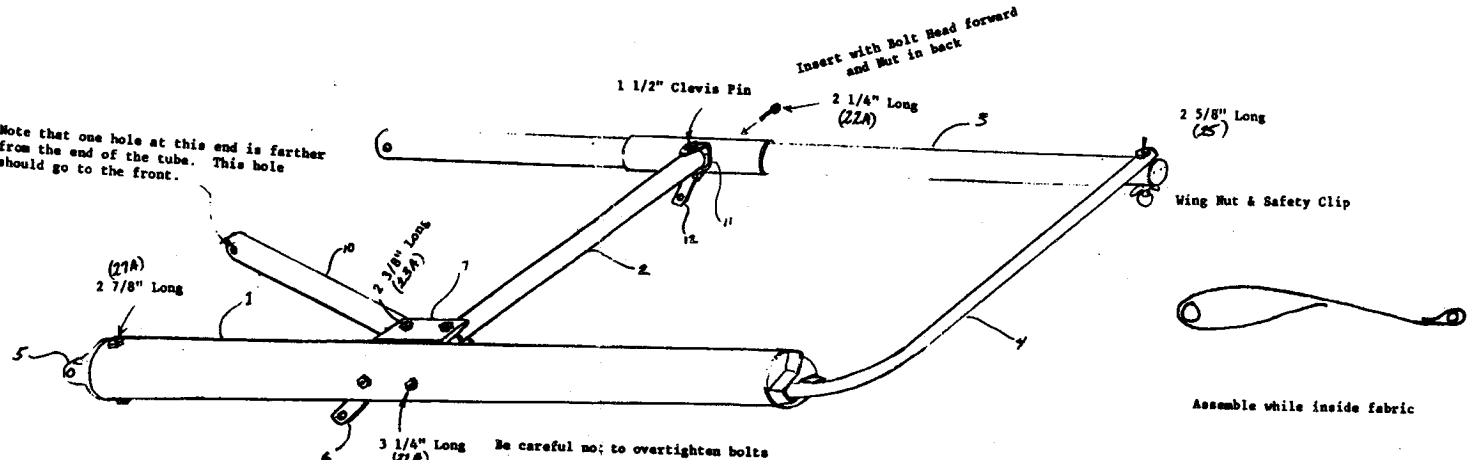


Note that one hole at this end is farther from the end of the tube. This hole should go to the front.



Be careful not to overtighten bolts



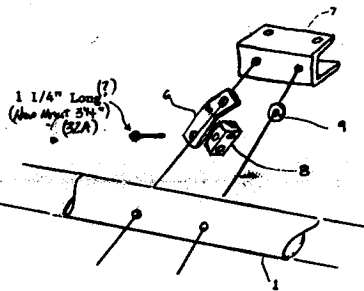
Assemble while inside fabric

ITEM DESCRIPTION

1. Leading Edge
2. Compression Strut, 62 1/4" Long
3. Trailing Edge
4. Wing Tip
5. Leading Edge Root Fitting
6. Front Wing Tang
7. Big Bracket
8. Strut Attach Block \*
9. Plastic Washer
10. Thrust Drag Spar, 88 1/2" Long
11. 1" Bracket
12. Rear Wing Tang

\* Applies only to planes with teardrop strut.

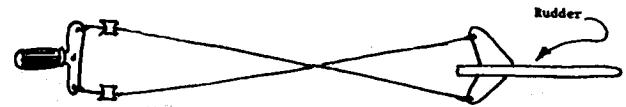
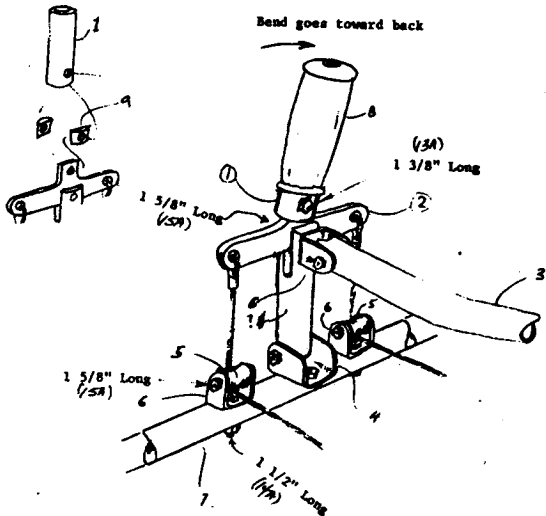
WING ASSEMBLY



