFORE BEING DRILLED.
6. POSITION 6" LENGTH OF DOWEL AND 12" LENGTH SLEEVE AT EACH LEADING EDGE TUBE AT THE SPECIFIED DEPTH.
7. THE EIGHT REMAINING LENGTHS OF DOWEL ARE USED TO PLUG THE ENDS OF EACH TUBE, AS ILLUSTRATED IN DRAWING.
8. THE MAIN TUBES ARE NOW READY TO BE DRILLED.

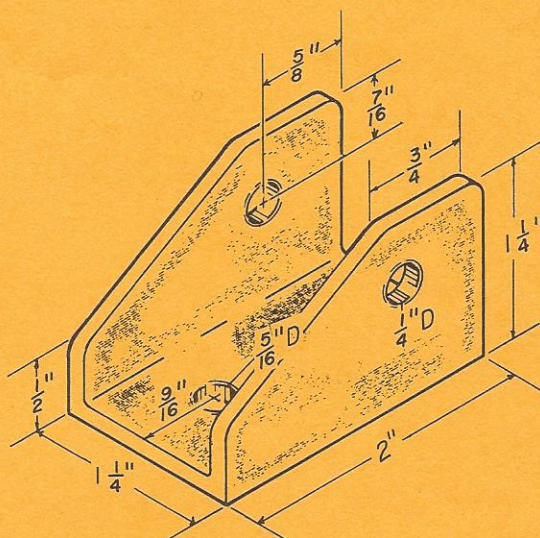


#### THE TANG

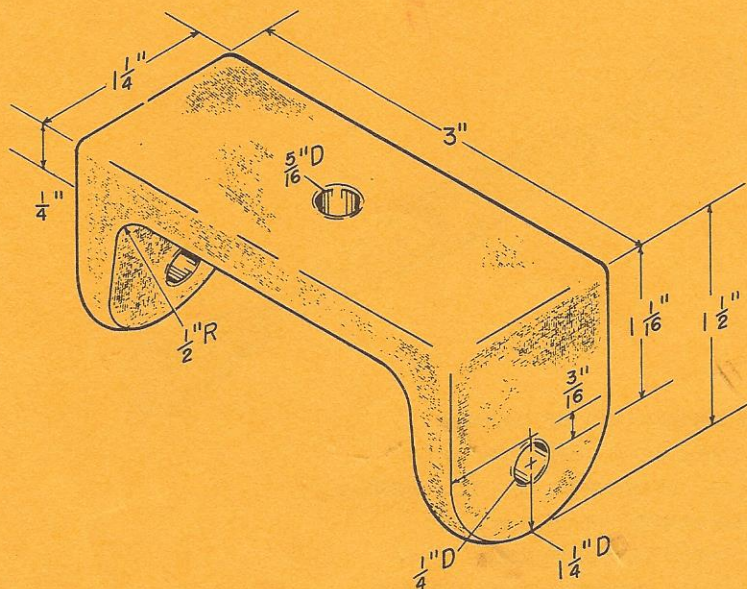
1/8 X 3/4 X 2" PIECES OF 304 STAINLESS STEEL ARE DRILLED AND CHAMFERED. ALL BURRS MUST BE REMOVED TO MINIMIZE THE CUTTING EFFECT AGAINST THE THIMBLE. THE BEND SHOULD BE MADE IN A SMALL PRESS OR VISE. CORNERS SHOULD BE ROUNDED TO PREVENT SAIL DAMAGE.

#### KING POST FITTING

1 1/4 X 1 1/4 X 2" 6061 T-6 ALUMINUM CHANNEL IS USED. THIS IS A STANDARD EQUAL LEG, SHARP CORNER CHANNEL. ANGLE CUT SHOULD BE LAYED OUT & CUT WITH HACKSAW. CORNERS SHOULD BE ROUNDED TO PREVENT SAIL DAMAGE. HOLES SHOULD THEN BE LAYED OUT & DRILLED. REMOVE ALL BURRS.



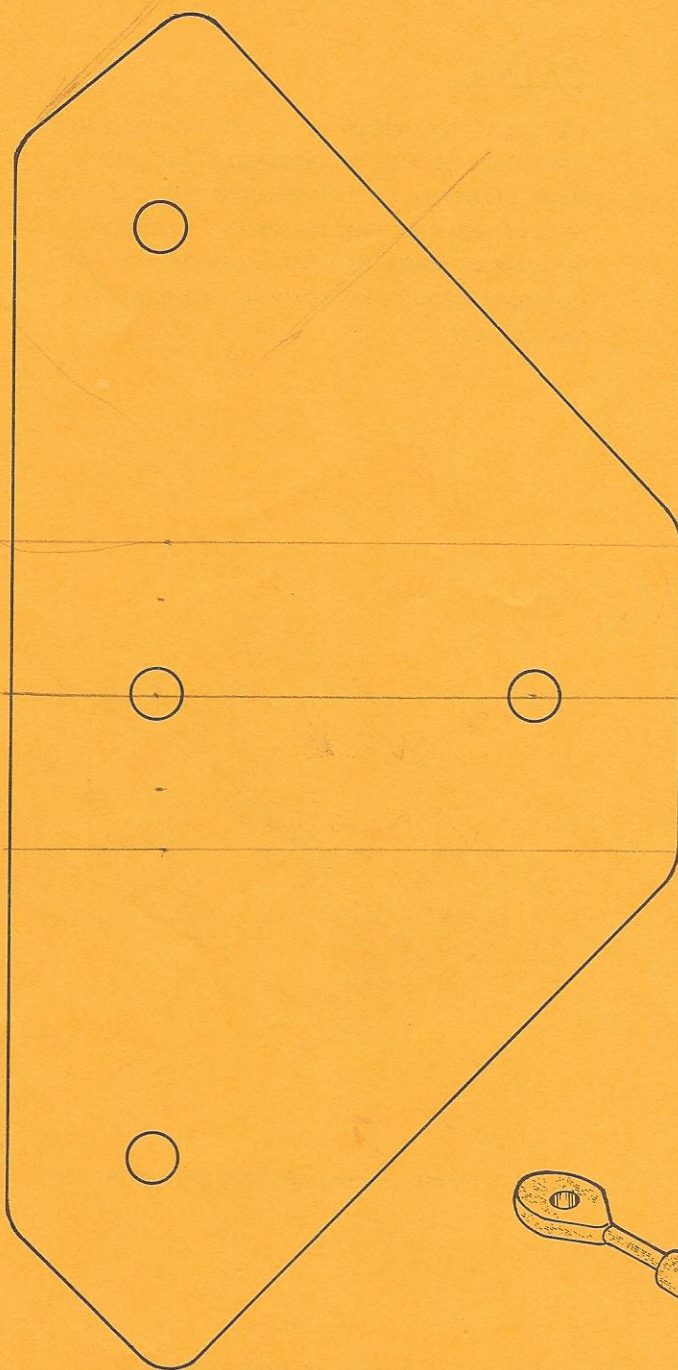
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#### TRIANGLE BAR FITTING

1 1/2 X 3 X 1 1/4" 6061 T6 STRUCTURAL CHANNEL WITH 1/4 OR 3/8 BASE THICKNESS IS USED. RADIUS CAN BE CUT ON A SMALL BENCH MILL OR POWER SANDER. HOLES ARE LAYED OUT, DRILLED, AND DEBURRED. SHARP CORNERS ARE REMOVED TO PREVENT SAIL DAMAGE.

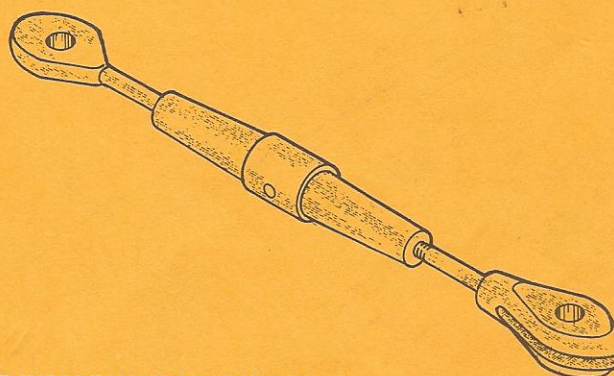
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#### NOSE PLATE

FULL SIZE TEMPLATE. 303-304 STAINLESS STEEL OR 1/8" 2024 T-3 ALUMINUM IS NECESSARY. CUTS CAN BE MADE ON SMALL JUMP SHEAR, OR GOOD HAND SHEARS, OR SAW. ROUND CORNERS & SMOOTH EDGES. HOLES ARE 1/4" DIAMETER.

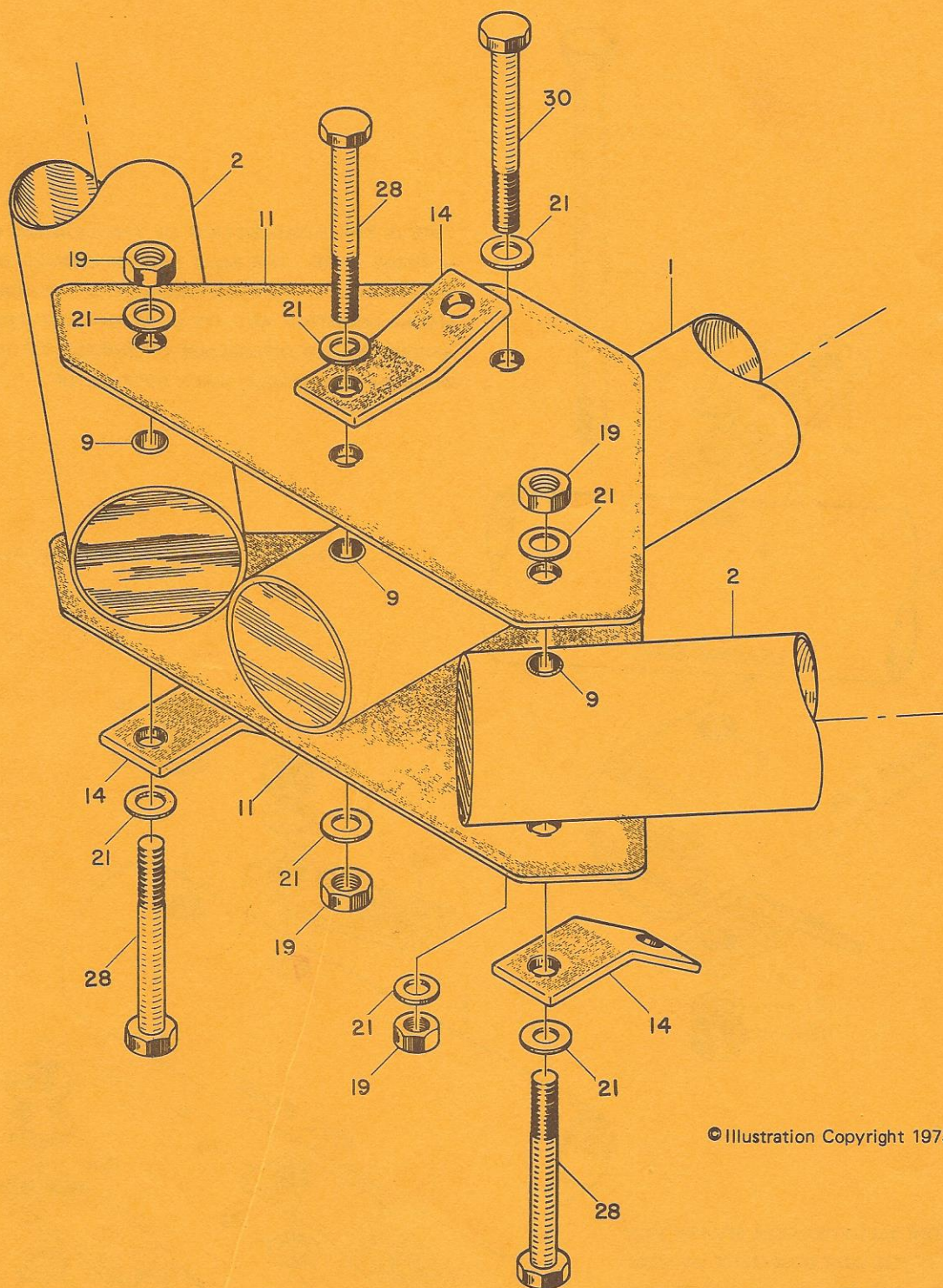
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#### AIRCRAFT TURNBUCKLE

I CAN'T EXPRESS ENOUGH THE GREAT IMPORTANCE OF USING A GOOD GRADE TURNBUCKLE. PEOPLE HAVE BEEN OBSERVED TO USE CHEAP HARDWARE STORE TURNBUCKLES. THESE WILL NOT DO. NORMAL FLIGHT LOADS ARE ON LOWER RIGGING WIRES ("FLYING WIRES") PLEASE DON'T USE TURNBUCKLES ON THESE LOWER WIRES. I HAVE OBSERVED OCCASIONS WHERE THESE HAVE UNSCREWED OR SHEARED THE THREADS IN FLIGHT. FORTUNATELY NO SERIOUS ACCIDENTS HAVE OCCURED. SHAFT SIZE MUST BE AT LEAST 3/16", BRONZE OR STAINLESS STEEL IS RECOMMENDED.

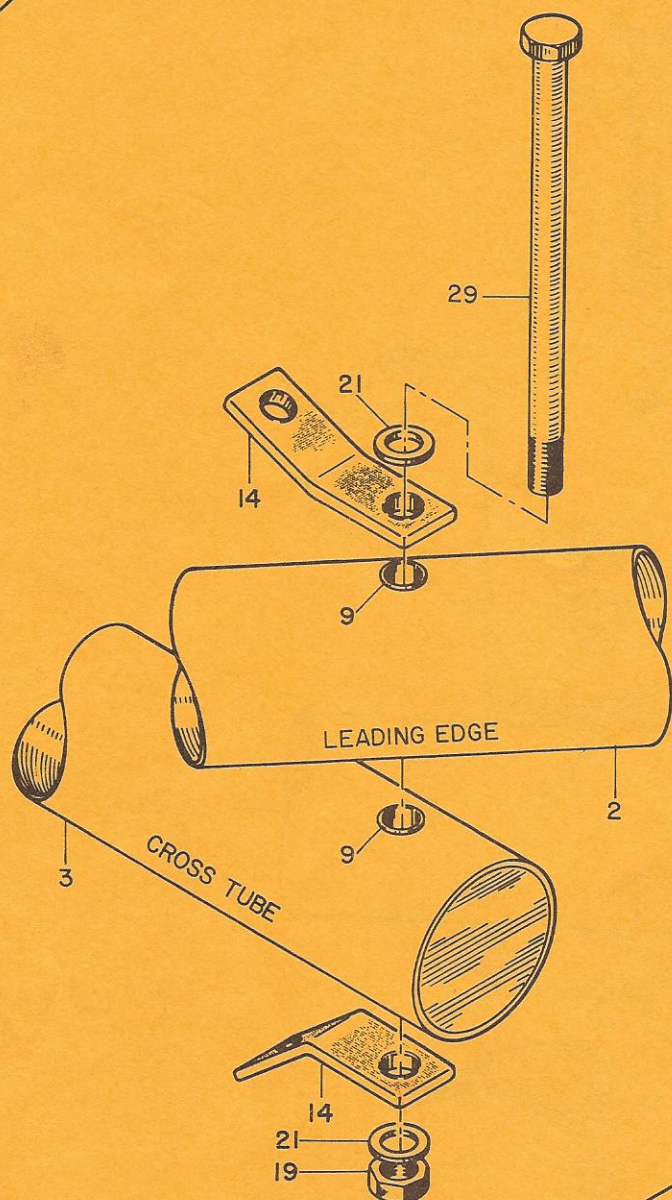
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THE PRE-RIGGING ASSEMBLY PROCEDURE DOES NOT FOLLOW ANY UNUSUAL SEQUENCE. EXPLANATION OF THE DRAWINGS IS, WE FEEL, UNNECESSARY. HOWEVER, WE WILL ENDEAVOR TO PASS ON TIPS FOR CONSTRUCTION AND ASSEMBLY BASED ON TECHNIQUES I HAVE DEVELOPED OVER THE YEARS. HERE, FOR INSTANCE, THE BOLTS SHOULD BE TIGHTENED TO THE PROPER GRIP LENGTH WITHOUT CAUSING DISTORTION OF THE TUBES OR RESTRAINING THE LEADING EDGES FROM SWINGING FREELY. MAKE SURE THE NOSE PLATES ARE INSTALLED FACING FORWARD OR THE FRAME WILL NOT LINE UP PROPERLY.

