

**PLEASE READ FIRST !!**

Before you start construction of your model, study the plan and construction procedure carefully so you have a complete understanding of the step - by - step method of building this airplane. Careful attention to detail, patience and quality workmanship will insure a beautiful model. Remember - work slowly and carefully at all times. This multi-purpose model has been designed to give you a variety of building choices. You can build the model for static display on table top with landing gear in position. You can build the model for static display in flying mode without landing gear (simulated retractable) or you can build the model for flying either as a hand launch or catapult launched glider. You must decide how you want to build your model now and then proceed accordingly. Choose a flat building board and always cover plan with a clear kitchen film to prevent parts from sticking to plan.

**ADHESIVES YOU CAN USE**

Your model can be built using many different products such as white glue, epoxy, regular model cements or cyanoacrylate (CA) glues. You may choose to use any one or a variety of these adhesives for your model. For example: white glue will not hold plastic parts together or on the model but any of the others will. **WARNING** - be very careful when using CA glues and read the manufacturers instructions completely.

**PARTS IN THE KIT**

We strive to supply quality materials in all our kits. All parts are inspected with regard to the function they serve. If an imperfection is spotted in a scrap area of die cut sheets, plastic parts, etc. and doesn't affect the actual part, the sheet is considered acceptable. Also, when wooden parts are cut, natural internal stresses can be relieved. These relieved stresses may allow parts to bow or twist. These will readily straighten out as parts are assembled into a structural unit.

**I NEED HELP**

If, during the construction of your model you need a word of explanation to solve a building problem, just drop a line and we'll be glad to answer your question by return mail. We also welcome your comments or suggestions since we are intent on furnishing you the model builder with the finest scale flying model kits.

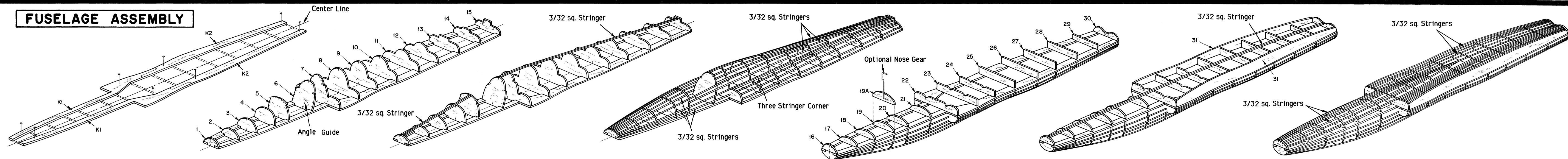
**PROUD OF YOUR MODEL**

If you wish, send us a photo of your completed model. We have a photo album for display at trade shows and exhibitions. Don't forget your name, address and age on back of the photo so we can credit the builder.

**TISSUE COVERING**

Read entire note before starting. The tissue supplied in this kit allows covering of compound curves without wrinkling when moistened with water before applying to framework. Tissue shrinks as it dries to a tight, smooth surface. Use clear dope to attach tissue as follows: Apply a light coat of dope to outside edges of area to be covered. Allow to dry and sand smooth with fine sandpaper. Cut tissue to shape needed plus about 1/2" oversize on all sides. Place tissue on a flat surface and dampen with moistened cloth by dabbing. Apply a second coat of clear dope to area to be covered, then place moistened tissue over frame and wet dope. Pull tissue gently to work out wrinkles and sags. Allow to dry. Trim off excess. Apply two coats of clear dope (thinned 50 - 50 with thinner) before final assembly. All parts are covered with the largest piece of tissue possible without causing wrinkles. For instance: The wing panels can be covered with one piece for the top and one piece for the bottom. The same holds true for the tail parts. The fuselage however, will require many separate pieces. You can use your own skill and judgement to determine just how large and many pieces you will need to do the entire fuselage. Remember any area that develops wrinkles can be cut out and recovered. Check wing panels and tail surfaces for warps. If any have developed, they can be removed by holding over steam from a boiling kettle, and twisting gently in opposite direction. Check again when cool. **BE CAREFUL - STEAM IS VERY HOT - DON'T BURN YOURSELF.**

**FUSELAGE ASSEMBLY**



**STEP 1**

Cover Plan with any clear Kitchen Wrap to prevent parts from sticking to Plan. Carefully identify and remove Keel Parts #K1 and #K2 from diecut sheets. Pin in place over full size drawing gluing together where they join.

**STEP 2**

Identify and push bulkheads #1 to #15 from diecut sheet. Mark center lines on top and bottom of each bulkhead. Lay bulkheads #1, #5, #6, #7 and #15 over full size drawings of each and mark stringer locations. Glue bulkheads #1 to #5 in place vertically as shown. Cut out or trace off #6 bulkhead angle guide and glue #6 in place leaning backward at top as shown. Now glue remaining bulkheads #7 to #15 in place vertically.

**STEP 3**

Cut 3/32 sq. strip for center stringers to length and glue in place as shown. Note that the front section fits between #1 and #5 and rests on top of #2, #3 and #4. Also the rear piece fits between #6 and #15 and rests on top of all other bulkheads. This will now support all bulkheads and prevent accidental breaking.

**STEP 4**

Cut remaining 3/32 sq. stringers to length and glue in place as shown, centering over marks previously made on bulkheads. Note the three stringer corner (see Full Size #7 Bulkhead) required from #7 to rear. This will allow attaching surfaces for tissue covering.