ITEM DESCRIPTION

1. Control Stick
2. Bellcrank/Cable Assembly
3. Elevator Pushrod
4. Lower Control Arm Bracket
5. Control Pulley
6. 1" Bracket
7. Axle
8. Band Grip
9. Control Stick Spacers

CONTROL SYSTEM

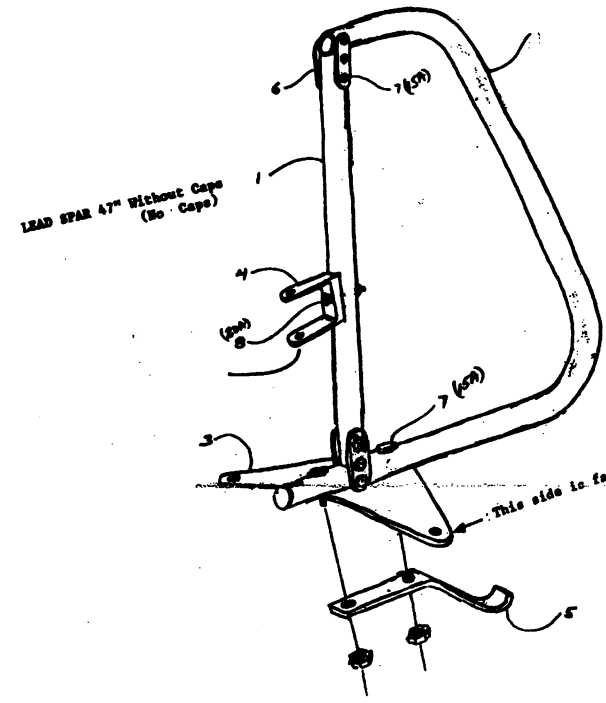
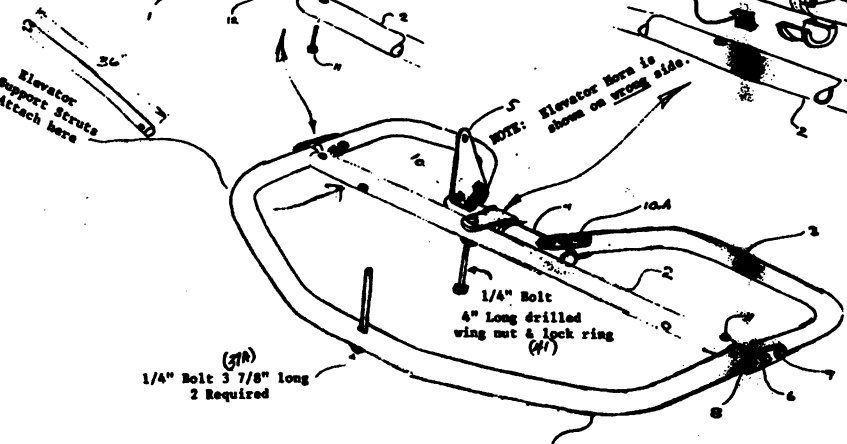