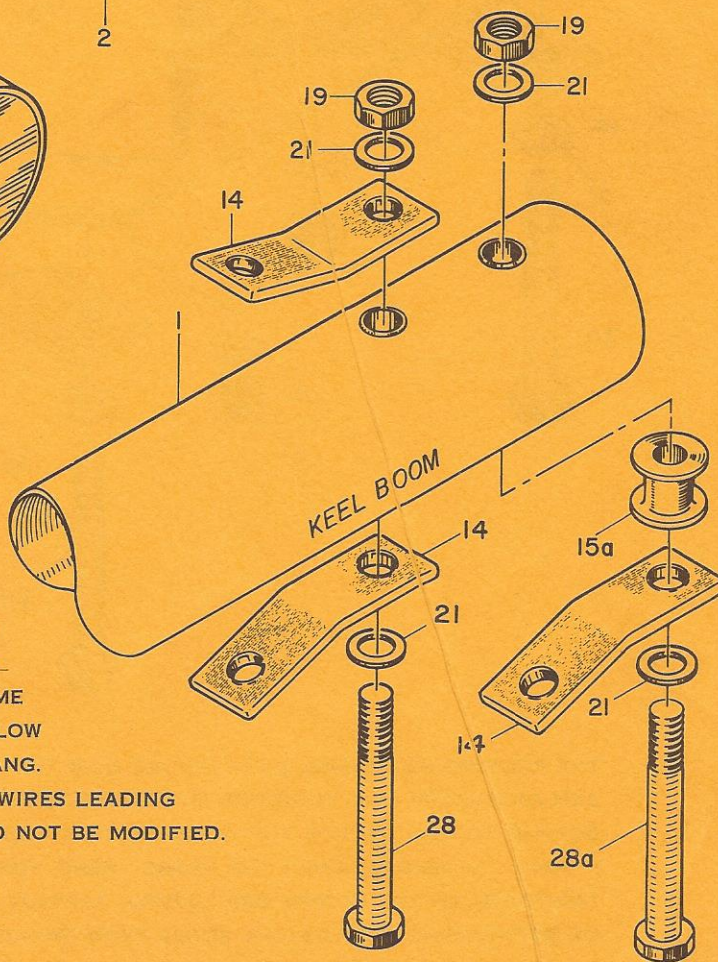
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THIS IS THE INTERSECTION OF THE LEADING EDGE & CROSS TUBE. THE BOLT (NO. 29) SHOULD BE PERIODICALLY CHANGED BECAUSE OF ITS HIGH SHEAR LOCATION AND ITS CONSTANT USE FROM ASSEMBLY AND DISASSEMBLY. CHECK IT FOR WEAR OCCASIONALLY WHEN SETTING UP.

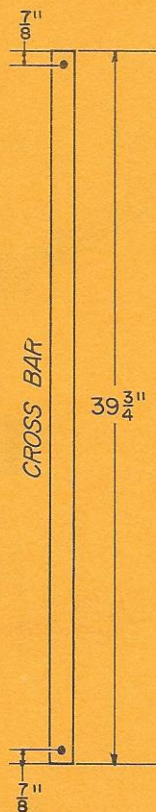
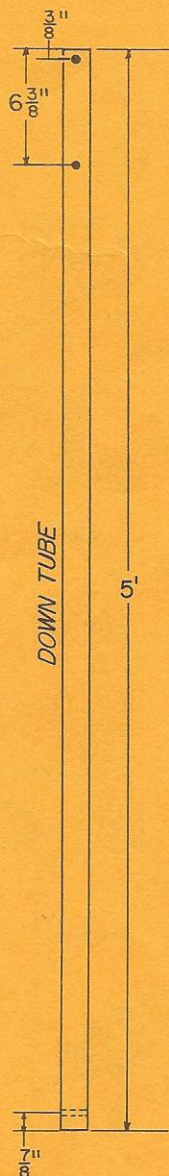
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AGAIN THE ILLUSTRATION SPEAKS FOR ITSELF IN THE ARRANGEMENT OF COMPONENTS. THE SPACER ON THE EXTREME REAR BOLT (28A) IS NECESSARY TO ALLOW CLEARANCE AROUND THE FORWARD TANG. THERE IS A SPECIAL REASON FOR THE WIRES LEADING TO SEPARATE BOLTS AND THIS SHOULD NOT BE MODIFIED.

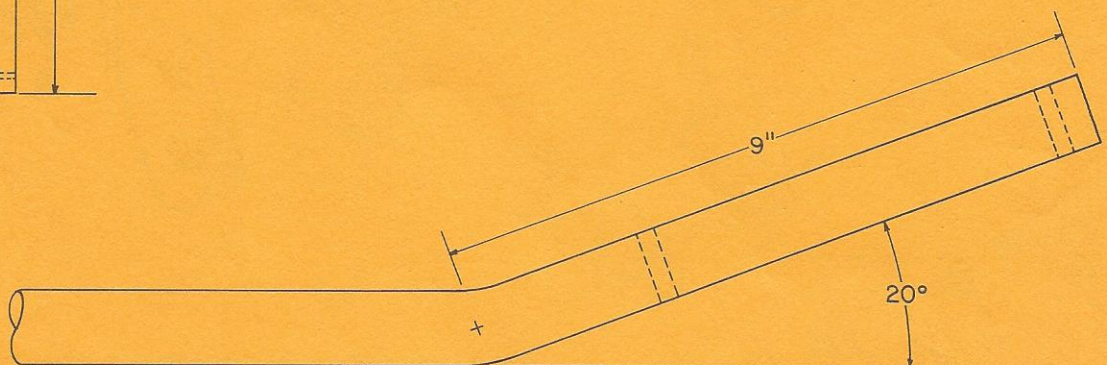


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THE KING POST IS PLUGGED AT BOTH ENDS WITH 2" X 7/8" ROUND DOWEL. HOLES ARE DRILLED WITH A 1/4" DRILL. THE TOP HOLES ARE PERPENDICULAR TO EACH OTHER AND HAVE 1/4" ALUMINUM BUSHING INSERTED TO PREVENT WIRE CHAFING. BOTTOM HOLE IS DRILLED AS SHOWN.

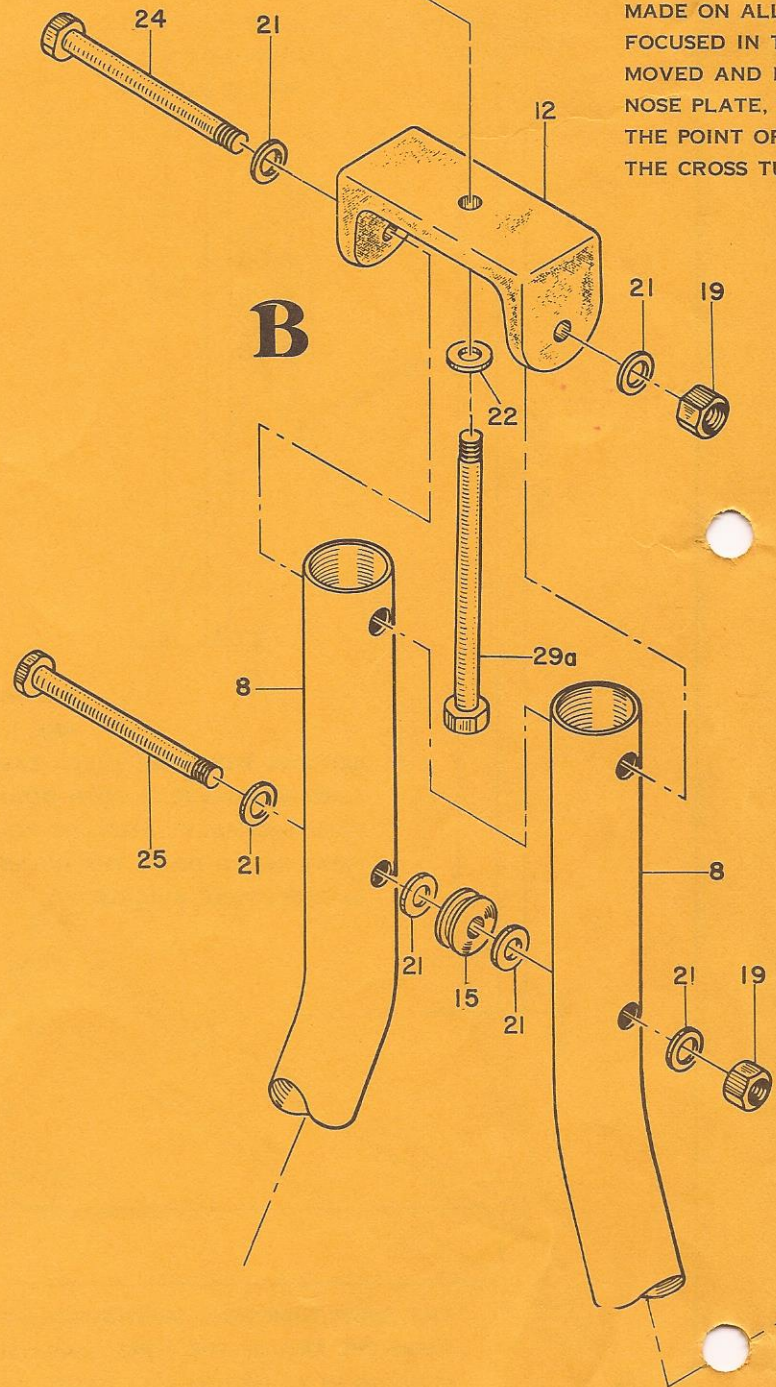
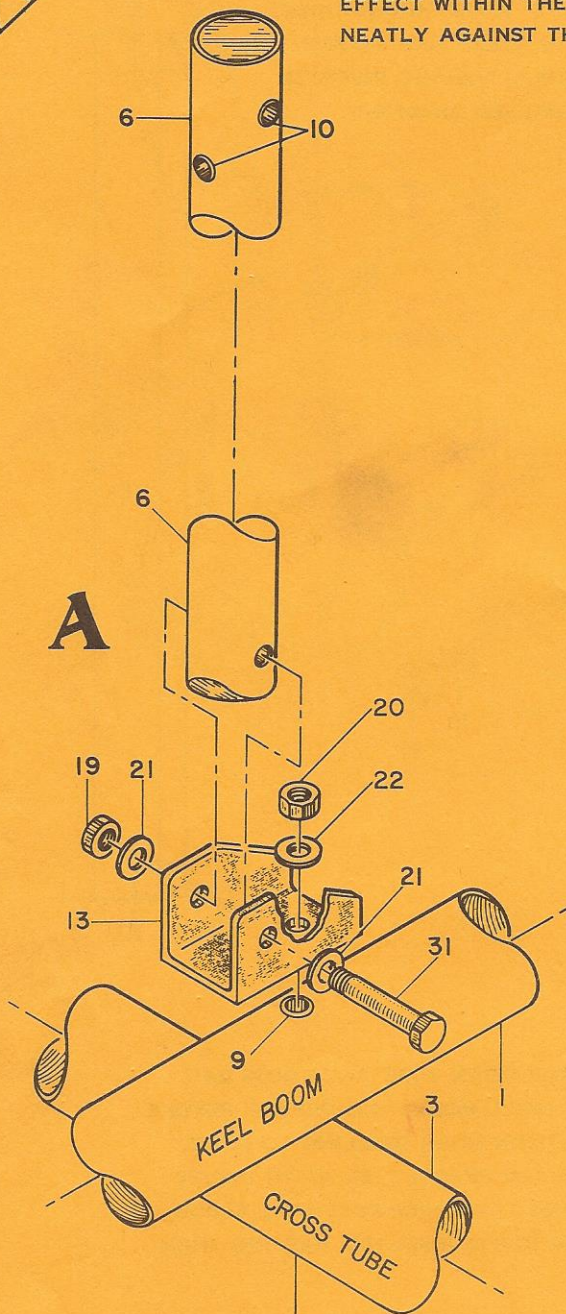


ALL HOLES ON THE DOWN TUBE AND CROSS BAR ARE 1/4" ALSO. DRILL HOLES AND DEBURR BEFORE BENDING THE DOWN TUBE. EXERCISE CAUTION WHEN DRILLING TO MAKE SURE ALL HOLES IN BOTH DOWN TUBES ALIGN EXACTLY, SO AS TO INSURE EASY ASSEMBLY LATER. IF YOU ARE USING THE EIPPER-FORMANCE ELBOW JOINT (NO.17) DRILL THE HOLES WITH THE JOINTS INSERTED, KEEPING THEM IN RESPECTIVE ALIGNMENT.