**STEP 5**

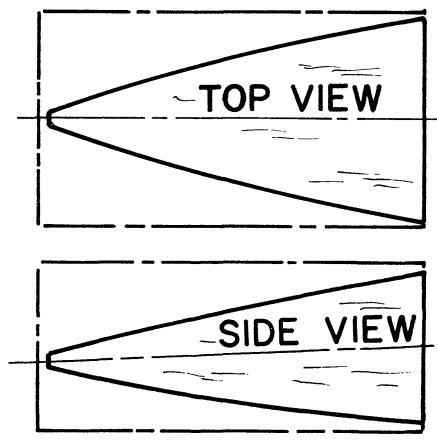
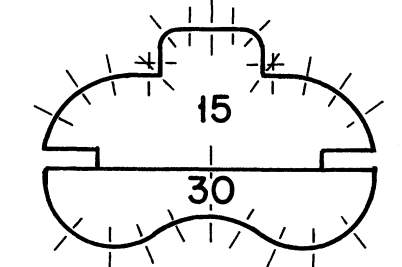
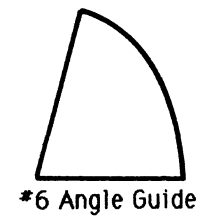
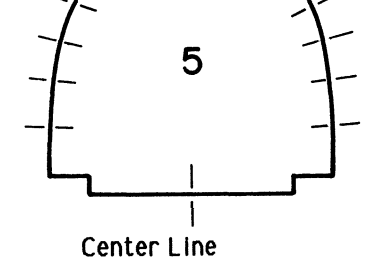
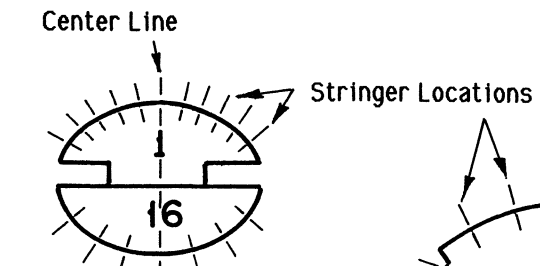
Remove top of Fuselage Framework from building board. Note that the majority of the top framework has been omitted from the bottom view sketches for clarity. Identify then remove bulkheads #16 to #30 from diecut sheet. Mark stringer locations on #16, #22 and #30. Glue bulkheads in place to bottom of top bulkheads as shown making SURE they are centered. Check to be sure all bulkheads are vertical and in line with top bulkheads. If model is to have Landing Gear, bend gears to shape using full size drawings. Glue Nose Gear into crease marks on #19A. Glue this assembly directly behind #19 sandwiching gear between.

**STEP 6**

Cut 3/32 sq. strip to length for center stringer and glue it in place. Again, note that it fits between #16 and #30 and rests on top of all other bulkheads. Glue #31's in place as shown. Note that #31's fit between #22 and #30 and they must be pushed in to follow the curve of the keel.

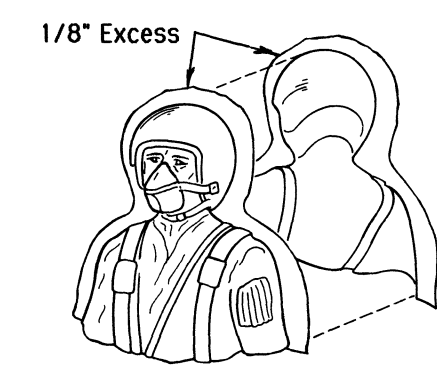
**STEP 7**

Cut the remaining 3/32 sq. stringers to length and glue in place. Examine the sketch carefully and be sure all stringers are located properly.



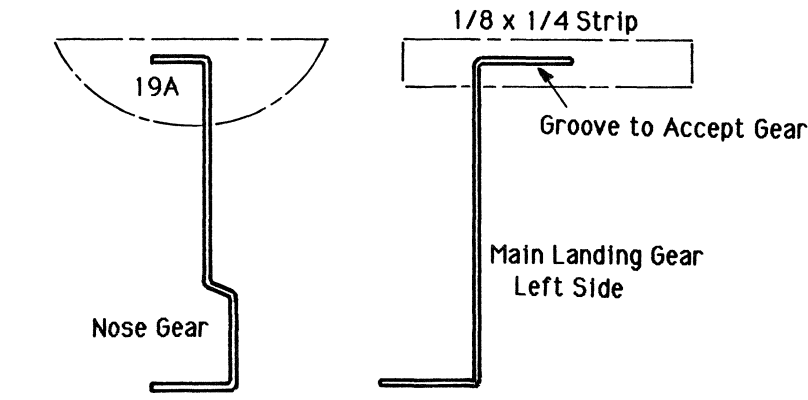
**NOSE BLOCK DETAIL**

Make Nose Block using 7/8 x 1-1/8 x 2 stock. Trace off Side View, Top View and End View from plan. Trim and sand block to this shape and install in Final Assembly.