Cross Rudder Cables when attached to Rudder Horn

END HINGE DETAIL

CENTER HINGE DETAIL

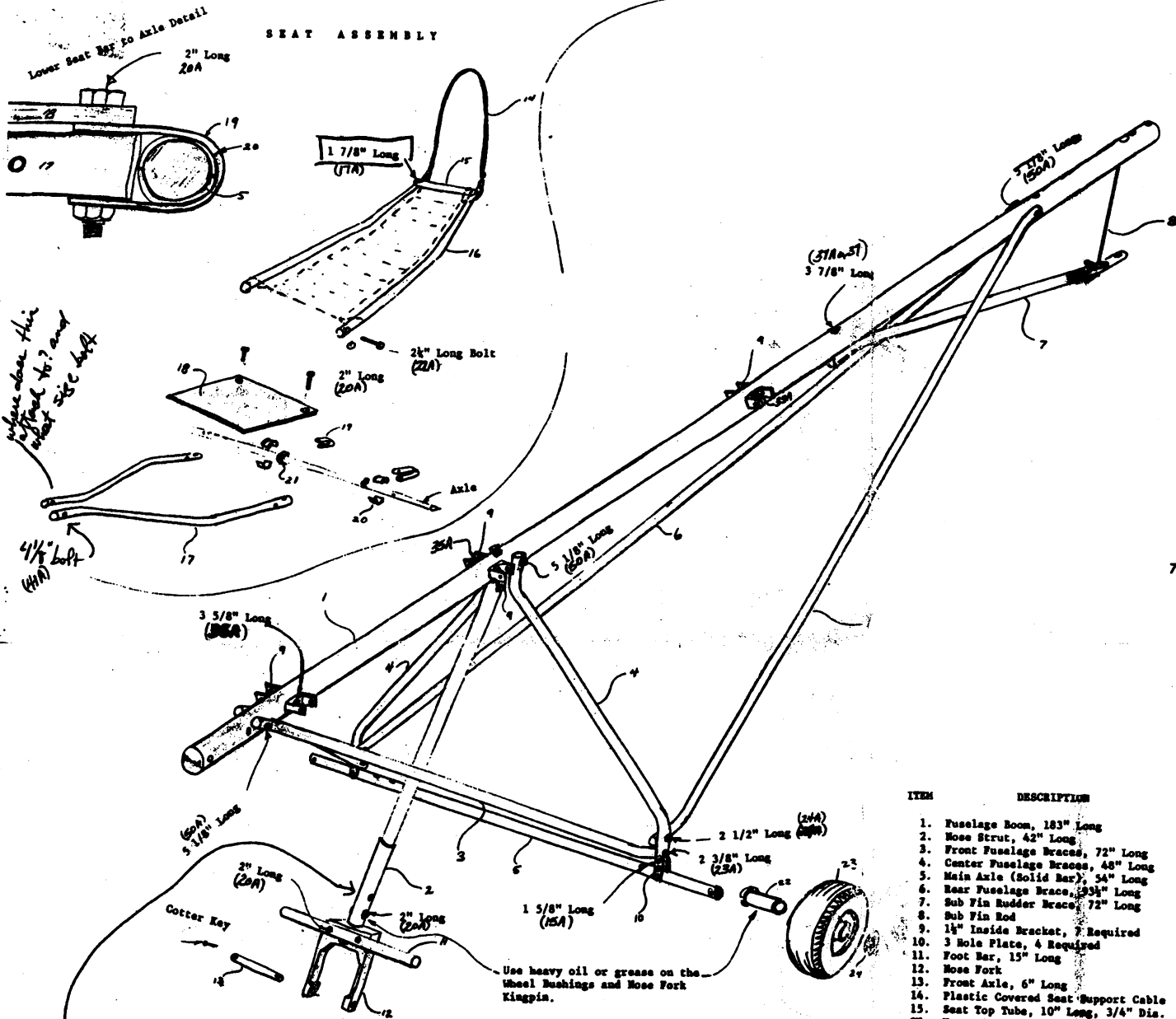
ITEM	DESCRIPTION
1.	Rudder Lead Spar, 47" Long
2.	Rudder Trailing Edge
3.	Rudder Control Horn
4.	Rudder Hinge, 2 3/4" Inside Diameter
5.	Ball Stud
6.	3 Hole Plate, 3 Required
7.	4" Bolt, 1 3/8" Long, 8 Required (20)
8.	4" Bolt, 2" Long, 1 Required (20)