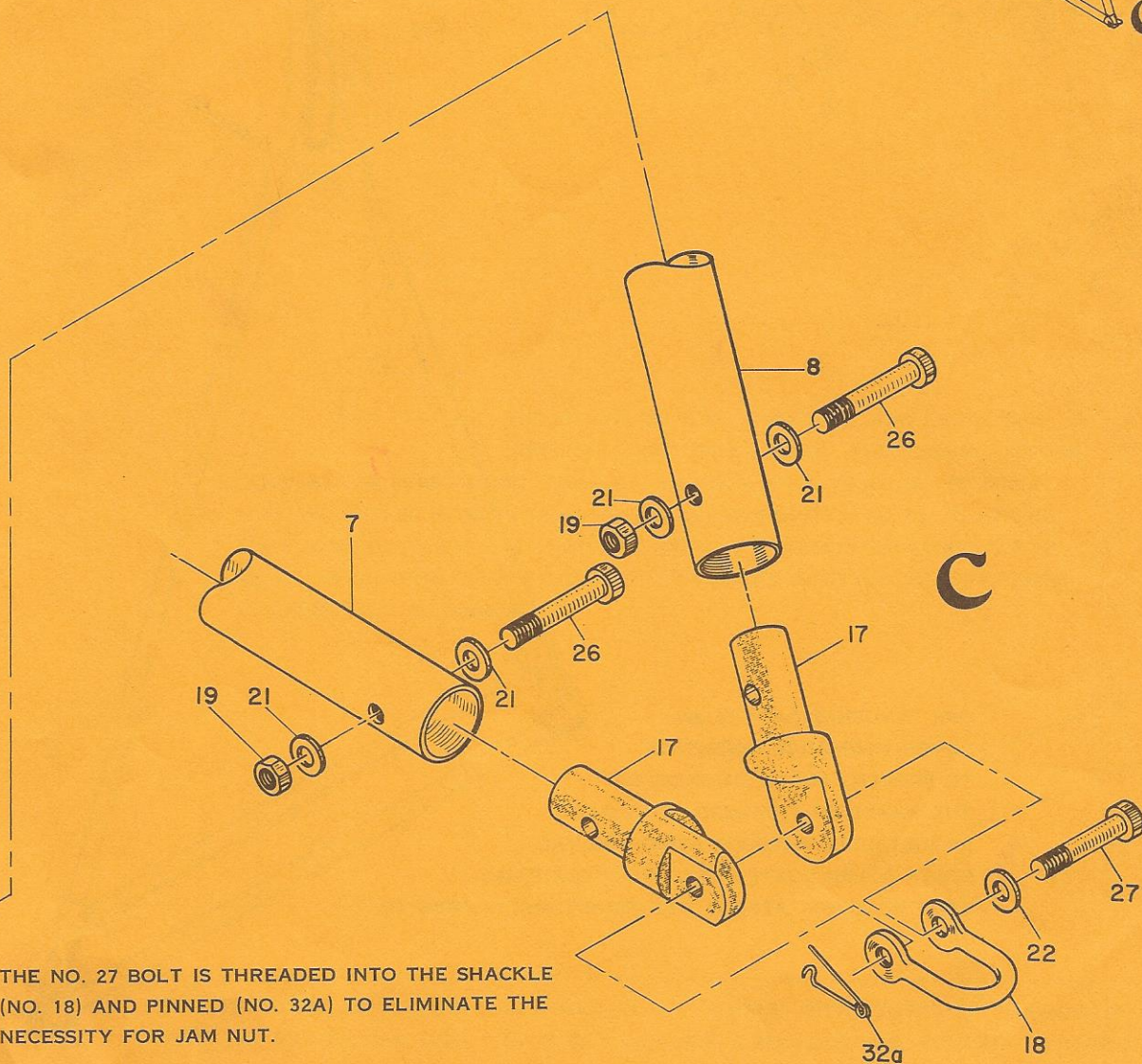
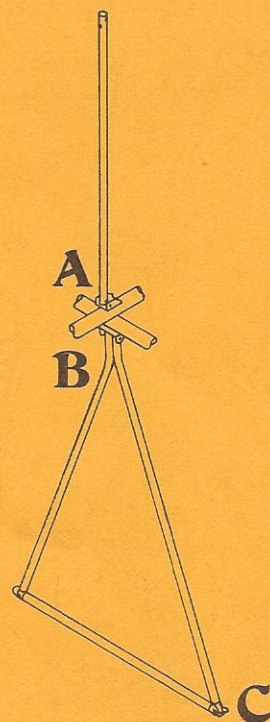
THE DOWN TUBE BEND SHOULD BE MADE ON A 4" RADIUS WITH CENTER OF THE BEND 9" FROM THE END OF THE TUBE. HAVE THIS DONE ON A PROFESSIONAL BENDER. IMPROPER BENDING IN ALUMINUM WILL CAUSE FATIGUING AND EVENTUAL BREAKAGE.

A RADIUS HAS BEEN CUT IN THE BASE OF THE KING POST TO ALLOW HINGE EFFECT WITHIN THE FITTING. THIS IS TO ALLOW KING POST TO FOLD DOWN NEATLY AGAINST THE AIRFRAME FOR NEATER TRANSPORT AND CONVENIENCE.

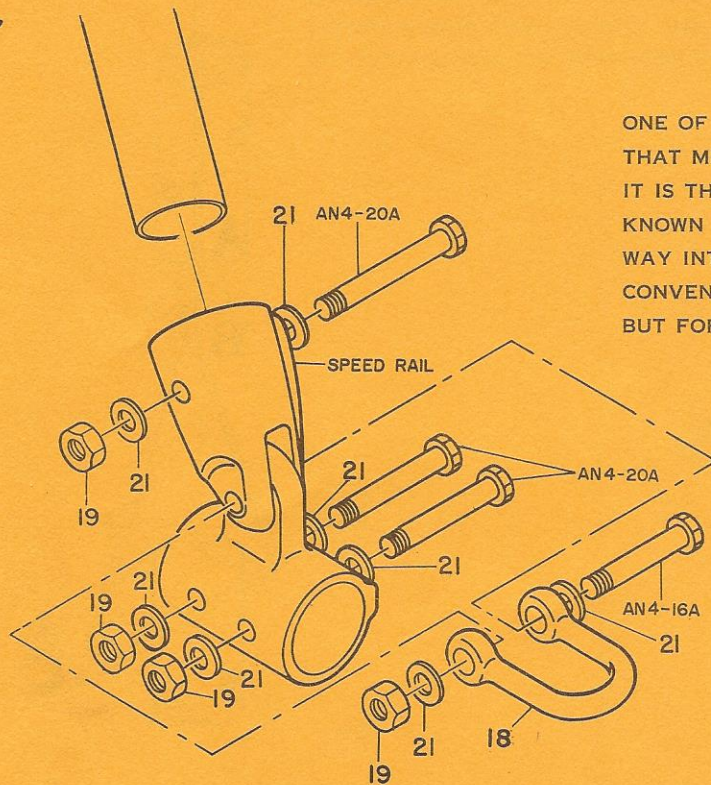


THIS AREA FEEL  
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MOVED AND IS  
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THE POINT OF  
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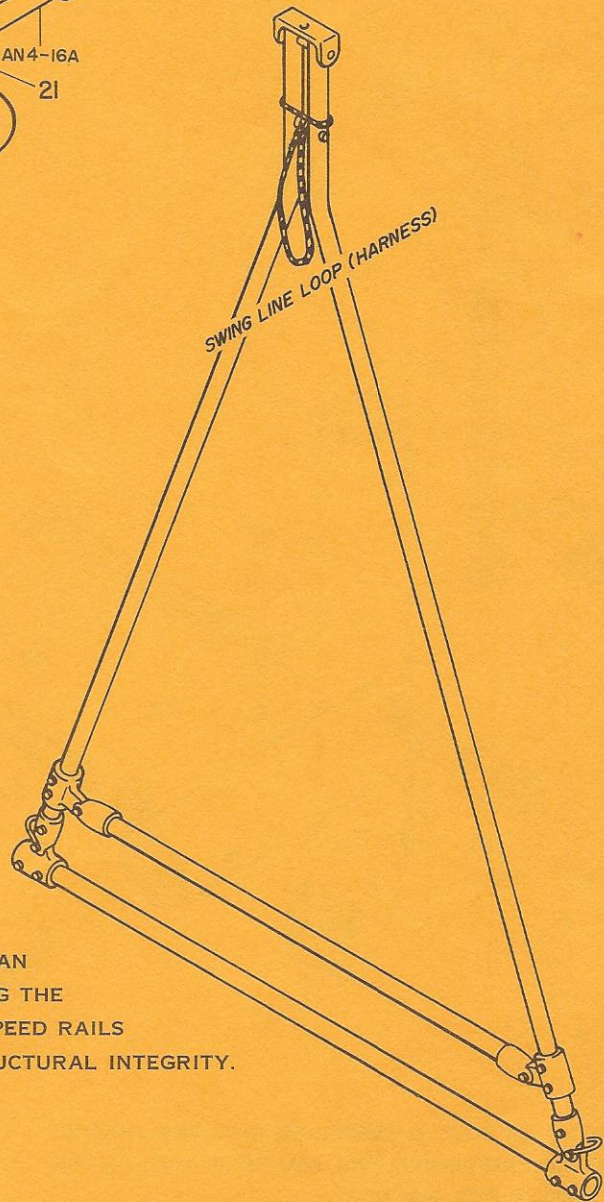
TURES THE MOST IMPORTANT BOLT (NO. 29A)  
FRAME. PERIODICALLY, CHECKS SHOULD BE  
BOLTS, BUT SPECIAL ATTENTION SHOULD BE  
IS AREA BECAUSE THIS BOLT IS SELDOM RE-  
EASILY OVERLOOKED. AGAIN, AS IN THE  
GHTEN CENTER BOLT FIRMLY, BUT NOT TO  
DISTORTING TUBES OR IMPAIRING SWING OF THE  
E.



THE NO. 27 BOLT IS THREADED INTO THE SHACKLE  
(NO. 18) AND PINNED (NO. 32A) TO ELIMINATE THE  
NECESSITY FOR JAM NUT.



ONE OF THE FEW ALTERNATIVES IN EQUIPMENT THAT MEETS MY APPROVAL IS PICTURED HERE. IT IS THE STANDARD INDUSTRIAL RAIL FITTING KNOWN AS THE "SPEED RAIL". IT FOUND ITS WAY INTO EARLY KITE DESIGNS BECAUSE OF ITS CONVENIENT APPLICATION AND IS SATISFACTORY BUT FOR ITS APPEARANCE AND WEIGHT. IT IS SHOWN IN ITS RESPECTIVE POSITION IN THE TRIANGLE BAR ASSEMBLY. BE SURE TO REMOVE ITS EXISTING ALLEN BOLTS AND INSTALL WITH THE AN BOLTS AS SHOWN.



THE "KNUCKLE-BAR" IS AN EIPPER-FORMANCE INVENTION TO PREVENT MINOR INJURIES TO THE HANDS OF TRAINEES. THIS CAN BE INSTALLED WITHOUT REMOVING THE STOCK ALLEN BOLTS FROM THE SPEED RAILS AS IT DOES NOT AFFECT THE STRUCTURAL INTEGRITY.

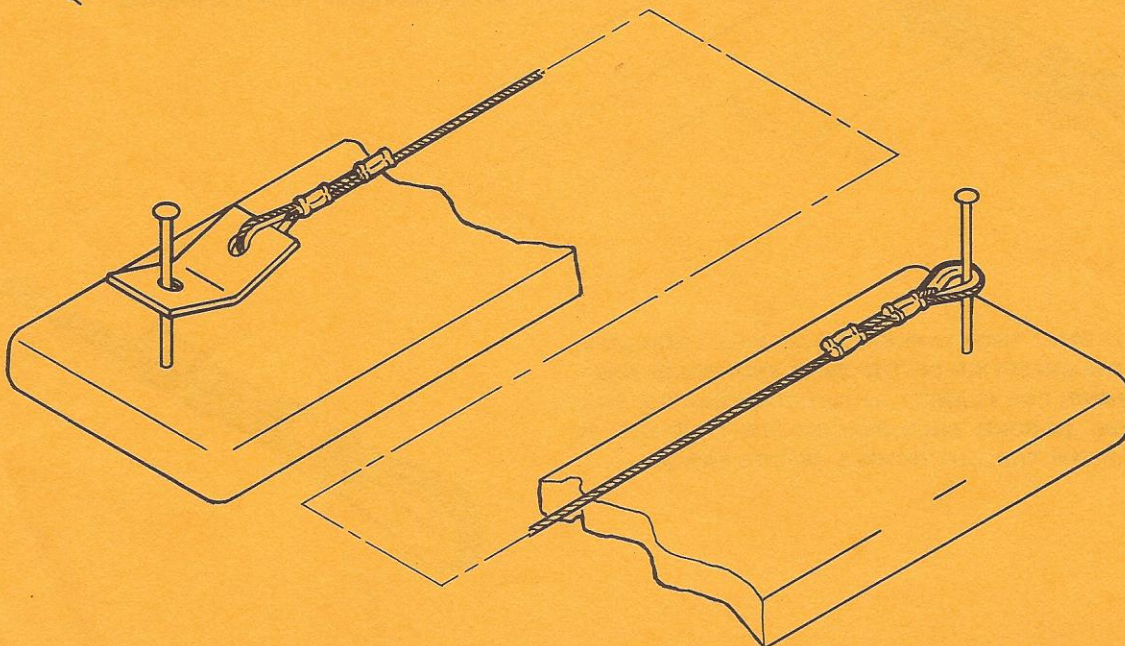
## SWAGING OF WIRES / CABLES

ONE OF THE MOST IMPORTANT STEPS IN THE ASSEMBLY OF YOUR FLEXI FLIER IS THE ASSEMBLY OF YOUR FLYING & RIGGING WIRES. ADHERING TO F.A.A. STANDARDS IN RIGGING & SWAGING IS OF UTMOST IMPORTANCE, BUT FOR MY OWN SATISFACTION I PREFER THE USE OF TWO RATHER THAN ONE NICO SLEEVE. THIS EXTRA STEP MINIMIZES THE POSSIBILITY OF SPLICE FAILURE & ALLOWS THE SECOND SLEEVE TO CONCEAL THE SHARP WIRE ENDS WITHOUT REDUCING STRUCTURAL STRENGTH.

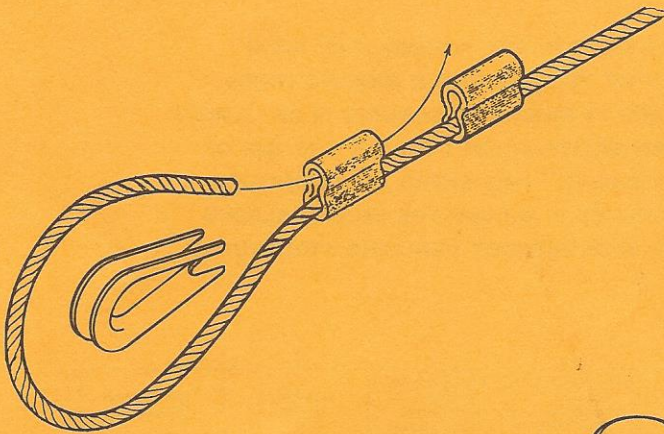
Cable size	Copper oval sleeve stock no.		Manual tool No.	Sleeve length before compression (approx. inches)	Sleeve length after compression (approx. inches)	Number of presses	Total strength (pounds)
	Plain	Plated					
1/16	18-1-C	28-1-C	51-C-887	3/8	7/16	1	550
3/32	18-2-G	28-2-G	51-G-887	7/16	1/2	1	1,180
1/8	18-3-M	28-3-M	51-M-850	9/16	3/4	3	2,300

THE ABOVE TABLE GIVES THE CORRECT COPPER OVAL SLEEVE DATA WITH PART NO. OF AMERICAN TELE. SUPPLY CO. MANUFACTURERS. THIS DATA WAS COMPILED FROM F.A.A. PUBLICATION NO. AC 43.13-1 CHG1 5/1/67. CHAP. 4' PAR. 103' FIGURE 4.8, PAGE 89.