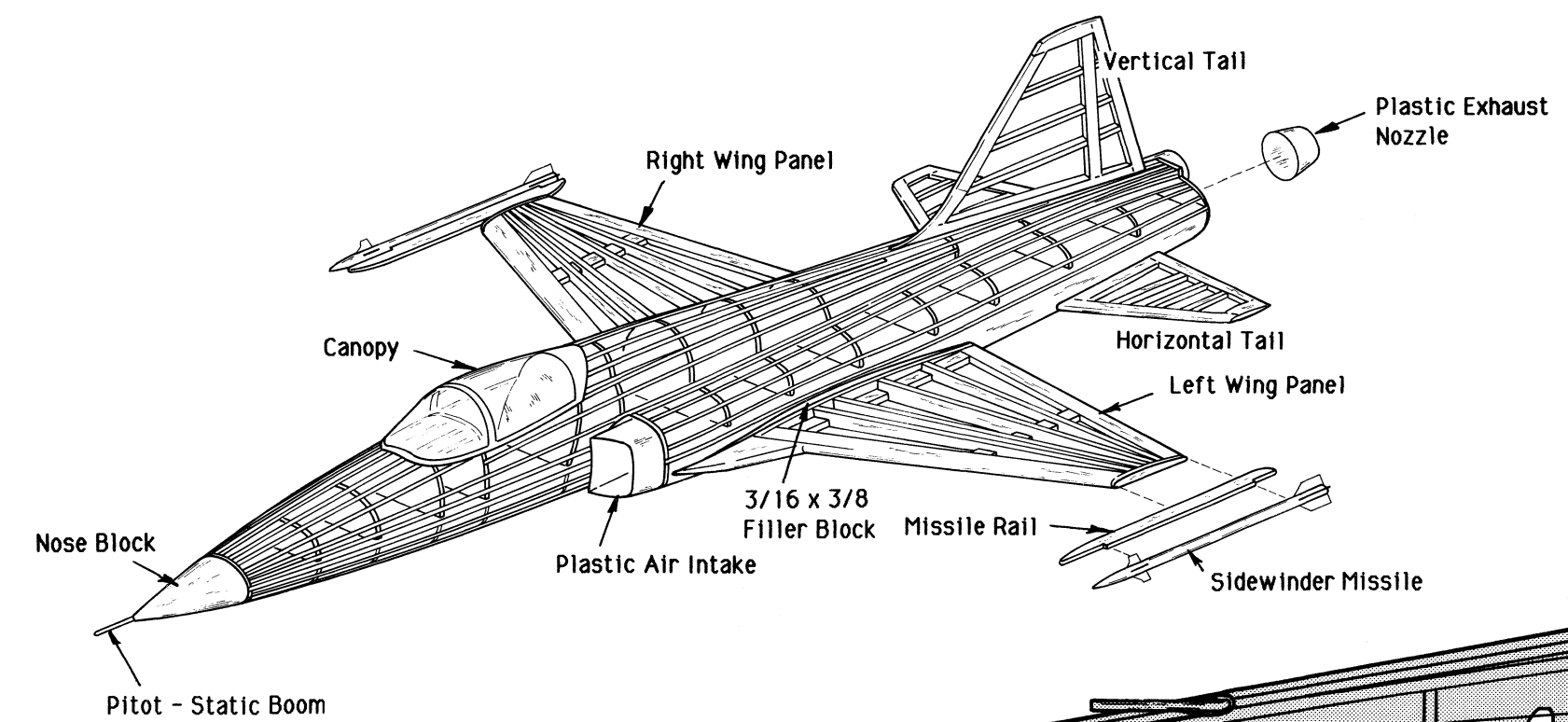
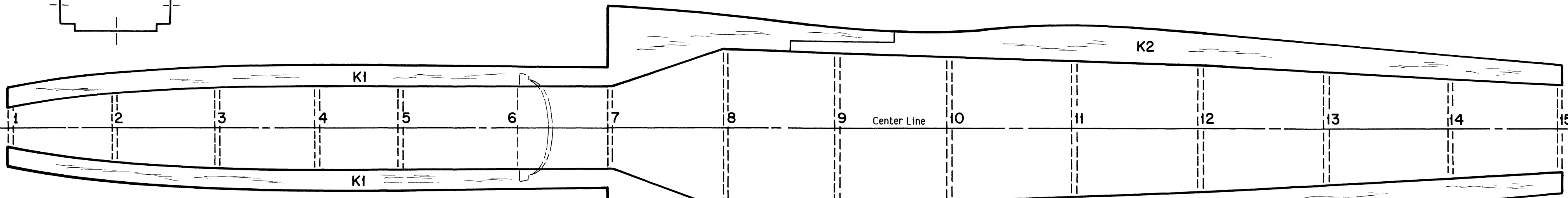
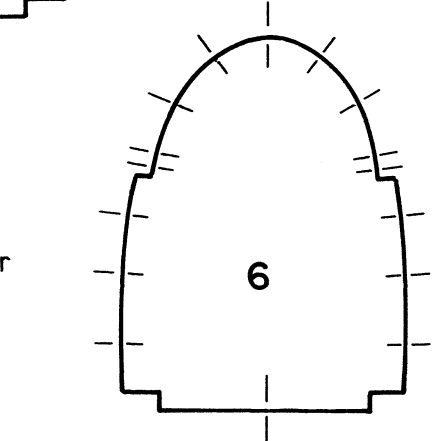
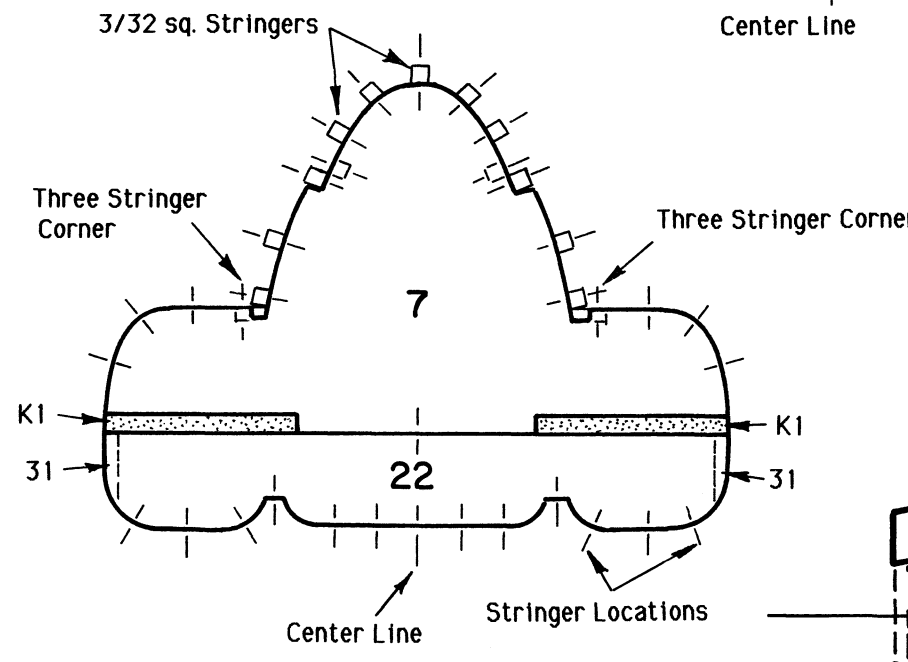
**PLASTIC PARTS**