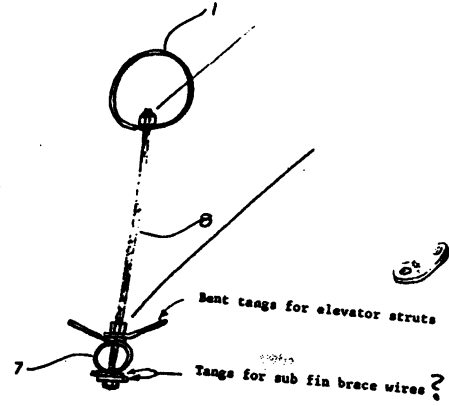
ITEM	DESCRIPTION
1.	Elevator Leading Edge
2.	Elevator Spar, 94" long
3.	Elevator Trailing Edge, 2 Required
4.	Elevator Torque Tube
5.	Elevator Control Horn
6.	3 Hole Plate, 3 Required
7.	Hinge Strap
8.	Elevator Hinge Pin
9.	1/2" Bolt 1 5/8" long, 4 Required (20)
10.	1/2" Bolt 1 1/2" long, 1 Required (20)
10.A	1/2" Bolt 1 5/8" long, 6 Required (20)
11.	Small #4 Bolt 1 1/4" long or Clevis Pin of equal length, 2 Required
12.	Elevator Hinge Plug, 2 Required
13.	Plastic Hinge Bushing, 2 Required
14.	Hinge Saddle Block

SLIP TURNS INTO THE FABRIC BEFORE ASSEMBLING THE RUDDER AND ELEVATOR

SEAT ASSEMBLY



*where does this  
fit? find it; and  
what size bolt  
4 1/8" bolt  
(44A)*



SUB FIN ROD INSTALLATION

GENERAL NOTES

1. BE CAREFUL NOT TO OVERTIGHTEN BOLTS OR CRUSH TUBING.
2. Where two tubes bolt together, use a plastic washer to minimize scuffing under vibration.
3. At least 1/4 threads should show beyond the plastic insert in the Mylock nuts to be sure of adequate safety action.
4. Mylock nuts may be re-used as long as they are too hard to turn by hand.



ITEM	DESCRIPTION
1.	Fuselage Boom, 183" Long
2.	Nose Strut, 42" Long
3.	Front Fuselage Braces, 72" Long
4.	Center Fuselage Braces, 48" Long
5.	Main Axle (Solid Bar), 54" Long
6.	Rear Fuselage Brace, 39 3/4" Long
7.	Sub Fin Rudder Brace, 72" Long
8.	Sub Fin Rod
9.	1 1/2" Inside Bracket, 7 Required
10.	3 Hole Plate, 4 Required
11.	Foot Bar, 15" Long
12.	Nose Fork
13.	Front Axle, 6" Long
14.	Plastic Covered Seat Support Cable
15.	Seat Top Tube, 10" Long, 3/4" Dia.
16.	Upper Seat Tubes, 36" Long, 3/4" Dia.
17.	Lower Seat Tubes, 33" Long
18.	Flywood Seat Board
19.	Hinge Strap
20.	Plastic Hinge Bushings
21.	Nose Clamp
22.	Wheel Bushing
23.	Main Wheel (1 3/8" Axle Hole)
24.	Large Steel Washer

\* PUT SEAT BELT ON BEFORE AXLE ASSEMBLY...  
OTHERWISE COMPLETE DISSASSEMBLY IS REQUIRED!

Page 1  
MAIN FUSELAGE AIRFRAME ASSEMBLY

Note: To avoid scratching of your airframe tubing use a rug or foam rubber pad to lay your boom on while assembling.