THE FIRST PROCESS IN PREPARING THE RIGGING SHOULD BE WITH THE TANG END OF THE WIRE. THIS ENABLES PRELIMINARY INSTALLATION FOR THE PROPER LENGTH & MEASUREMENTS AS ILLUSTRATED LATER IN THESE PLANS. WITH THE TANG SPLICE SECURED TO THE FRAME A MORE ACCURATE MEASUREMENT TO THE TRIANGLE BAR IS ACHIEVED. A DUPLICATE WIRE IS THEN MADE FROM RIGGING BOARD AS ILLUSTRATED.



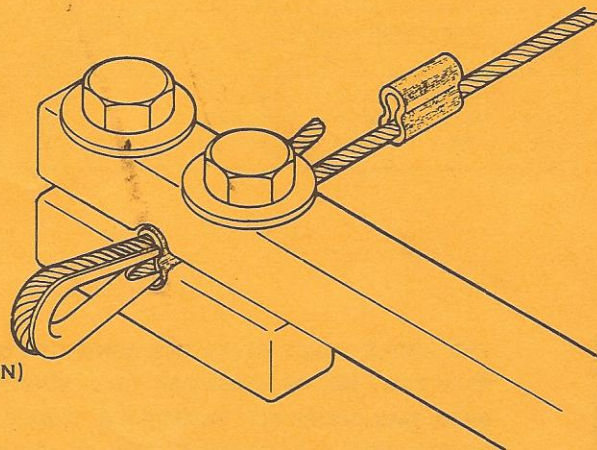
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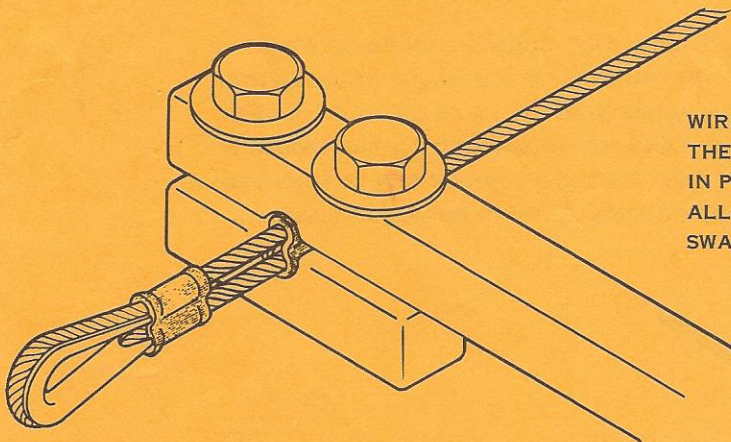
THE TWO NICO SLEEVES ARE ALREADY SLID ONTO THE WIRE, AS SHOWN. LOOP SHOULD BE FORMED BY RUNNING WIRE THROUGH FRONT SLEEVE, REMOVING SLACK TO FORM A TIGHT EYE AROUND THE THIMBLE.

SHOWN HERE IS A HAND NICO TOOL MANUFACTURED BY EIPPER-FORMANCE. MORE EXPENSIVE TOOLS ARE AVAILABLE BUT THE EMPHASIS MUST BE PLACED ON THE USE HERE OF THE PROPER TOOL. DO NOT USE PLIERS, VISE, HAMMER OR OTHER MAKESHIFT TOOLS.

PLACE NICO TOOL ON FIRST SLEEVE (AS SHOWN) KEEPING THE EYE TIGHT, THEN TIGHTENING BOLTS TO TOTAL COMPRESSION OF SLEEVE.

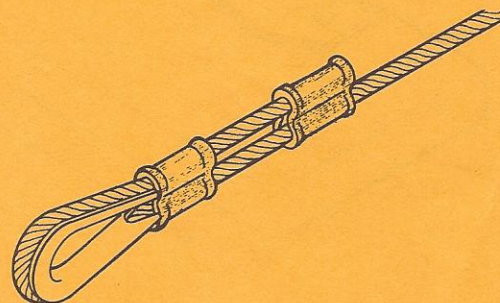


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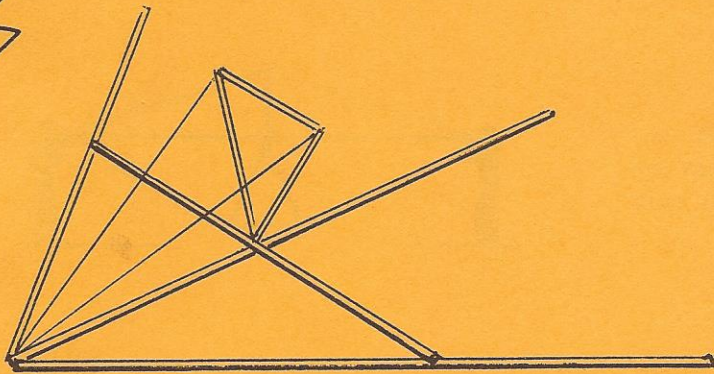


WIRE IS TRIMMED 1 INCH FROM THE END OF THE FIRST SLEEVE. SLIDE THE SECOND SLEEVE IN PLACE, FULLY COVERING THE WIRE, BUT NOT ALLOWING THE END TO PROTRUDE. TIGHTEN SWAGE AS PREVIOUSLY EXPLAINED.

HERE IS WHAT THE COMPLETED WIRE WILL LOOK LIKE, WITH THE EXCEPTION OF THE TANG END, WHICH WAS NOT SHOWN FOR CLARITY IN ILLUSTRATING THE SWAGE PROCESS. BE SURE, WHEN SWAGING THE TANG END, TO ATTACH THE TANG TO THIMBLE BEFORE SWAGE.



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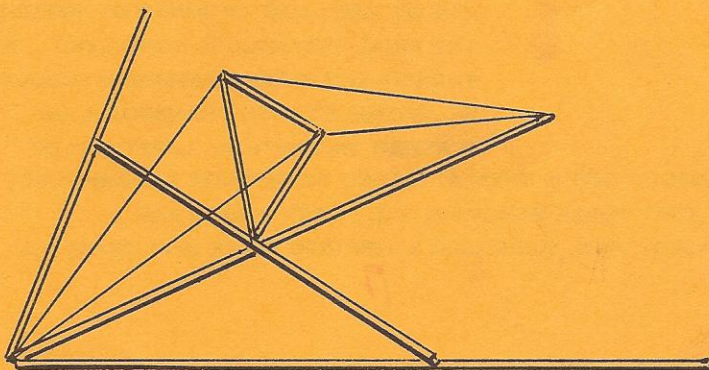
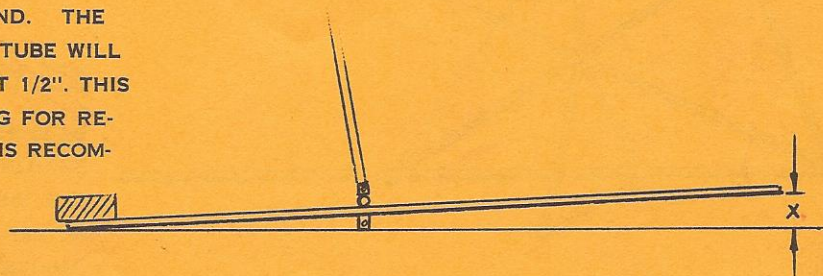
#### NOSE WIRES

WITH FRAME FULLY ASSEMBLED & LAYING UPSIDE DOWN ON GROUND, TRIANGLE BAR IS INSTALLED & POSITIONED THREE INCHES FORWARD OF PERPENDICULAR. TAKE A MEASUREMENT AS EXPLAINED EARLIER & SWAGE TWO WIRES TO MATCH. ATTACH THESE IN PLACE & PROCEED TO TAIL WIRES.

*NOTE: If swing seat is to be used in place of harness triangle bar should be perpendicular to keel.*

#### REFLEX

(A SLIGHT BOW UPWARD WHEN KITE IS SEEN UPRIGHT) WITH FRAME RESTING ON KINGPOST FITTING, REST A HEAVY BLOCK ON NOSE PLATES. THIS WILL RAISE THE TAIL OFF GROUND. THE NATURAL WEIGHT OF THE ALUMINUM TUBE WILL DEFLECT THE TUBE DOWNWARD ABOUT 1/2". THIS MUST BE CONSIDERED WHEN ALLOWING FOR REFLEX. A TOTAL OF 1 1/2 - 2" REFLEX IS RECOMMENDED TO INCREASE HANDS-OFF STABILITY IN FLIGHT.

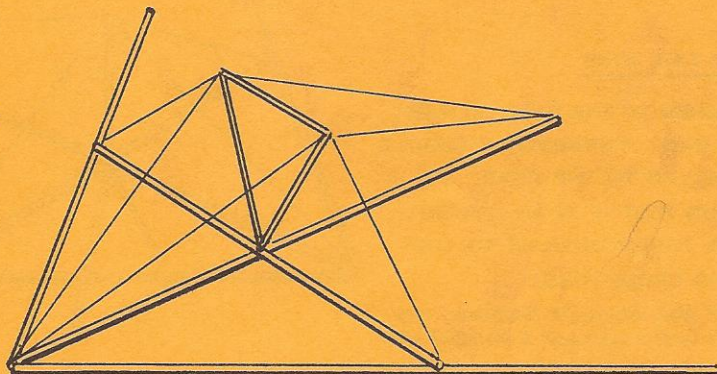


#### TAIL WIRES

AFTER COMPUTING REFLEX, A MEASUREMENT FOR THE SHORTER TAIL WIRE SHOULD BE TAKEN & WIRE SWAGED IF HOLES WERE DRILLED ACCURATELY AS SPECIFIED, 5/8" SHOULD BE ADDED TO THE SHORTER WIRE LENGTH FOR THE REMAINING TAIL WIRE.

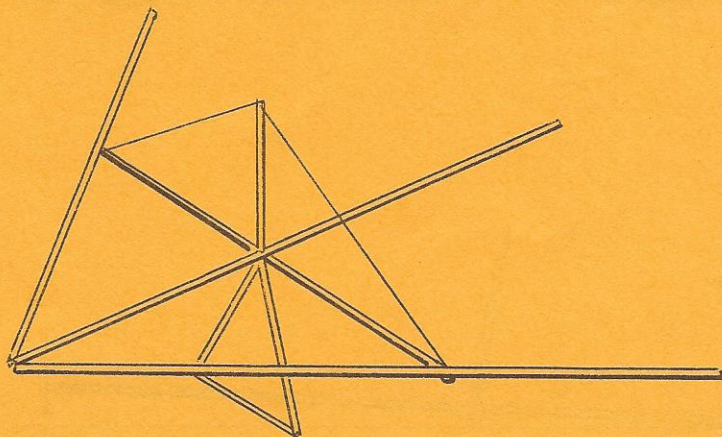
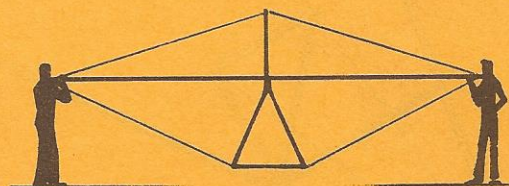
#### SIDE WIRES

WITH THE HELP OF SOME FRIENDS, DETERMINE THE PROPER LENGTH FOR SIDE WIRES BY MEASURING THEM SIMULTANEOUSLY. THESE SHOULD THEN BE ASSEMBLED & INSTALLED.



### KING POST WIRES

WHEN RIGGING THESE WIRES IT IS IMPORTANT TO REMOVE ALL SLACK FROM LOWER WIRES FIRST. BY LIFTING AIRFRAME IN MANNER ILLUSTRATED, THIS CAN BE ACCOMPLISHED EASILY.



*NOTE: Bottom or "Flying Wires" are not drawn here to eliminate confusion.*

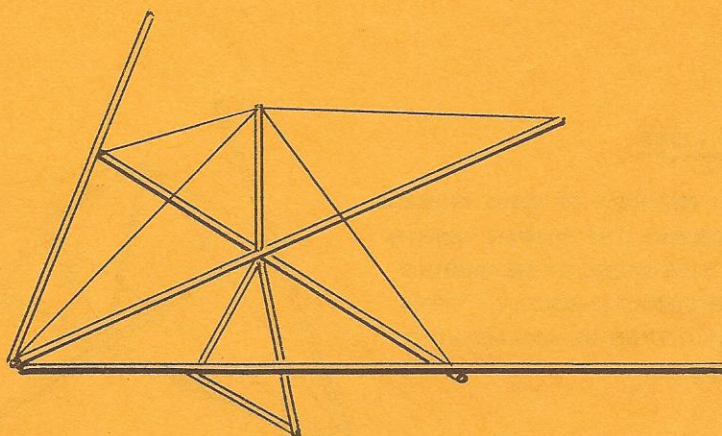
### SIDE TO SIDE WIRES

BE SURE KINGPOST IS UPRIGHT BEFORE SWAGING WIRES. INSTALL A TANG TO ONE END OF WIRE TO BE USED. INSTALL AT LEADING EDGE & CROSS TUBE JUNCTION. SLIDE NICO STOPS OVER WIRE, ONE AT EACH SIDE OF KINGPOST, BEFORE THE FINAL SWAGING IS COMPLETED. A TURNBUCKLE & TANG ASSEMBLY SHOULD BE ASSEMBLED WITH TURNBUCKLE UNSCREWED, BUT WITH AT LEAST  $\frac{3}{8}$ " OF THREADS BEING USED. THIS IS THEN ATTACHED TO OPPOSITE LEADING EDGE AND CROSS TUBE JOINT WHILE REMOVING ALL LOWER WIRE SLACK, WIRE IS THEN SWAGED. NOW, SLIDE NICO STOPS INTO PLACE AND SWAGE  $\frac{1}{4}$ " FROM KING POST.