Carefully trim all Plastic Parts from sheet. Leave about 1/8" excess on front and rear of pilot halves as shown. Glue two halves together and glue to thoroughly. Trim off excess and sand seam smooth.



**LANDING GEAR DETAIL**

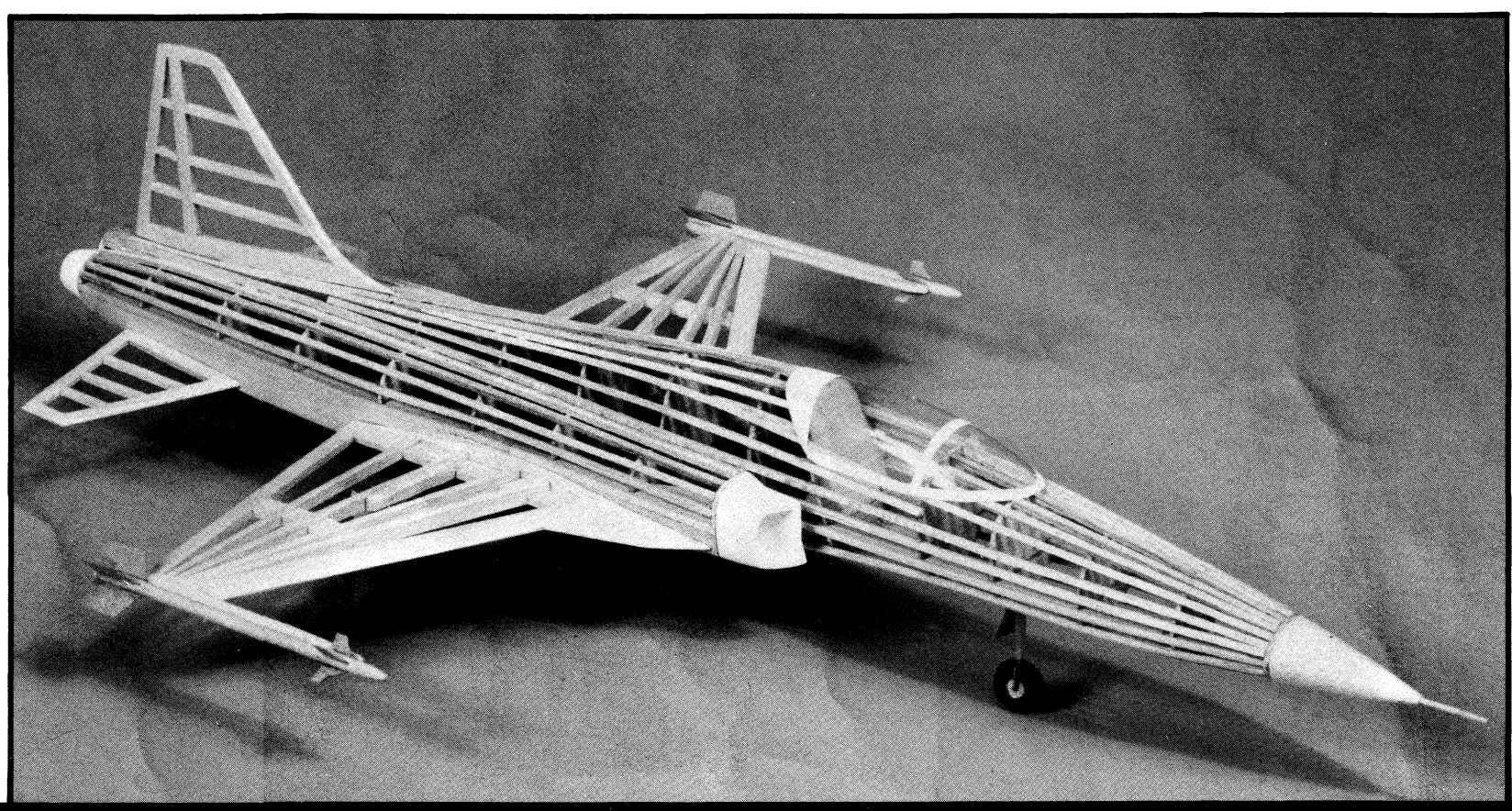
Landing Gear is optional. Cut and bend Main Gears and Nose Gear from .045 dia. wire. Nose Gear is installed in Step #5. Main Gears are installed after Wings have been completed. Cut a piece of 1/8 x 1/4 strip to length, groove to accept gear and then glue to front of Spar C sandwiching gear between. Repeat for other side.