1. FUSELAGE BOOM: (2½" diameter, 183" long). Place boom on rug or foam pad. The end with the white cap with Weedhopper on it is the front of the boom. Make sure it is right side up. There is a 9/16" hole at the rear of the boom, it should be on top.
2. 1½" BRACKETS: (7) required (1½" inside dimension.) One side has a beveled edge. Note: The front set (leading edge brackets) should have the beveled side to the rear. The middle set (thrust/drag brackets) should have beveled edges toward the front. The third set (trailing edge brackets) should also have the beveled edges to the front. Use three, 3-5/8" bolts for 1½" brackets to the boom and one 3¼" bolt for 1½" bracket used for nose strut. (See Drawing.)
3. SUBFIN RUDDER BRACE: (1" diameter, 72" long). Takes one 3- 7/8" bolt. Note: You must slide subfin fabric on boom and subfin rudder brace before bolting. Subfin rudder brace is same as front fuselage brace but has 2 holes at the rear. Bolt subfin rudder brace to fuselage boom.
4. SUBFIN ROD: (20½" threaded rod). There are four ½-20 nuts for the rod. Cut clear plastic rod cover from fuel line, (approximately 14") and slide over subfin rod. Put ½-20 nut on top and bottom of subfin rod. Screw bottom nut down 2" and top nut down 3". Insert subfin rod into subfin material. Put top ½-20 nut on subfin rod by pushing subfin rod through 9/16" hole at top of fuselage boom. Tighten nut approximately ½" down on subfin rod. Slide rod down through 9/16" hole and tighten second ½-20 nut up to bottom of fuselage boom. Now install elevator strut tangs on bottom of subfin rod and insert rod into second hole of subfin rudder brace. Tighten third ½-20 nut down to subfin rudder brace. (See drawing.) Pull subfin material forward on boom until tight against subfin rod. Final adjustment will be made when rudder is installed.
5. CENTER FUSELAGE BRACE: (1" diameter, 48" long). Takes one 5" bolt. This bolt should be installed from right to left, as viewed from pilot's seat.
6. 3 HOLE BRACKET: (4 required) Bolt 3 hole brackets to center fuselage braces. Requires four 1-5/8" bolts. (See Drawing.)
7. FRONT FUSELAGE BRACES: (1" diameter, 72" long.) Takes 5" bolt at boom and two 2½" long bolts at center fuselage brace. Note: Before bolting at center brace slip on rubber coil mounts. Two on each front fuselage brace. Place subfin brace cables on 2½" bolt. (See Drawing.)  
Note: Install 5" bolts right to left.

MAIN FUSELAGE AIRFRAME ASSEMBLY  
CONT.

8. REAR FUSELAGE BRACES: (1" diameter, 93" long). Takes one 5" bolt at boom and two 2-3/8" bolts at center fuselage brace, (See Drawing.) Note: It is necessary to punch hole in subfin material where rear fuselage braces attach at boom. Be sure subfin material is tight against subfin rod. You can use a soldering gun to cut holes in subfin material to prevent fraying.
9. MAIN AXLE: (54" long solid aluminum bar.) Takes two 1-5/8" bolts. Before bolting axle on make sure to slide on seat belt and two 1" hose clamps. Now install subfin brace wires to subfin rod. Use fourth 1/4-20 nut. Note: Three holes on axle should be on right side, as viewed from pilots seat.
10. NOSE STRUT: (1 1/2" diameter, 42" long). Takes one 2-3/8" bolt at bracket. (See Drawing.)
11. NOSE WHEEL FENDER: Takes two 4-40 screws with nuts. Install nose wheel fender on nose fork. NOTE: Attach bolts from the inside out. \*Fold flaps on fender along crease lines. (See Drawing.)
12. NOSE FORK FOOT BAR: (1" diameter, 15" long). Takes two 2" bolts to attach fender and foot bar to nose fork. (See Drawing.)
13. NOSE WHEEL: Install nose wheel into nose fork. Insert axle, 5/8" diameter, 6" long tube, and insert cotter pins in axle.
14. NOSE FORK: Takes one 2" bolt. Grease and install nose fork. DO NOT overtighten bolt. (See Drawing.)
15. PLASTIC BEARING HALVES: (4) required. Install plastic bearing halves on axle and slip hinge straps, (2) required, over plastic bearing halves. (See Drawing.)
16. PLYWOOD SEAT BOTTOM: Install small aluminum washers onto two 2" bolts and insert into plywood seat bottom holes. Insert bolts through hinge straps and lower seat tubes, (1" diameter, 33" long, (2) required). Center seat bottom on axle and tighten hose clamps to lock seat bottom in place on axle. (See Drawing.) Bolt lower seat tubes to nose strut with one 4-1/8" bolt. Insert plywood seat bottom into upholstered bottom seat cushion, wrap flap around axle and velcro to bottom.
17. UPPER SEAT TUBES: (3/4" diameter, 36" long) SEAT TOP TUBE: (3/4" diameter, 10" long). Insert upper seat tubes and seat top tube into upholstered seat back pockets. Attach upper seat tubes to lower seat tubes with two 2 1/4" bolts. Bolt seat top tube to seat back tube with two 1-7/8" bolts. Install seat support cable at this time. (See Drawing.)
18. WHEEL BUSHINGS: Slot should face up and make sure bushing locks into 3 hole bracket. Note: It may be necessary to spread bearings apart slightly with a screw driver. Install Main Wheels, (wheels without bearings). Grease and slide over bushings. Place large steel washers over main axle. (See Drawings.)