### NOSE TO TAIL WIRE

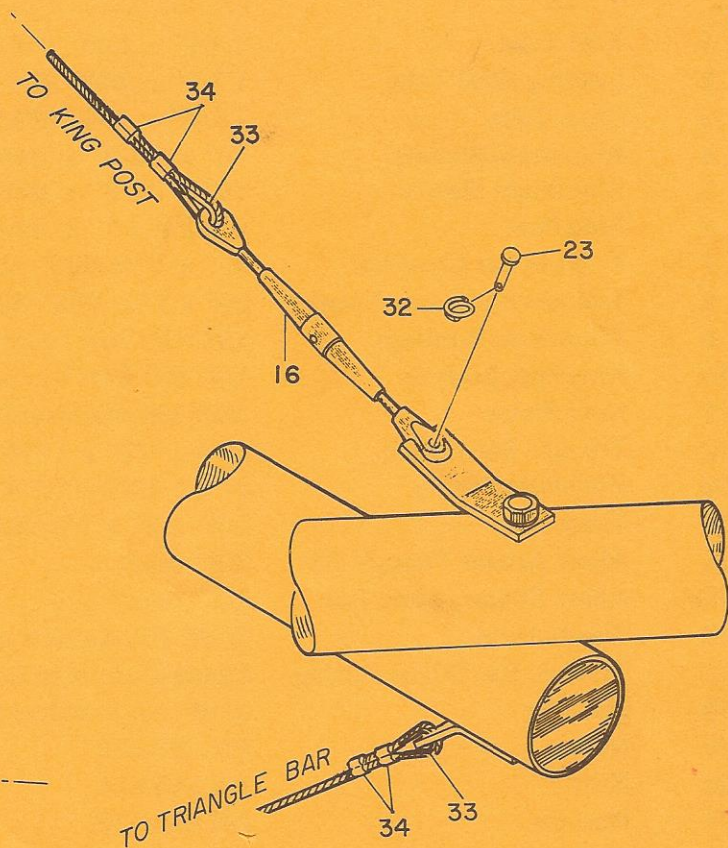
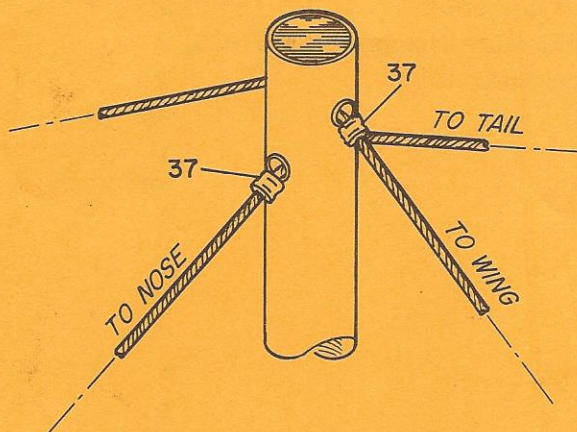
IS ATTACHED IN THE SAME MANNER AS SIDE WIRE. TURNBUCKLE SHOULD BE INSTALLED TO THE REAR. BE SURE KING POST IS IN AN UPRIGHT POSITION, PERPENDICULAR TO THE KEEL AND CROSS TUBE.

*NOTE: If Nico Stops are forgotten, they can be slit with a hacksaw & installed after king post wires are swaged.*



LEADING EDGE AND  
CROSS TUBE JUNCTION

THIS DRAWING ILLUSTRATES  
PROPER ASSEMBLY OF TURN-  
BUCKLE & TANG, AS WELL AS  
THEIR PROPER INSTALLATION.



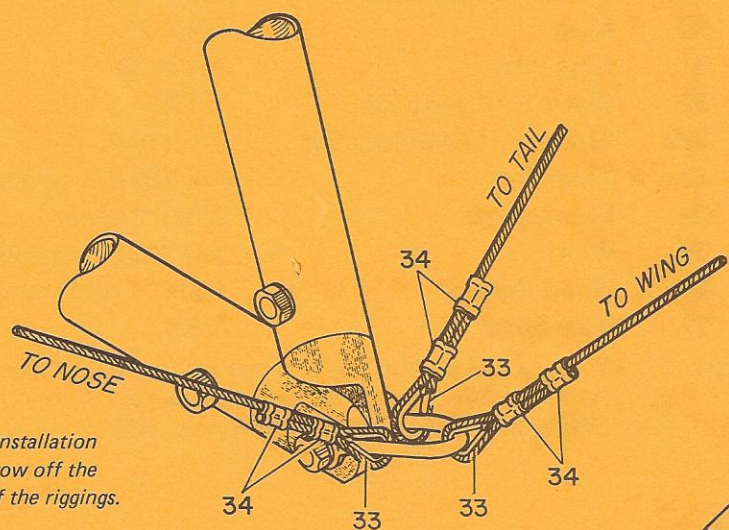
KING POST NICO STOPS

THESE STOPS MUST BE 1/4" FROM KING POST TUBE  
TO PREVENT ANY KINKING BETWEEN THE TUBE &  
STOP. IF YOU FORGET . . . THEY CAN BE SLIT  
WITH A HACKSAW & INSTALLED.

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TRIANGLE BAR ELBOW  
FITTING WIRE ASSEMBLY

THIS ILLUSTRATES PROPER  
INSTALLATION OF SHACKLE  
AND LOWER RIGGING WIRES.  
BE SURE THIMBLES ARE UN-  
TANGLED WHEN MEASURING  
WIRES.



*NOTE: The incorrect installation  
of just one wire can throw off the  
necessary fine tuning of the riggings.*

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No.	Part	Specifications	Quantity Required
1	Keel Tube	1 1/2" x .049" 6061 T-6 Alum.	1 ✓
2	Leading Edge Tube	1 1/2" x .049" 6061 T-6 Alum.	2 ✓
3	Cross Tube	1 1/2" x .049" 6061 T-6 Alum.	1 ✓
4	Aluminum Sleeves	12" x 1 5/8" x .049" 6061 T-6 Alum.	2 ✓
5	Aluminum Sleeves	18" x 1 5/8" x .049" 6061 T-6 Alum.	2 ✓
6	King Post	4 1/2 ft. x 1" x .049" 6061 T-6 Alum.	1
7	Triangle Bar Cross Bar	44" x 1" x .083" 6061 T-6 Alum.	1 ✓
8	Triangle Bar Down Tubes	60" x 1" x .083" 6061 T-6 Alum.	2 ✓
9	Aluminum Bushings	3/8" OD Soft Alum. or Copper	2 ft. ✓
10	King Post Bushing	1/4" OD Soft Alum. or Copper	6"
11	Nose Plates	.050 304 Stainless Steel	2 ✓
12	Triangle Bar Fitting	3" x 1 1/2" x 1 1/4" 6061 T-6 Alum. Channel	1
13	King Post Fitting	2" x 1 1/4" x 1 1/4" 6061 T-6 Alum. Channel	1
14	Tangs	3/4" x 2" x 1/8" Stainless Steel	10
15	Alum. Spacer Triangle Bar	3/8" thick	1
15a	Alum. Spacer, Long Tail	1/2" thick	1
16	Turnbuckles	3/16" Pin Aircraft or Marine	2
17	Triangle Bar Elbow Fitting	Eipper-Formance Custom Stainless Steel Fitting	2 ✓
18	Shackles	5/16" Pin Stainless Steel	2
19	Nuts	AN 363-428	15
20	Nuts	AN 363-524	1
21	Washers	AN 960-416	32
22	Washers	AN 960-516	4
23	Clevis Pins	3/16" x 1/2"	2
<u>Bolts</u>			
24	Triangle Bar Top	AN 4-34a	1
25	Triangle Bar Bottom	AN 4-27a	1
26	Triangle Bar Elbow Fitting	AN 4-14a	4
27	Elbow Fitting Shackle	AN 5-11 drilled	2
28	Nose & Short Tail	AN 4-22a	4
28a	Long Tail	AN 4-25a	1
29	Leading Edge at Cross Tube	AN 4-37a	2 ✓
29a	Center Keel & Cross Bar	AN 5-41a	1 ✓
30	Nose	AN 4-21a	1
31	King Post	AN 4-16a	1
32	Clevis Pin Safety Pin	1/16"	2
32a	Elbow Fitting Safety Pin	AN 416-2	2
33	Thimbles	AN 100-C3 or Marine Stainless Steel	16 - 2 ✓
34	Nico Sleeves	3/32" Copper	32 - 4 ✓
35	Wire	7x7 Marine Stainless Steel	100 ft. 11 ft ✓
36	Wood Dowell	1 3/8" Full Round	74" ✓
37	Nico Stops	3/32"	4

Notes: (1) All materials used are of aircraft quality and I highly recommend adhering to these standards.  
(2) The Flexi Flier, complete or in various kit forms, is available from Eipper-Formance, Inc.,  
Post Office Box 246, Lomita, California 90717 — the exclusive manufacturer.

## FIRST

YOUR ENTIRE FLEXI FLIER SHOULD BE BUILT AND RIGGED BEFORE YOU ATTEMPT TO INSTALL THE SAIL. \* THIS MAY SEEM TO BE EXTRA WORK WORK. BUT IT MUST BE DONE. ONCE INSTALLED, THE SAIL SHOULD NOT BE FLAT (TAUT). THE BILLOW IS ADDED TO GIVE YOUR FLEXI FLIER THE CONTROL AND STABILITY NEEDED FOR SAFE FLYING.

### DACRON SAIL

IF YOU CHOOSE TO UNDERTAKE THE TASK OF SEWING YOUR OWN SAIL, YOU SHOULD HAVE THE FOLLOWING EQUIPMENT.

A GOOD ZIG ZAG SEWING MACHINE.

A LARGE TABLE OR LOTS OF FLOOR SPACE.

A NO. 20 NEEDLE.

THE LARGE NEEDLE IS REQUIRED TO HANDLE THE HEAVY DACRON THREAD NEEDED TO INSURE A GOOD SAIL. A THREAD SIZE OF V-69 SHOULD BE USED. GROMMETS CAN BE INSTALLED AT YOUR LOCAL UPHOLSTERY SHOP.

WE HAVE LOOKED AT AND EXPERIMENTED WITH MANY TYPES OF FABRICS, AND WE CONCLUDE THAT 3 TO 4 OZ. STABILIZED DACRON IS THE BEST, CONSIDERING DURABILITY, POROSITY, AND STRETCH.

EACH SIDE OF THE SAIL IS LAYED OUT SEPARATELY ON THE SAME PATTERN TO GIVE UNIFORMITY. ALL EXPOSED SEAMS SHOULD BE SELVAGE EDGES OR CUT WITH A HOT IRON. A SIMPLE TWO-FOLD HEM ABOUT 1/2" WIDE IS RECOMMENDED ON THE TRAILING EDGES. HEAVY DACRON REINFORCING SHOULD BE USED ADDITIONALLY AT ALL STRESS POINTS (NOSE, TAIL, WINGTIPS AND WHERE GROMMETS ARE USED OR HOLES MADE). ALL SEAMS MUST BE DOUBLE- ZIG ZAG STITCHED.

CONCERNING BATTENS, IF YOUR SAIL IS SEWN CORRECTLY, YOU WILL NOT NEED THEM. A GOOD SAIL IS ACTUALLY HINDERED BY BATTENS. AND A SAIL NEEDING THEM IS NOT GIVING YOU MAXIMUM EFFICIENCY AND WILL REDUCE YOUR FLEXI FLIER'S PERFORMANCE.

SAIL FORMS, A DIVISION OF EIPPER-FORMANCE, INC., CREATES CUSTOM DACRON SAILS, AS EXPLAINED IN OUR CATALOGUE. CONSIDERING PRICE VERSUS EFFORT, ESPECIALLY IF YOU INTEND TO DO HIGH-PERFORMANCE FLYING, YOU CANNOT DO BETTER THAN TO ORDER A WING FROM THE PEOPLE WHO SEW FLEXI FLIER SAILS DAILY.

*\* The sail pattern shown on page 22 is for sailcloth only. A plastic wing must be installed differently, but I have decided not to give instruction in its use. I believe that your safety is worth more than the cost saving achieved by substituting plastic for fabric. Plastic is difficult to apply correctly, and, even if done properly, is good for only a short period of usage. Plastic deteriorates from use and from exposure to the sun, and becomes brittle near freezing temperatures. After hearing about a plastic wing shedding its trailing edge in a high speed dive, and after a friend has broken his back due to improper installation of a plastic wing, I feel I have no choice but to discourage the use of plastic. Let's look at it this way. You are constructing and will be flying an aircraft, not a toy. And plastic does not meet aircraft standards in my view.*

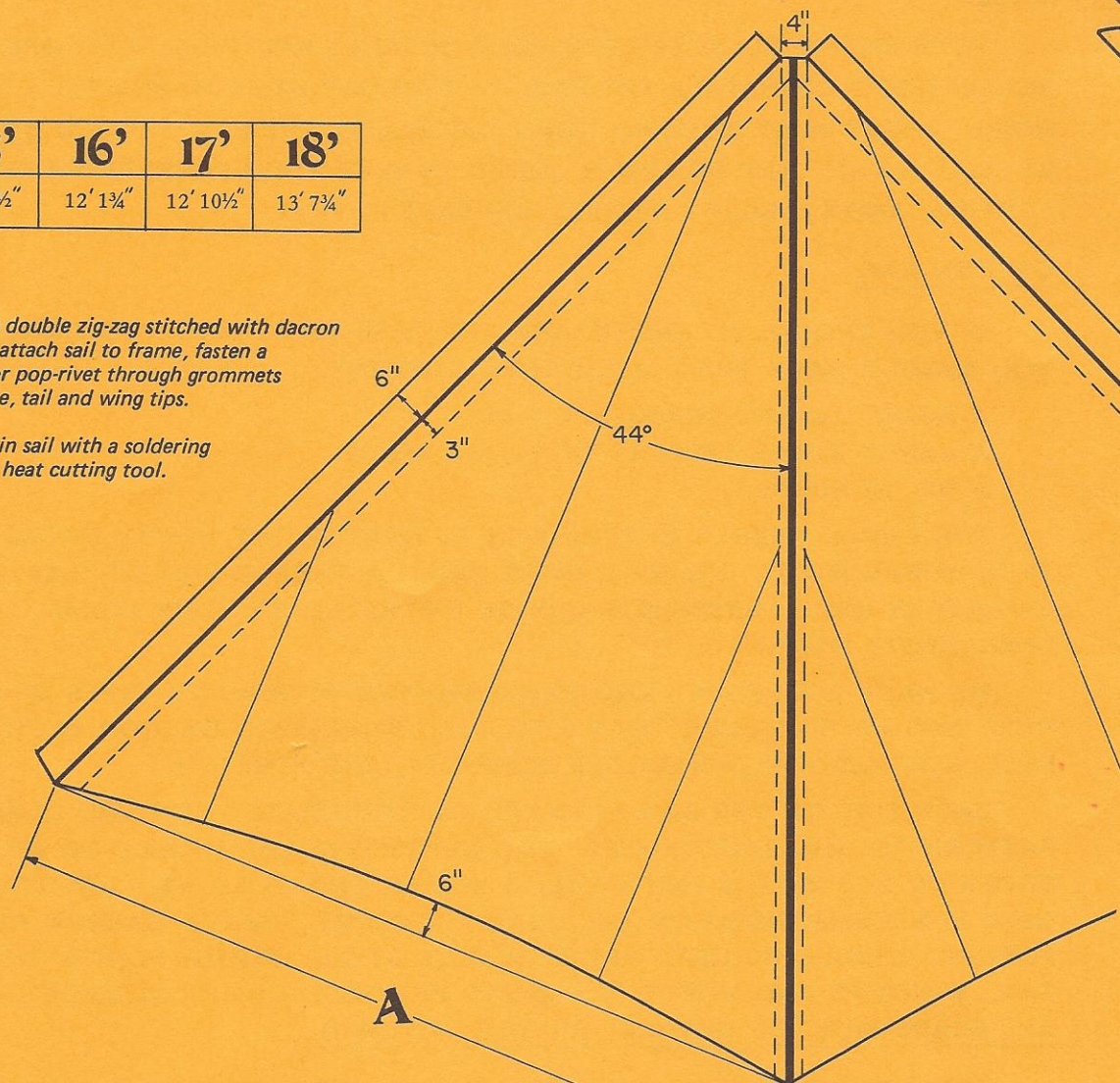
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	15'	16'	17'	18'
A	11' 4½"	12' 1¾"	12' 10½"	13' 7¾"

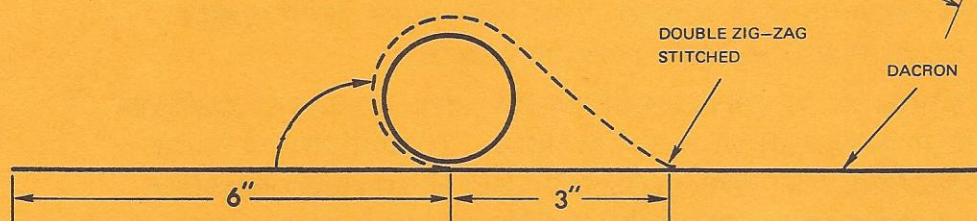
All seams are double zig-zag stitched with dacron thread. To attach sail to frame, fasten a small screw or pop-rivet through grommets on sail at nose, tail and wing tips.