**FINAL ASSEMBLY**

Cut the one 3/16 x 3/8 x 12 Filler Block in half to 6" lengths. Glue in place against side of Center Wing Rib #33. Hold Wing in place and trace off shape of Fuselage Side along #31 then trim filler block to this shape. Trim filler block to shape of Wing. Carve Nose Block (see detail) and glue to front of Fuselage. Sand entire Fuselage smooth. Trial fit all parts, Wings, Tails and Plastic Parts to make sure everything fits well then cover Fuselage with tissue. The Final Assembly Sketch shows parts uncovered for clarity only. They are covered separately and then joined. Glue Wings in place aligning carefully, see Side View and Technical Specification drawings, for exact location. Glue Plastic Air Intakes and Exhaust Nozzles in place. Glue Horizontal Tails in place at slight downward angle (when viewed from rear). Again check spec. drawings. Glue Vertical Tail in place. Check alignment of all surfaces carefully as glue dries. Make Missile Rails (see detail) and glue to Wing tips at slight downward angle, (see Side View). Cut and shape Pitot-Static Boom from 1/16" dia. Dowel using Side View for pattern. Drill hole in front of Nose Block and glue Boom in place. Model is now painted. If it is to be a flying model use only two coats of clear dope thinned 50-50 with thinner then one light spray coat of each color. If it is to be a Static Display model painted scale colors see Photo on Box Top and Plan for camoflage scheme. Assemble the two AIM-9 Sidewinder Missiles (see detail). Paint and glue to Rails as shown. Paint Cockpit area flat black. Cut Instrument Panel from sheet and glue to back of #5. Pilot is optional. If Pilot is used glue a scrap piece of balsa across Cockpit as support. Glue Pilot in place. Trim out the Clear Plastic Canopy and paint Framework area. Glue Canopy in place. If model has been built with Landing Gear, cut Plastic Tubing to length and slip over each gear. Install wheels (not supplied). Main Wheels are 1" dia. and Nose Wheel is 3/4" dia. Cut the Landing Gear Doors from cardboard sheet, paint inside gray and outside to match camo scheme. Glue doors in place in open positions. See Side View and Tech Drawings. Cut two 20mm Guns to length from 1/16" dowel, (see Side View), paint flat black and glue in place. Install Decals at locations shown on Side View.