MAIN FUSELAGE AIRFRAME ASSEMBLY  
CONT.

19. WING TANGS: Four 4½" Stainless Steel Tangs required. Takes two 1-5/8" bolts. Front tangs bent forward slightly, 10 degrees. Rear tangs bent towards rear 34 degrees. (See Drawings.)

C O N G R A T U L A T I O N S !!!

You have now completed your Main Fuselage Airframe Assembly.

## ELEVATOR ASSEMBLY

1. ELEVATOR TRAILING EDGES: Bolt on three hole brackets, (2 required), one on each outboard trailing edge. Takes four 1-5/8" bolts and four plastic washers. Note: Plastic washers go between 3 hole brackets and trailing edge. (See Drawing.) Lay out elevator fabric upside down and slide trailing edge and leading edge into pockets.
2. ELEVATOR SPAR: Insert elevator pivot bushing, (2 required), into elevator spar ends and pin with elevator pivot bushing securing clevis pin, (2 required, 1/8" diameter, 1 1/2" long), and two safety ring clips
3. Now lay elevator spar on fabric. Locate 2-3/8" clevis (elevator pivot pin, 2 required). Note: These pins have an extra 1/8" hole drilled in the ends. Insert elevator pivot pin into 3 hole bracket, plastic washer, elevator leading edge and elevator pivot bushing. It will be necessary to pull elevator pivot bushing securing clevis pin half way out to install elevator pivot pin. (See Drawing.)
4. ELEVATOR TORQUE TUBE: Facing the elevator from behind, the end of the torque tube with two holes goes on the left. Install one three hole bracket and elevator control horn on left trailing edge and elevator torque tube. Requires three 1-5/8" bolts and one 1 1/2" bolt. (See Drawing.) Install three hole brackets, two required, on right side of trailing edge and torque tube, using three 1-5/8" bolts. (See Drawing.)
5. BEARING HALVES: Glue two bearing halves, centered on torque tube, in line with center hole on elevator spar. (Use super glue.) Install hinge saddle block between bearing halves and elevator spar. Install hinge strap with one 4" drilled bolt, wing nut and safety clip.
6. ELEVATOR SUPPORT STRUTS: Bolt on elevator support struts, one each side, with two 2" bolts. Bolt to front side of elevator spar. Do not bolt slotted side of support to struts. (See Drawing.)
7. MOUNTING: Mount elevator to fuselage boom. Fold out elevator support struts. First bolt elevator spar to boom with one 4" bolt, wing nut and safety clip. Then bolt leading edge of elevator to fuselage boom with one 3-7/8" drilled bolt, wing nut and safety clip. Note: It will be necessary to punch hole in elevator leading edge and subfin material before bolting from 3-7/8" bolt. You may use a soldering gun to avoid fraying.
8. Install elevator support struts on elevator support tangs with two 1 1/2" clevis pins and safety clips.