Cut all holes in sail with a soldering iron or other heat cutting tool.

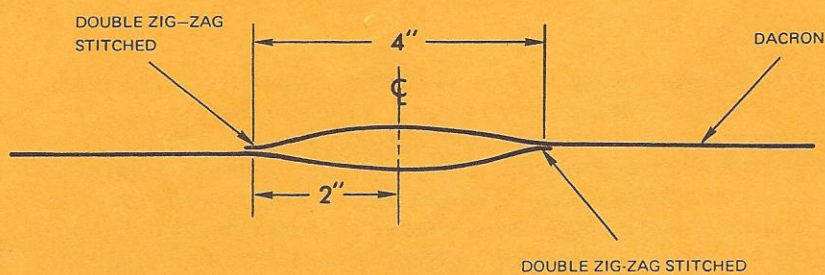
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#### LEADING EDGE POCKET

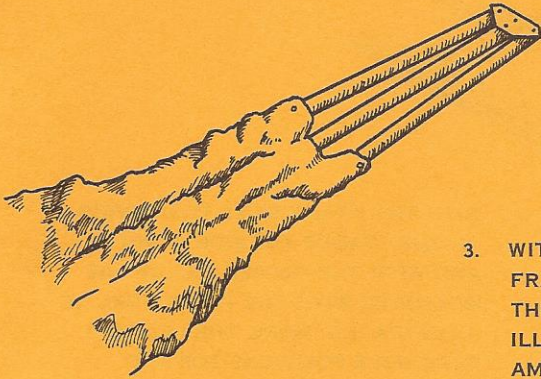


#### KEEL POCKET



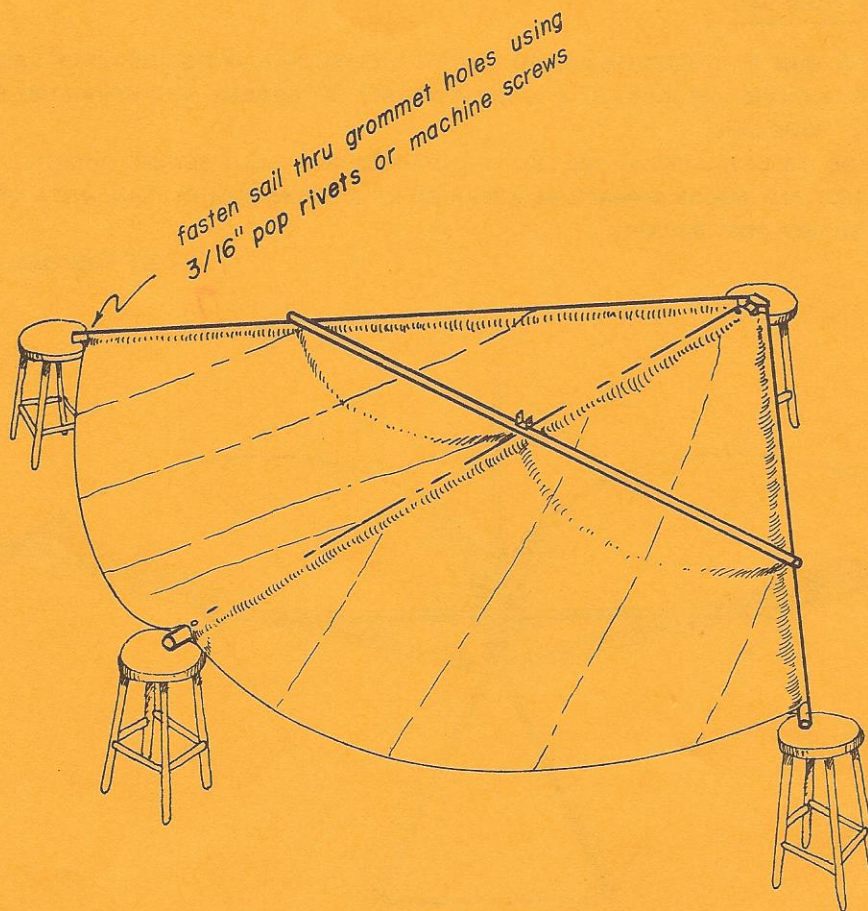
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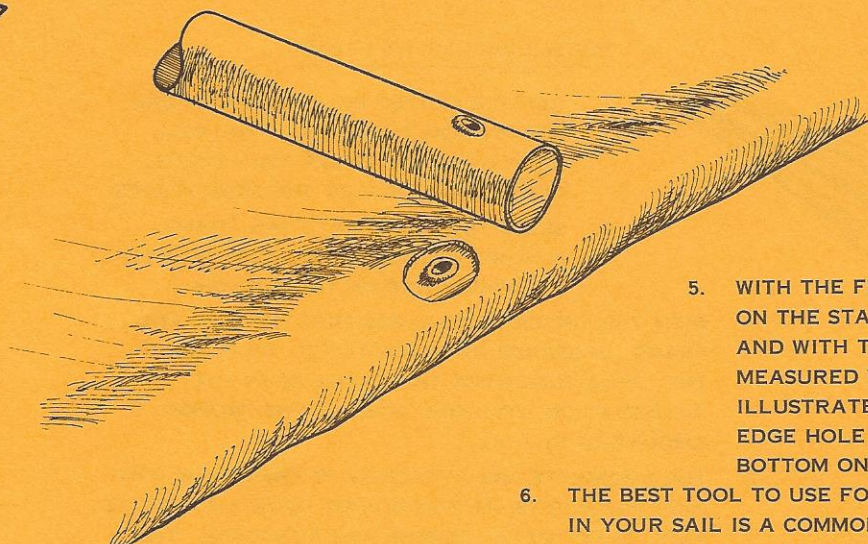
#### INSTALLING SAIL ON FRAME



1. REMOVE CENTER BOLT AND BOTH TAIL BOLTS FROM THE FRAME. YOU WILL THEN HAVE THE THREE MAIN TUBES CONNECTED ONLY BY THE NOSE PLATES.
2. SLIDE YOUR SAIL ONTO THE FRAME, MAKING SURE THAT THE KEEL POCKET GROMMETS ARE ON THE BOTTOM.
3. WITH THE TOP SIDE DOWN, POSITION THE SAIL AND FRAME ON STANDS AS ILLUSTRATED. BY PLACING THE CROSS TUBE OVER THE FRAME AS IN THE ILLUSTRATION, YOU WILL ACHIEVE THE PROPER AMOUNT OF BILLOW.
4. THE GROMMETS ARE ATTACHED TO THE FRAME WITH 3/16" POP RIVETS. IF YOU DO NOT HAVE A POP RIVET TOOL, SHEET METAL SCREWS ARE ADEQUATE. THE FIRST GROMMET TO BE ANCHORED IS AT THE KEEL

NOSE. BE SURE THAT THE POCKET IS CENTERED FROM SIDE TO SIDE. NEXT ANCHOR THE LEADING EDGE GROMMETS AT THE NOSE. THEN, AFTER PULLING OUT ANY WRINKLES, ATTACH THE KEEL TAIL GROMMET. THE LEADING EDGE POCKETS SHOULD BE SLIGHTLY STRETCHED AND ATTACHED AT THE TRAILING END. CARE SHOULD BE TAKEN TO ASSURE THAT THE SAIL COMES OFF THE LEADING EDGE TUBES AT THE PROPER BILLOW ANGLE BEFORE THE FINAL GROMMETS ARE FASTENED.





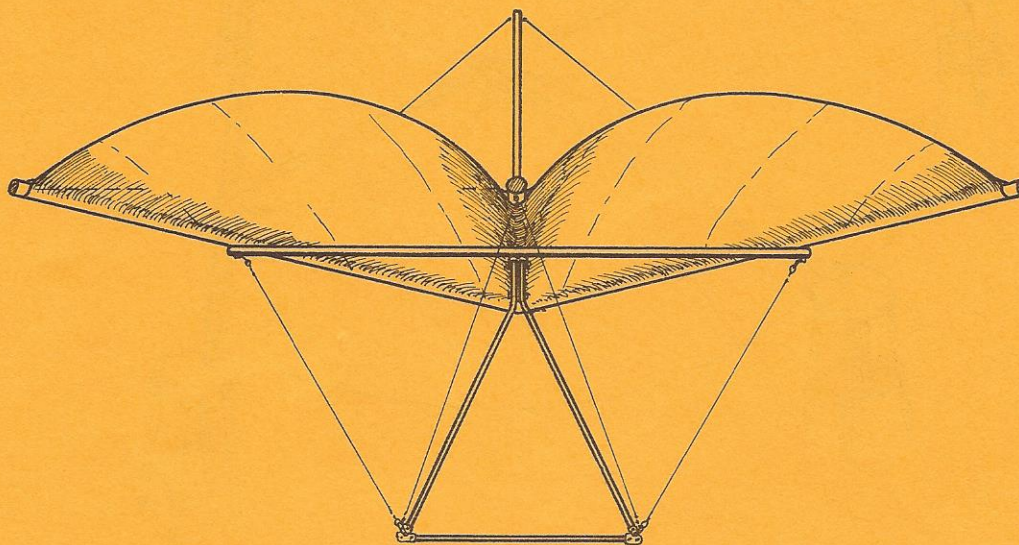
5. WITH THE FRAME STILL POSITIONED ON THE STANDS TOP SIDE DOWN AND WITH THE PROPER BILLOW AS MEASURED WITH THE CROSS TUBE AS ILLUSTRATED, MARK THE LEADING EDGE HOLE POSITIONS TOP AND BOTTOM ON THE SAIL.
6. THE BEST TOOL TO USE FOR CUTTING THE BOLT HOLES IN YOUR SAIL IS A COMMON WOOD BURNING TOOL WITH A FLAT BLADE. AN ELECTRIC SOLDERING IRON OR JUST A HEATED BUTTER KNIFE WILL ALSO SUFFICE. THE HOLES SHOULD BE CUT TO APPROXIMATELY THE DIAMETER OF A QUARTER.
7. FINALLY THE CENTER HOLE IS CUT AND THE KITE IS READY TO REASSEMBLE.

#### CARE OF YOUR SAIL

A DACRON SAIL, IF IT BECOMES SOILED, CAN BE WASHED IN A LARGE CAPACITY LAUNDROMAT WASHING MACHINE. WE SUGGEST A BIODEGRADABLE DETERGENT, AND NEVER USE BLEACH TO CLEAN YOUR SAIL.

TEARS AND HOLES IN SOME CASES CAN BE REPAIRED ON A HOME SEWING MACHINE. HOWEVER, WE SUGGEST ANY MAJOR DAMAGE BE REPAIRED BY A SAILMAKER IN YOUR AREA OR RETURNED TO US FOR LOW-COST REPAIRS.

- FLY FOR FUN, SAILFORMS

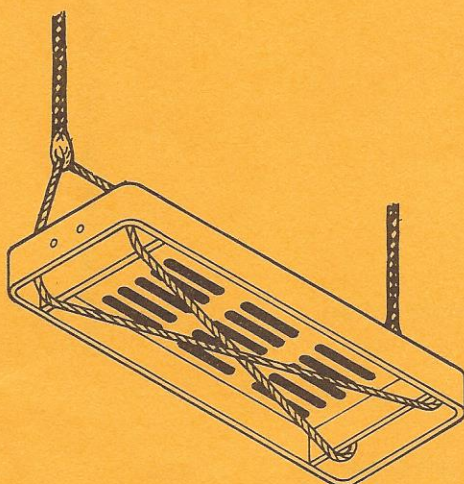
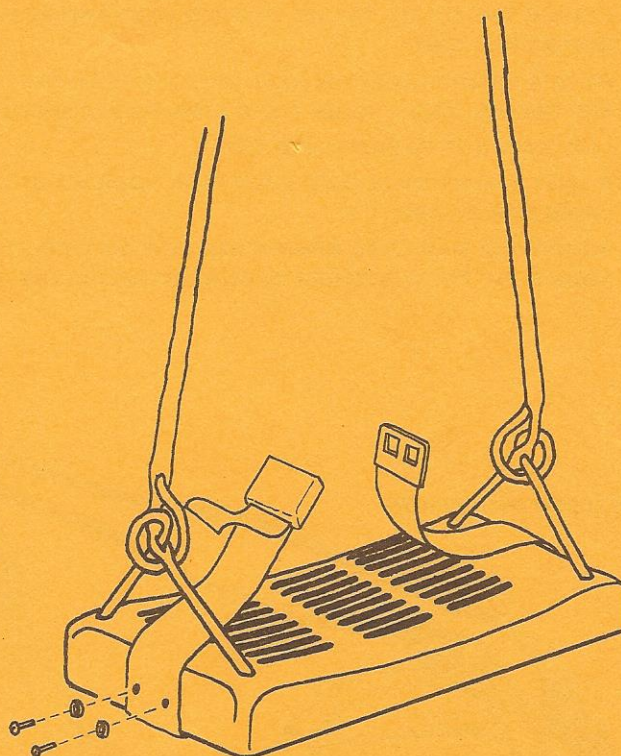
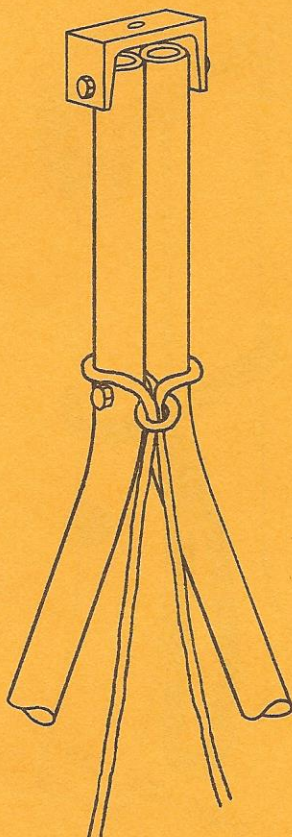


#### THE SWING SEAT

USE A CHILD'S PLASTIC SWING SEAT, OR A VERY STRONG WOOD SUBSTITUTE. LOOP A SEAT BELT UNDERNEATH AND AROUND THE SEAT AND SECURE AT THE SIDES WITH SMALL MACHINE SCREWS OR POP RIVETS.