**BALANCE HERE**

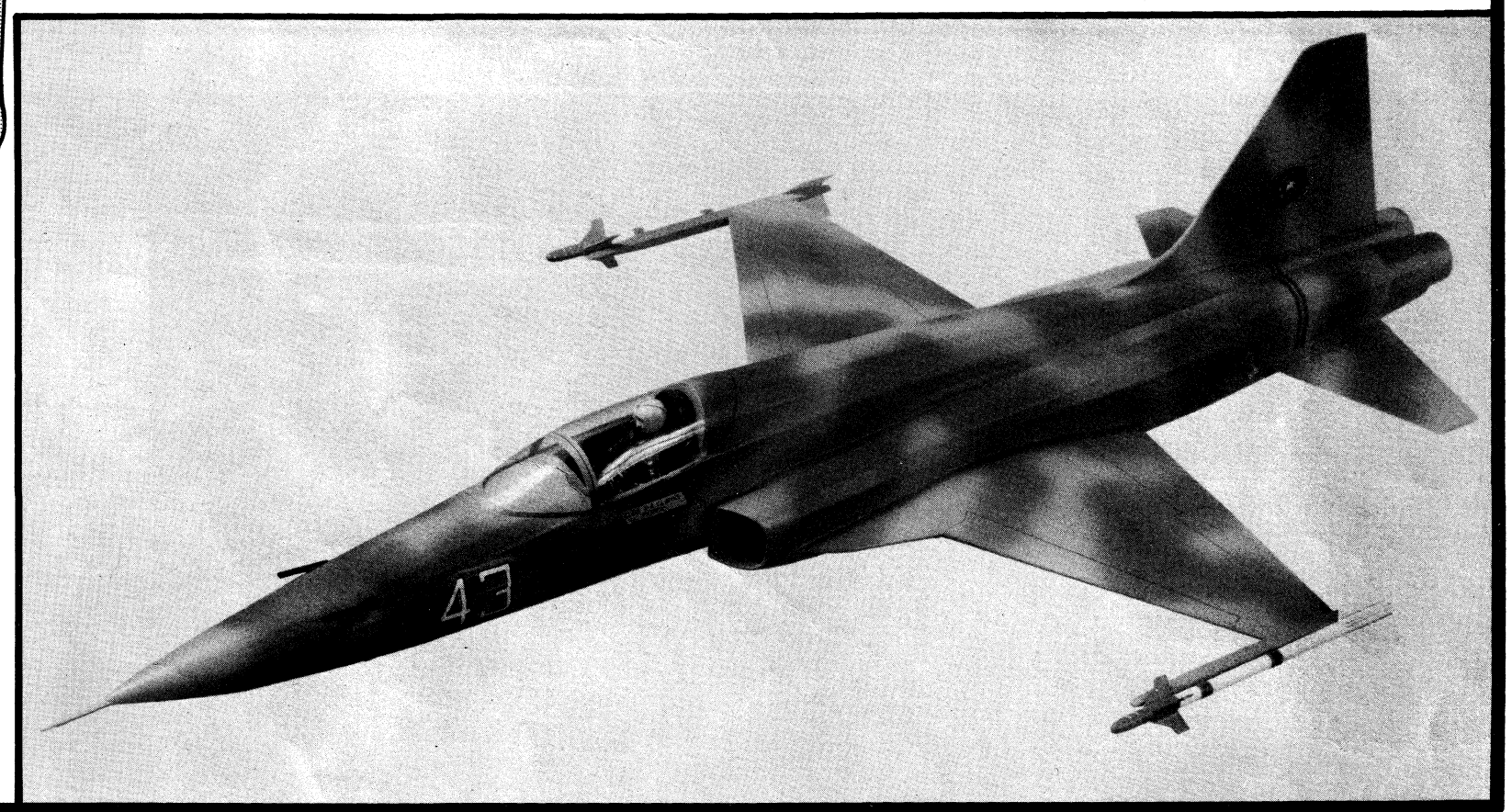


**SIDE VIEW**

**KIT J-3  
F-5E TIGER II**

**1/24 Scale Balsa Flying Model**

**Wingspan: 13" Length: 24"**



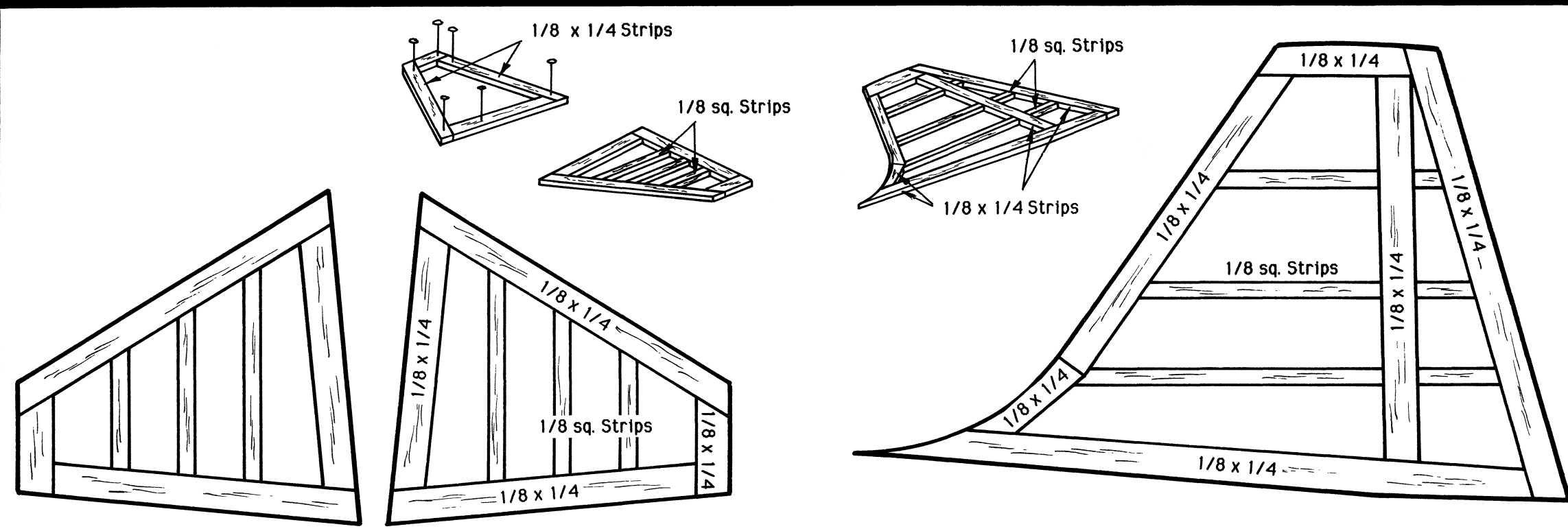
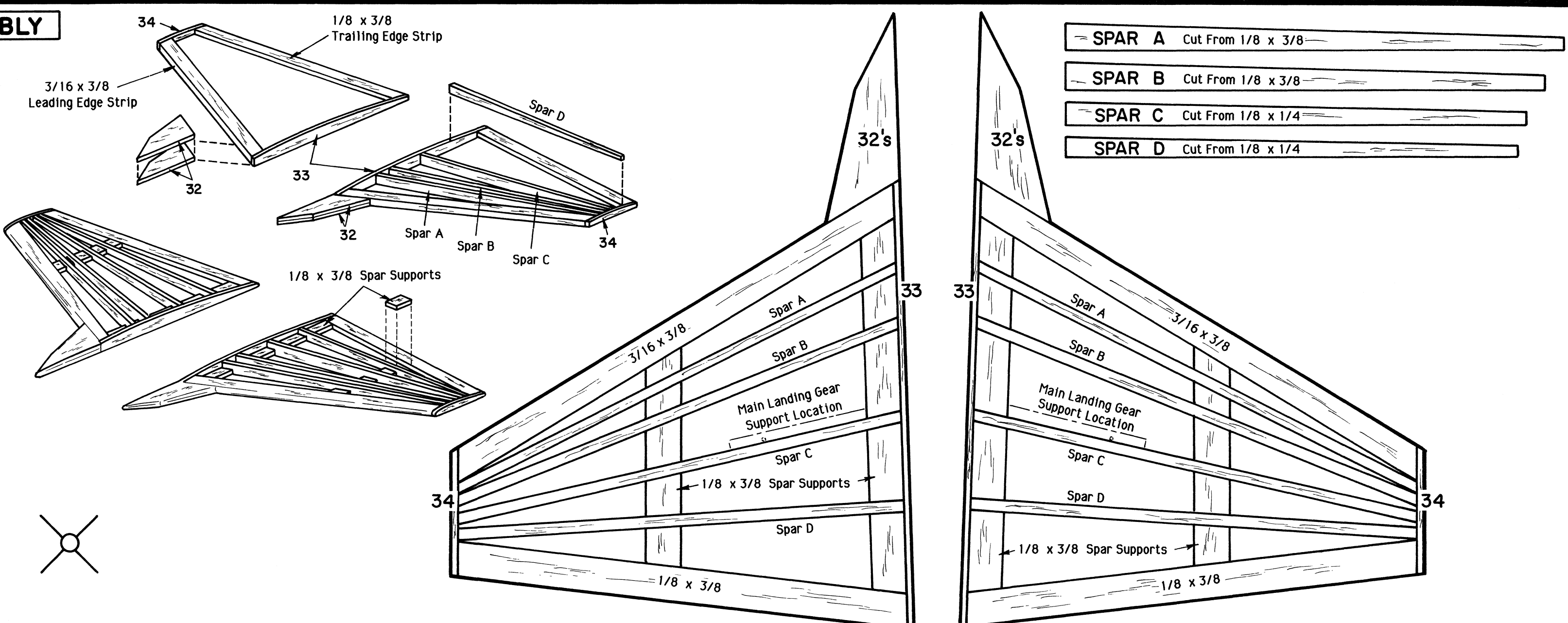
## WING ASSEMBLY