## RUDDER ASSEMBLY

Lay out Rudder fabric.

1. RUDDER TRAILING EDGE. Slide trailing edge into fabric. (See Drawing.)
2. Bolt 3 hole brackets to lead spar, (4 Brackets required), attach with four 1-5/8" bolts.
3. RUDDER LEAD SPAR. Slide lead spar in fabric. Attach lead spar to rudder trailing edge with two 1-5/8" bolts. (See Drawing.)
4. Bolt Rudder Hinge Bracket to Rudder lead spar with one 1-3/4" bolt. (See Drawing.)
5. Install rudder control horn with two 1½" bolts. (See Drawings).
6. Mount rudder on fuselage with one 3-5/8" drilled bolt, wing nut, safety ring clip and plastic washer through rudder hinge.

Use one 2-3/8" clevis pin, safety ring clip and plastic washer for lower rudder hinge pin.



## WING ASSEMBLY

NOTE: Follow instructions twice, making one for the right side, and one for the left side!

1. LEADING EDGE ROOT FITTING: Use 2-7/8" bolt, (2 required), to bolt root fitting to leading edge. Be sure root fitting is installed properly. (See Drawing.)
2. BIG BRACKET: Take two 3/4" bolts and insert into leading edge. Before bolting on big bracket, slip front wing tang and plastic washer between leading edge and big bracket. (See Drawing.)
3. THRUST DRAG SPAR: Install thrust-drag spar with one 2-3/8" bolt into big bracket on leading edge. Holes on one side of thrust/drag spar are drilled at an angle. (See Note On Drawing.)
4. COMPRESSION STRUT: Install compression strut with one 2-3/8" bolt into big bracket on leading edge. Notched end goes into bracket. Notch faces wing tip when strut is 90° to leading edge.
5. TRAILING EDGE: Bolt rear wing tang between 1 1/2" bracket and trailing edge with one 2 1/2" bolt. (See Drawing.)
6. WING FABRIC: Lay wing fabric out upside-down, (holes in fabric will be facing up.) Fold thrust/drag spar and compression strut flat against leading edge.
  - A. DOUBLE SURFACE:  
Slip the leading edge assembly into the fabric from the center. Feed compression strut through the appropriate hole in the double surface material as the leading edge assembly is slipped into place.
  - B. SINGLE SURFACE:  
The big bracket must be removed and re-installed after leading edge is in place in cover.
7. TRAILING EDGE: Slip the trailing edge assemblies in from tip. Note: Splice in trailing edge and plastic caps goes out toward tip. Now install one 2-5/8" drilled bolt, wing nut and safety clip through trailing edge wing tip and plastic cap. (See Drawing.)

## WING INSTALLATION:

1. Drape wing over fuselage boom right side up and install leading edge with two 2-3/8" clevis pins and two safety clips.
  2. THRUST DRAG SPAR: Connect thrust/drag spar with two 2-3/8" clevis pins and two safety clips.
  3. COMPRESSION STRUT: Fold compression strut out so that fabric does not bind on big bracket.
  4. TRAILING EDGE: Connect trailing edge with two 2-3/8" clevis pins and two safety clips.
  5. Connect compression strut to 1-1/2" bracket on trailing edge with 2-3/8" clevis pin and safety clip.
  6. FRONT WING STRUT: Slide front wing struts on front wing tangs on axle with two 2 1/2" clevis pins and two safety clips.
  7. REAR WING STRUT: Slide rear wing struts on rear wing tangs on axle with two 1 1/4" clevis pins and two safety clips.
- Note: Front wing strut, short. Rear wing strut 92" long.
8. Lift one wing from tip. Do not let wing twist! Slide wing tangs into struts, insert 1 1/4" clevis pins and safety clips.
  9. Insert wing tips into wing tip pockets in fabric. Be sure leading edge of wing tip slides into plastic wing tip block. Wing tip attaches to top of trailing edge with the 2-5/8" drilled bolt, wing nut and safety clip.
  10. WING RIBS: Install center rib first (Longest rib). Slides into rib pocket in center of wing fabric. Use plastic saddle block at rear under rib to hold in place.
  11. Install remainder of wing ribs starting from center and working out to wing tips. (See Drawing.)