FOR THE SWING LINE, USE 3/8" BRAIDED POLYPROPELENE ROPE AND SPLICE AS SHOWN USING A "FID". IF YOU CAN'T FIND A FID, TAPER THE ENDS OF THE ROPE BY MELTING WITH A MATCH, THEN COVER WITH TAPE.

RUN THE ROPE THROUGH THE TOP OF ONE SIDE, THEN PASS COMPLETELY UNDER THE SEAT AND COME UP THROUGH THE BOTTOM OF THE OPPOSITE SIDE. THIS MAKES AN EXTREMELY STRONG SEAT, HAVING ONE CONTINUOUS LOOP (NO KNOTS).

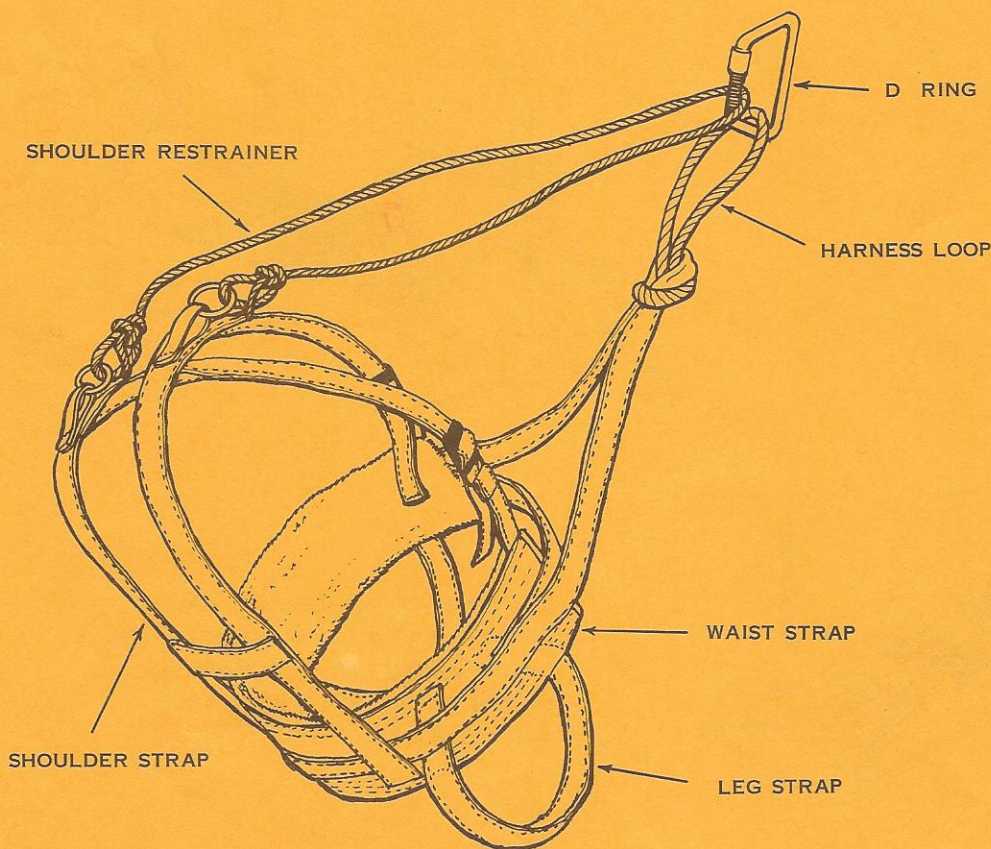
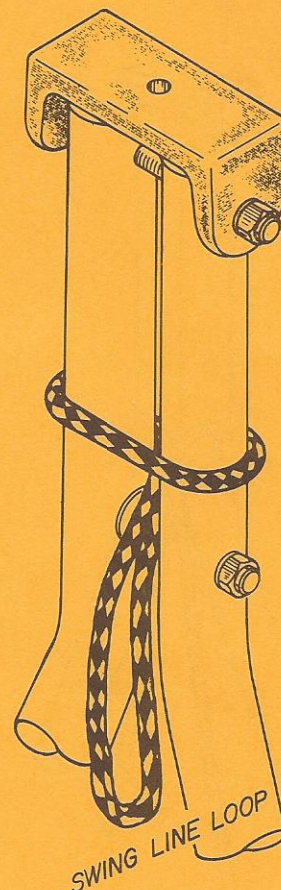


THE FINISHED SEAT SHOULD HANG APPROXIMATELY 12 - 14 INCHES BELOW THE TRIANGLE BAR (ALLOWING THE PILOT'S THIGHS TO BE JUST UNDER THE CROSS BAR).

## PRONE HARNESS

PICTURED HERE IS THE PRONE HARNESS, AN ORIGINAL EIPPER-FORMANCE SPECIALTY ITEM. IF YOU DECIDE TO FLY IN THIS MANNER, ADJUST THE PRONE HARNESS BY FIRST PUTTING IT ON.

1. STEP THROUGH THE LEG STRAPS AND BRING THE SHOULDER STRAPS INTO POSITION.
2. ADJUST THE SHOULDER STRAPS UNTIL SNUG.
3. PULL THE WAIST STRAPS TOGETHER UNTIL THEY ARE SNUG AND SECURE BY PRESSING THE VELCRO STRIPS TOGETHER.
4. ATTACH TO THE HARNESS EITHER A POLYPROPELENE CONTINUOUS LOOP (USE METHOD DESCRIBED FOR THE SWING SEAT CONTINUOUS LINE) OR A 5/16" DACRON LINE TIED INTO A LOOP WITH A BOWLINE KNOT.
5. ATTACH THE SWINGLINE LOOP TO THE TRIANGLE BAR APEX AS ILLUSTRATED.
6. ATTACH THE D RING TO THE HARNESS LOOP AND SHOULDER RESTRAINER LINE.
7. HAVE A FRIEND HOLD THE KEEL OF YOUR FLEXI FLIER LEVEL WITH THE GROUND AND ATTACH THE D RING TO THE SWINGLINE LOOP.
8. LAY DOWN THE HARNESS AND TEST.
9. ADJUST THE HARNESS LOOP SUCH THAT YOUR WAIST CLEARS THE CROSS BAR BY ABOUT 2".
10. ADJUST THE SHOULDER RESTRAINER LINE SO THAT IT PREVENTS YOUR BODY FROM PITCHING DOWNWARD BELOW THE CROSS BAR.



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### POST-ASSEMBLY (WALK AROUND) CHECK LIST

BOLTS:	count them (20 with standard triangle bar)
NUTS:	tight to end of thread, allowing no play in bolts along axis
TURNBUCKLES:	safety pin in clevis pin
WIRES:	taut — check for worn or broken strands
TUBES:	check for bends and depressions
SAIL:	check for trailing edge rivets ripping out check for pinching between cross and leading-edge tubes
KINGPOST:	up straight
NOSEPLATES:	flat
SWING LINE:	adjusted to individual pilot
PRONE HARNESS:	tight, velcro strips connected attach to swing line with "D" ring
or	
SWING SEAT:	seat located below buttocks seat belt tight
HELMET:	on forward straps secured tight
WIND:	note direction, speed, gustiness — top and bottom of hill remember wind gradient
CLEAR FOR:	spectators, other hang gliders, problems in landing area

### PRE-FLIGHT (LAST MINUTE) CHECK LIST

HELMET  
SWING LINE  
WIND  
CLEAR FLIGHT PATH

-----

Suggestion: Use the buddy system. Have him check your glider and harness, and you do the same for him.

## FLYING IS THE PAYOFF

Now you've built it, whatcha gonna do with it?! Fly, of course, and here's how: First, some basic rules:

1. Never fly higher than you care to fall — find a gentle slope to learn on.
2. Never fly in fast or gusty winds — a steady 10 MPH breeze is about right.
3. Keep the nose into the wind — for setting up, taking off, landing, carrying, and disassembling.

Try to find a slope about 50 feet high with a shallow angle of around 30°. At best, your Flexi Flier descends one foot for every four feet of forward travel. The flight path should be clear of obstacles, including rocks, gopher holes, trees and people (spectators are fragile). Ideally the slope should be sandy or grassy. If not, gloves, pants and shoes or boots are a necessity, and are a good idea anywhere. If your flying area is covered with hard dirt, gravel or some other abrasive material, you might want to plan ahead and add a knuckle bar to the triangle bar, as described in these plans. A helmet should be worn for all flying. Bent and broken tubes on beginners' kites attest to the strength of the human head, but take it easy and try to find a comfortable helmet. It should, however, be one which leaves the ears free to hear the sail, the wind, and your helpers. The Bell "Soaring Helmet" is designed specifically for hang gliding, but some bicycle racing helmets will also do the job.

Assemble your Flexi Flier with it facing directly into the wind, nose down. When you think everything has been put together, review the Post-Assembly Check List given in the plans. If you have a wind meter, check to see that the wind is not more than 10 MPH, and that it is not gusting, like from 5 average to 10, or 10 average to 17, etc. If you had trouble with the wind knocking the Flexi Flier around while you were assembling it, wait for calmer conditions. Winds of 15 MPH are hard on beginners learning ground handling, and anything faster is positively dangerous for any beginner — on the ground or in the air. Avoid the urge to say, "What the hell, let's try it anyway."

Now you're ready to fly. Again, make sure that your Flexi Flier is pointed into the wind. Take a roll call of the butterflies in your stomach, and if all present and accounted for, check to make sure that your helmet is on correctly and your seat belt is fastened or harness attached to the swing-line, as the case may be. Put one foot on the triangle bar and pull on the swingline, rotating the kite until the keel is almost parallel with the ground. If there is a wind, it should neither be pushing down on the sail nor filling it. The sail should be either hanging loosely or flapping lightly — this is the neutral position, or angle of attack. Keeping the sail in neutral, grab the triangle bar in the way easiest for you and lift the kite until you can rest one or both sides of the triangle bar on your shoulders. At this point, the cross bar should be at about waist level or just below, and your hands should be spread wide on either side of the cross bar.

It helps to have a piece of yarn or strip of cloth tied to one of the front flying wires, and with this you can make sure that you are pointed straight into the wind. With all people out of the way, start a hard run down the slope, keeping the sail in the neutral position until speed builds up. Slowly push away from the triangle bar until the sail fills (becomes quiet) and you are lifted off of the ground. (With prone harness, bring your legs up now, level with your body, a la Superman). Most likely at first you will either push away too soon or too far, resulting in a stall (nose too high) or you will not push back soon or far enough, resulting in a nose-in. There is a happy medium and it takes at least two or three attempts to begin to get the feel of it.

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Once airborne, you will find that you usually have to pull toward the triangle bar slightly to build up flying speed. On a proper training slope you will be concerned immediately with landing. Keep your flying speed until over the landing area, even pulling forward slightly again to insure having enough speed. To land, push your body back gradually and smoothly, bringing the Flexi Flier's nose up (flaring) into a gentle, low-altitude stall. This reduces your ground speed to zero, at which time you pull your body forward to land on your feet. (With prone harness, drop your legs and stand up in the harness.)

Upon landing, immediately drop the nose to the ground, facing directly into the wind, and disconnect your seat belt or swing line. Carry the Flexi Flier back up the hill with the nose facing into the wind (down the hill). One person can usually do this best by carrying the triangle bar on his shoulders from the front side. The pilot should not carry it while still attached, in case it gets blown over.

Now about turning and the "why" of weight shift:

The only control used or needed with the Flexi Flier is pilot weight shifting. Moving your body changes the center of gravity in relation to the wing's center of pressure, resulting in a changed glide path. Think of your body as being similar to the control stick in an airplane:

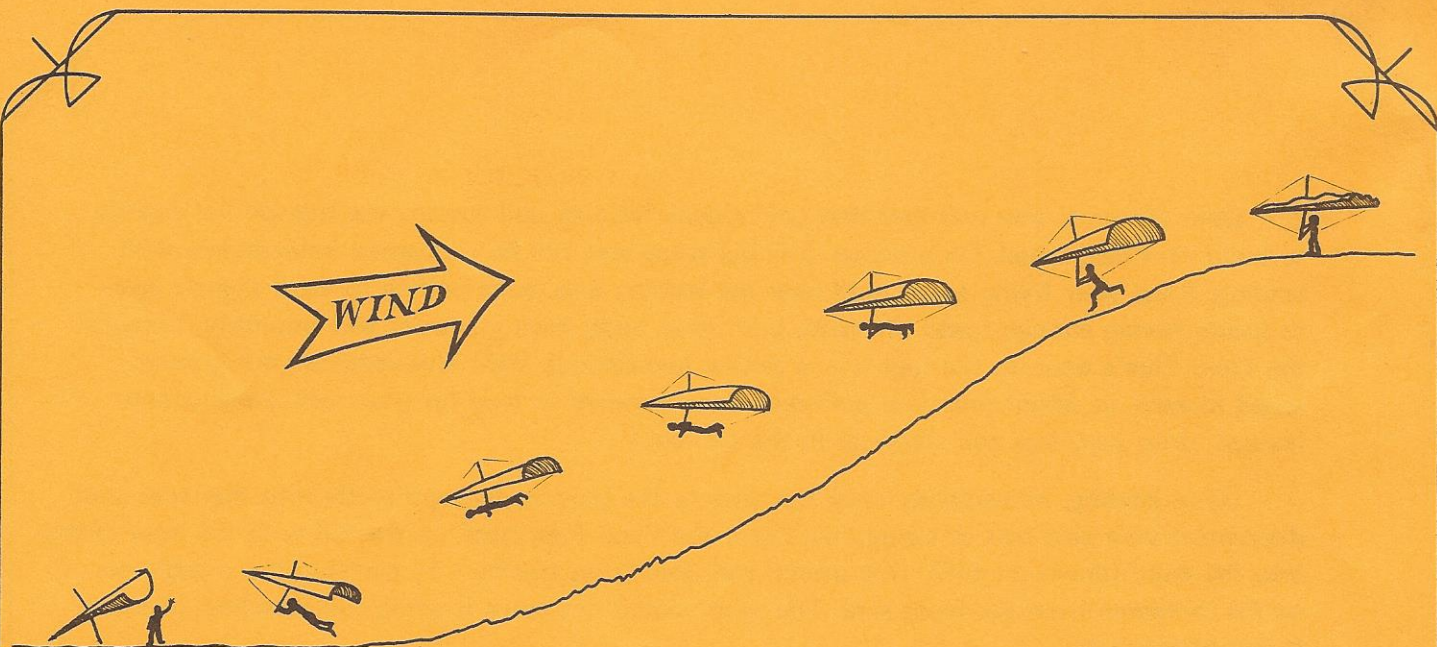
Control stick forward / body forward	—	nose down
Control stick back / body back	—	nose up
Control stick left / body left	—	left turn
Control stick right / body right	—	right turn

With a swingseat you pull your body to either side. With a prone harness you swing your body in an arc about the triangle bar. You most likely will not do much turning until you go on to higher hills, although you will sometimes need to make gentle corrections to keep your Flexi Flier flying into the wind. You rarely need to make radical control movements, and with any movements you should return to the normal body position immediately. Try to make smooth, subtle movements, and avoid overcontrolling.