### STEP 1

Cut two each of the four Wing Spars using material indicated. Pin Rib #33 in place. Cut Trailing Edge from 1/8 x 3/8 strip and pin in place glue to rib. Cut Leading Edge to shape from 3/16 x 3/8 strip. Pin in place and glue to rib. Pin and glue End Rib #34 in place. Cut angle on ends of Spars A-B-C-D and glue them in place. Glue two #32's together then glue to front of Wing.

### STEP 2

Using 1/8 x 3/8 strip, cut Spar Supports to lengths and shapes shown. Glue in place as shown. Build opposite panel in same manner. Allow to dry thoroughly, then remove both panels from building board and sand smooth, rounding Leading Edges and tapering Trailing Edges to match wing ribs. If Landing Gear is used (See Detail!) note locations of the 1/8 x 1/4 Main Gear Supports on Full Size Wing Drawing. The Landing Gear would have to be installed before Wings are covered with tissue.



## HORIZONTAL TAIL ASSEMBLY

Build Horizontal Tail directly over full size drawings as shown. Use 1/8 x 1/4 material and cut to sizes and shapes shown for perimeter frame. Pin in place and glue together where they join. Using 1/8 sq. for inner structure, cut pieces to length and glue in place. Allow to dry thoroughly, remove from building board and sand smooth tapering as shown on Side View and Technical drawings. Cover with tissue.