## CONTROL SYSTEM

1. CONTROL BRACKETS: Install two 1" brackets and one lower control arm bracket with three 1½" bolts. (See drawing.)
2. HANDGRIP: Use lubricant to install handgrip over control stick.
3. BELLCRANK: Insert bellcrank into control and slide in plastic spacers, (2 required). Bolt control stick to bellcrank with one 1-3/8" bolt. Slide bellcrank assembly into lower control arm slot, use one 1½" bolt and attach one 1" bracket. Do not overtighten! This bolt must be installed from front to back. Note: 1" bracket attaches to rear and bellcrank bends toward rear.
4. CONTROL ARM: Attach lower control arm to lower control arm bracket with one 1-5/8" bolt. Do not overtighten!
5. CONTROL PULLEYS: Lay rudder cables through 1" brackets on axle and install control pulleys with two 1-5/8" bolts. Do not overtighten! Control stick assembly and pulleys should move freely.
6. PUSHROD: Now install pushrod into 1" bracket on control arm with one 1-5/8" bolt. Do not overtighten! Attach rear of pushrod to elevator control horn with one 1½" clevis and safety clip.
7. RUDDER CABLES: Attach rudder cables to rudder control horn with two quick release clevis pins, two tiny clevis pins and two safety clips. MAKE SURE TO CROSS WIRES AS SHOWN IN DIAGRAM!
8. TRIM CORD: Attach trim cord to pushrod with clip and rear fuselage brace with 1" hose clamp. (See Drawings.) Run rudder cables over subfin brace wires to prevent rubbing. (See Drawing.)

## FUEL TANK

1. Attach fuel tank to axle with bungee cord. (See drawing.) Make sure to put plastic nut caps on nuts by fuel tank to protect fuel tank.
2. Cut 3" from fuel line and install between fuel pick-up tube and primer bulb. Note fuel flow arrow on primer bulb. Attach remainder of fuel line on other end of primer bulb. Run fuel line up front fuselage brace with throttle cable housing. Be sure to install fuel filter in fuel line before attaching the fuel pump. Do not mount fuel pump or fuel filter. Let them hang free.

## THROTTLE LEVER ASSEMBLY THROTTLE HOUSING

1. Install throttle lever assembly on center fuselage brace, (approximately 12" above fuel tank.)
2. Route cable housing down center fuselage brace to front fuselage brace, up front fuselage brace with fuel line to engine.
3. Install throttle housing stop. (See Drawing.)
4. Secure fuel line and throttle housing to front and center fuselage braces with nylon tie-wraps.

## CONTROL PANEL INSTALLATION

1. Install control panel behind center fuselage braces on fuselage boom. (See Drawing!)
2. Insert 4 "D" size batteries. Secure wiring to fuselage boom with nylon tie-wraps.

## COIL MOUNTING

1. Mount coils to front fuselage braces. Make sure coils are isolated from tubing and vibration. Twist rubber coil mounts twice and insert coils. (See Drawing.)

ENGINE INSTALLATION  
AND WIRING INSTALLATION

SEE DIAGRAM!!!

Note: Engine mounting bolts should be installed from right to left as viewed from pilots seat.

PROPELLER

Mounting: Use four 5/16-24 Propeller face plate bolts.  
Torque bolts to 12 to 15 foot pounds.  
SEE DIAGRAM!!