Unusual take-off situations:

With little or no wind on a proper training slope, it sometimes becomes nearly impossible for a beginner to get up enough speed to launch. An experienced person pushing the keel can be a real help, but an inexperienced person can be disastrous. The idea is to help as much as possible, giving a steady push but not lowering or raising the keel. Changing the angle of the keel causes the pilot to make control movements mistaking the pusher's motions for reactions of the Flexi Flier. Try to learn to launch without a pusher as in more advanced flying you will not always be able to use one, and even experienced pushers can make mistakes.

Winds don't always blow straight up slopes, hence you cannot always take off running straight down a slope. Sometimes you may have to run at an angle, and you should avoid the tendency to tilt the kite sideways to stay level with the hill — keep your Flexi Flier level with the horizon. Also, avoid the tendency to turn your run to straight down the slope. Either mistake usually results in an upside-down Flexi Flier.



KEEP  
NOSE  
POINTED  
INTO  
WIND

Now what did he say?

1. Hook up and rotate wing into neutral angle of attack.
2. Lift triangle bar to shoulders, holding neutral angle.
3. Spread hands wide, balancing triangle bar on shoulders.
4. Start hard run, then push body back until sail fills.
5. Airborne, pull body forward to build flying speed.
6. Adjust body position for steady glide — no porpoising.
7. Near landing, pull forward to insure good speed.
8. To land, push body back to eliminate ground speed.
9. Pull body forward to land on feet from stall.
10. Put nose down on ground and unhook immediately.

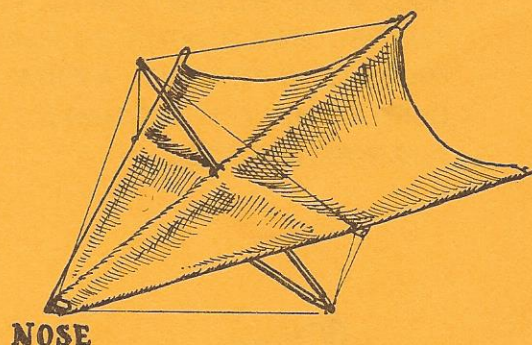
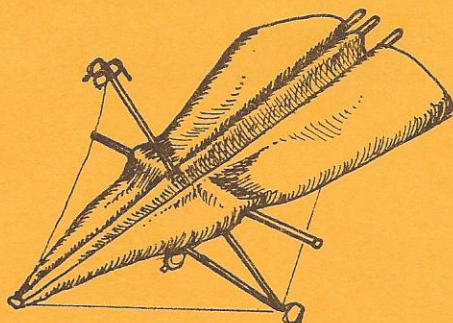
Now go try it again.

Practice makes perfect !

## ASSEMBLY, DISASSEMBLY AND STORAGE

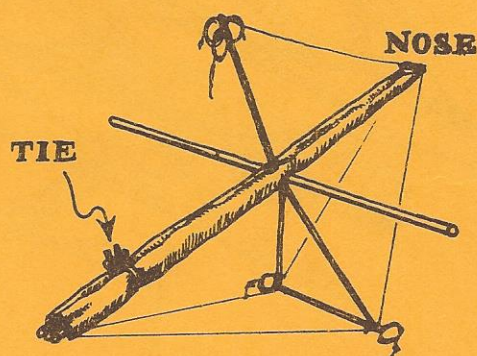
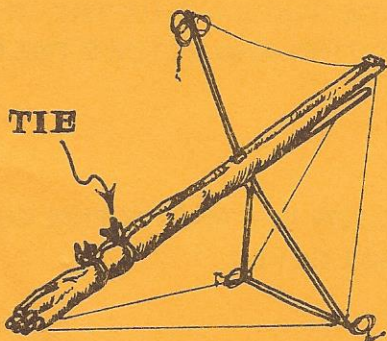
FOR DESCRIPTION PURPOSES, THE DISASSEMBLY PROCEDURES IS EXPLAINED FIRST

1. WITH THE KITE FACING DIRECTLY INTO THE WIND AND THE NOSE DOWN, LOOSEN THE SIDE KINGPOST WIRE TURNBUCKLE. REMOVE THE LEADING EDGE CROSS TUBE BOLTS. IF THE WIND IS BLOWING VERY HARD, BE CERTAIN TO HAVE SOMEONE HELP BRACE THE CROSS TUBE UNTIL THE LEADING EDGES CAN BE SWUNG IN TO THE KEEL.



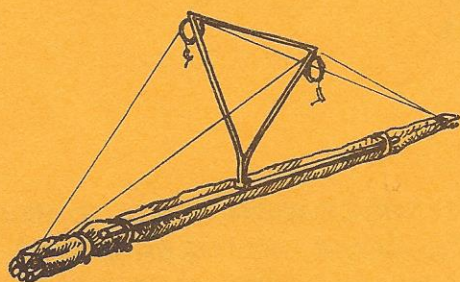
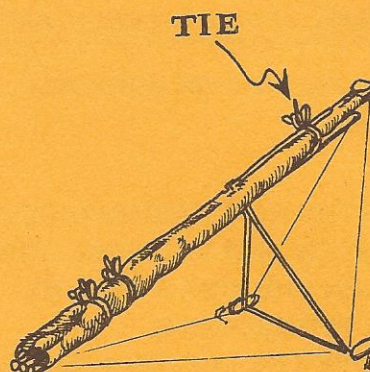
2. SWING IN THE LEADING EDGES TO MEET THE KEEL, DOUBLING THE SAIL OVER ONCE AS ILLUSTRATED. THIS IS BEST DONE WITH TWO PEOPLE SIMULTANEOUSLY SO THAT THE WIND DOES NOT BLOW THE KITE OVER ONTO ONE SIDE.

3. ONCE THE LEADING EDGES HAVE BEEN FOLDED, THE FRAME SHOULD BE TILTED BACK TO REST ON THE TAIL AND THE SAIL FURLED AS ILLUSTRATED. IF THE LEADING EDGES HAVE BEEN SWUNG IN CORRECTLY, THE SAIL WILL PROVIDE A NATURAL POCKET INTO WHICH TO TUCK THE FURLS. AFTER THE FURLS HAVE BEEN TUCKED IN, A TIE SHOULD BE USED TO HOLD THEM IN PLACE.

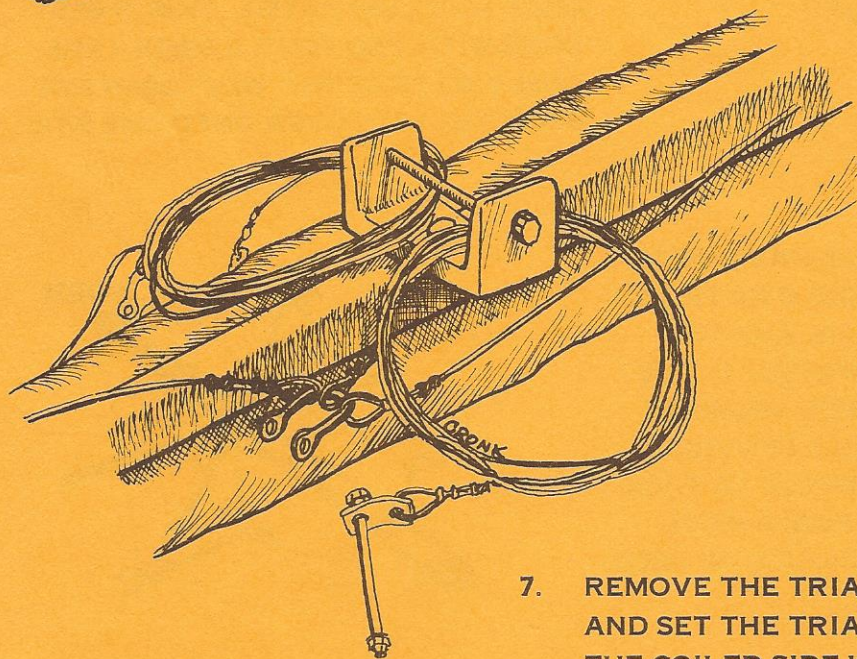


4. THE CROSS TUBE IS SWUNG IN TO ALIGN WITH THE KEEL, AND SECURED WITH A TIE.

5. UNDO THE REMAINING TURNBUCKLE AND SWING THE KINGPOST FORWARD TO MEET THE KEEL. NEATLY COIL THE REAR KING POST WIRE. BE CERTAIN TO TIGHTEN THE TURNBUCKLE BARREL SO THAT IT WILL NOT VIBRATE IN TRANSIT. A FINAL TIE IS NOW USED TO HOLD THE KINGPOST RIGID AGAINST THE KEEL.



6. SET THE FRAME UPSIDE DOWN ON THE GROUND, NEATLY COIL THE SIDE FLYING WIRES AND REMOVE THE SHACKLE BOLTS.



7. REMOVE THE TRIANGLE BAR FITTING BOLT AND SET THE TRIANGLE BAR ASIDE. PLACE THE COILED SIDE WIRES WITHIN THE TRIANGLE BAR FITTING AND RETURN THE BOLT

8. NOW, PLACE YOUR DISASSEMBLED FLEXI FLIER IN A PROTECTIVE COVER, SUCH AS THE SAIL FORMS ACRILAN STORAGE COVER.

## ASSEMBLY

1. REMOVE THE KITE FROM THE STORAGE BAG AND PLACE ON THE GROUND, WITH THE KING POST FITTING DOWN, AND THE NOSE POINTED INTO THE WIND.
2. REMOVE THE TRIANGLE BAR CONNECTING BOLT AND UNDO THE FLYING WIRES. MAKE CERTAIN THAT NONE OF THE THIMBLES ARE TWISTED IN THEIR TANGS.
3. BOLT THE TRIANGLE BAR TO THE FRAME AT THE FITTING PROVIDED FOR IT AND TIGHTEN THE NUT DOWN.
4. ATTACH THE SHACKLES WITH FLYING WIRES TO THE TRIANGLE BAR. MAKE SURE THAT THE SHACKLES ARE LOCKED INTO PLACE AT THE SAME ANGLES.
5. TURN THE KITE UPRIGHT, RESTING IT ON THE TRIANGLE BAR BASE AND THE NOSE.
6. REMOVE ALL OF THE TIES EXCEPT THE FINAL TIE AT THE REAR THAT HOLDS THE FURLED SAIL TOGETHER, SWING OUT THE CROSS TUBE, THEN REMOVE THE FURL TIE.
7. UNCOIL THE SIDE FLYING WIRES, THE KING POST WIRES AND LOOSEN THE NUTS AND TURNBUCKLES.
8. SWING THE KING POST UPRIGHT, ATTACH THE WIRE AT THE TAIL AND TIGHTEN THE TURNBUCKLE UNTIL THE WIRES ARE TAUT.
9. SWING THE LEADING EDGES OUT, BOLT THE FLYING WIRES AND KING POST WIRES INTO PLACE. THIS STEP IS BEST DONE WITH TWO PERSONS, IF THE WIND IS BLOWING VERY HARD. BE CERTAIN THAT THE NOSE IS POINTED DIRECTLY INTO THE WIND AND THE CROSS TUBE IS BRACED UNTIL THE KING POST WIRES CAN SUPPORT IT AGAINST THE WIND.
10. TIGHTEN THE FINAL TURNBUCKLE UNTIL THE SIDE WIRES ARE TAUT.
11. MAKE A FINAL CHECK ON THE NUTS, BOLTS, SUSPENSION LINES, AND EVERYTHING IN GENERAL. YOUR FLEXI FLIER IS NOW READY TO FLY.

## ERRATA

*This errata sheet applies only to pages dated 4 - 23 - 73 in the lower lefthand corner.*

<u>PAGE</u>	<u>CHANGE</u>
4.5	Pagagraph 4, first sentence: scratch out "... TO HOLE MEASUREMENT SPECIFIED."
4.5	Make sure to read page 4.6 before proceeding with 4.5. In general it is a good idea to read and be familiar with the plans throughout before beginning construction.
4.6	Under Main Tube Lengths, add: 4. TUBES SHOULD BE OBTAINED IN FULL LENGTHS RATHER THAN SPLICING. WE HAVE NOT FOUND ANY SATISFACTORY METHOD OF SPLICING BECAUSE NO MATTER HOW WELL DONE IT CREATES AN UNDESIRABLE STRESS POINT. TRANSLATED, THAT MEANS THREE UNDESIRABLE STRESS POINTS ON YOUR FLEXI FLIER IF YOU DO NOT USE TUBING OF THE PROPER LENGTH. IF THIS IS YOUR CASE, THEN WE SUGGEST THAT YOU CONSULT YOUR SUPPLIER AS TO THE METHOD HE RECOMMENDS FOR SAFE SPLICING.
4.12	Change "9" (just above "KEEL BOOM") to "9a".
4.14	For the knuckle bar, use 3/4" of 6061 T-6 Schedule 40 pipe.
4.16	First paragraph, change "... TO <u>CORM</u> A TIGHT EYE ..." to "... TO FORM A TIGHT EYE. ..."
4.20	No. 6 should read, 4 ft. x 1" x .049" 6061 T-6 Alum. No. 7 should read, 39 3/4" x 1" x .083" 6061 T-6 Alum. Add 9a Bushing 7/16" OD Soft Alum. or Copper 6" No. 17 should read, Eipper-Formance Custom 2024 T-3 Alum. Fitting.
4.24	Under Care of Your Sail, add: THE CROSS TUBE SHOULD BE ANODIZED OR COVERED ON TOP WITH TAPE WHERE CONTACT IS MADE WITH THE SAIL AT REST. OTHERWISE, OXIDATION WILL STAIN A BLACK STRIPE ON THE SAIL.