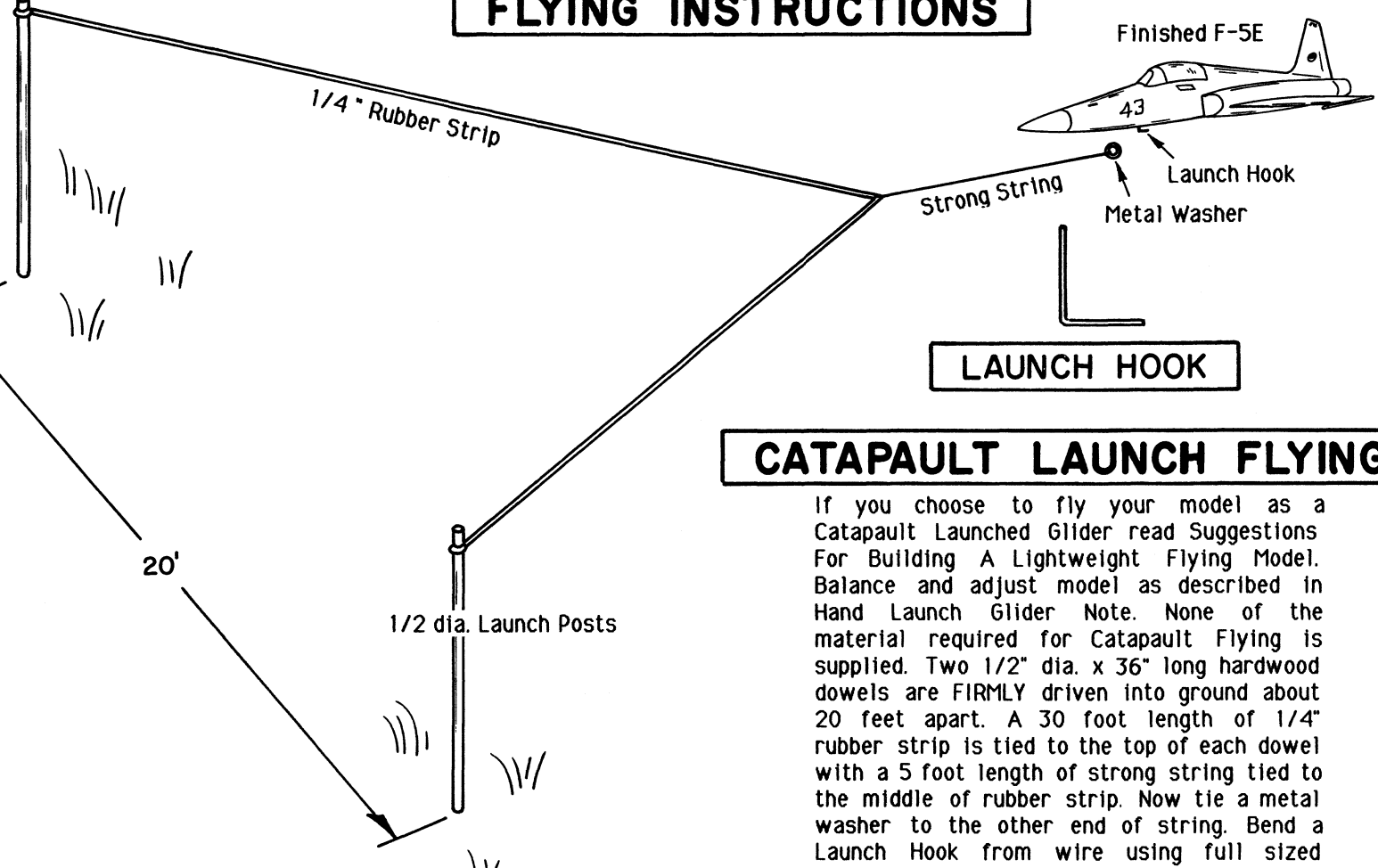
## VERTICAL TAIL ASSEMBLY

Build Vertical Tail directly over full size drawings as shown. Cut 1/8 x 1/4 strips to length and pin and glue in place. Finish off with 1/8 sq. strips as shown. Allow to dry thoroughly then remove from building board. Sand smooth tapering edges as shown in Technical drawings. Cover with tissue.

## SUGGESTIONS FOR BUILDING A LIGHTWEIGHT FLYING MODEL

Sand all finished parts (wing panels, stab, vertical fin, fuselage) very carefully tapering surfaces (see specification views) so that all surfaces have a minimum of wood structure. Do not install landing gears, missiles, air probe, or any unnecessary details. After applying tissue use two coats of clear dope thinned 50-50 with thinner and one very light spray coat of finish color.

## FLYING INSTRUCTIONS



## SUGGESTIONS FOR BUILDING A SUPER SCALE STATIC DISPLAY MODEL

An even more highly detailed model can be built for static display. None of the extra material for this type of model is included in the kit. Since this model is not meant to be flown, weight is not a factor. The real aircraft framework is covered with sheets of aluminum, fiberglass, carbon fiber, etc. To duplicate this full skin covering, all tail surfaces can be duplicated with sheet balsa of the proper thickness and not built with open framework. The wing panels are also duplicated with balsa sheet cut to shape. Glue center and tip ribs in place, then shape and sand wing to conform to rib shape. The fuselage is a bit more involved. Instead of using 3/32 sq. stringers spaced as shown in drawings the entire fuselage is planked with 3/32 x 3/8 strips. All assembled components are sanded smooth and covered with tissue to fill wood pores more quickly and result in a smooth surface. This method will eliminate framework from being visible through covering and allow you to add as much detail as you wish, using the scale spec drawings as reference.

### CAUTION

Do not fly any model in the vicinity of Electric Power Lines, or if flying sight is obstructed or spectators are in unsafe positions.

## MISSILE RAIL & MISSILE ASSEMBLY

Make two Missile Rails from 1/8 x 1/4 balsa using full size drawing as pattern. Missiles are made from 3/16 dia. dowel cut to length and rounded on front. Cut the Fins from cardboard sheet and glue in place. Missiles are painted white with blue nose and stripes as shown on photos on plan and box top.

## SPECIAL THANKS TO BERT KINZEY & IN DETAIL & SCALE PUBLICATION FOR TECHNICAL REFERENCE DATA AND SPECIFICATION DRAWINGS

## HAND LAUNCH FLYING

If you choose to fly your model as a Hand Launched Glider read Suggestions for Building a Lightweight Flying Model. After construction is completed, model MUST balance at point shown on Side View. Add weight as needed to nose or tail. Choose a calm day for flying and a field with tall grass for first test flights. Allow model to rest on your forward hand at air intake and push off hard and slightly nose down with your other hand. If model stalls and balance is correct - adjust horizontal tail to a slightly down position. If model dives adjust tail up slightly. Continue adjustments until model glides well. Remember - this is a scale model of a Jet Airplane. Flying speed is CRITICAL due to small wing area and heavy loading. Model will glide well under speed and drop quickly when flying speed is lost.

## F-5E DIMENSIONS

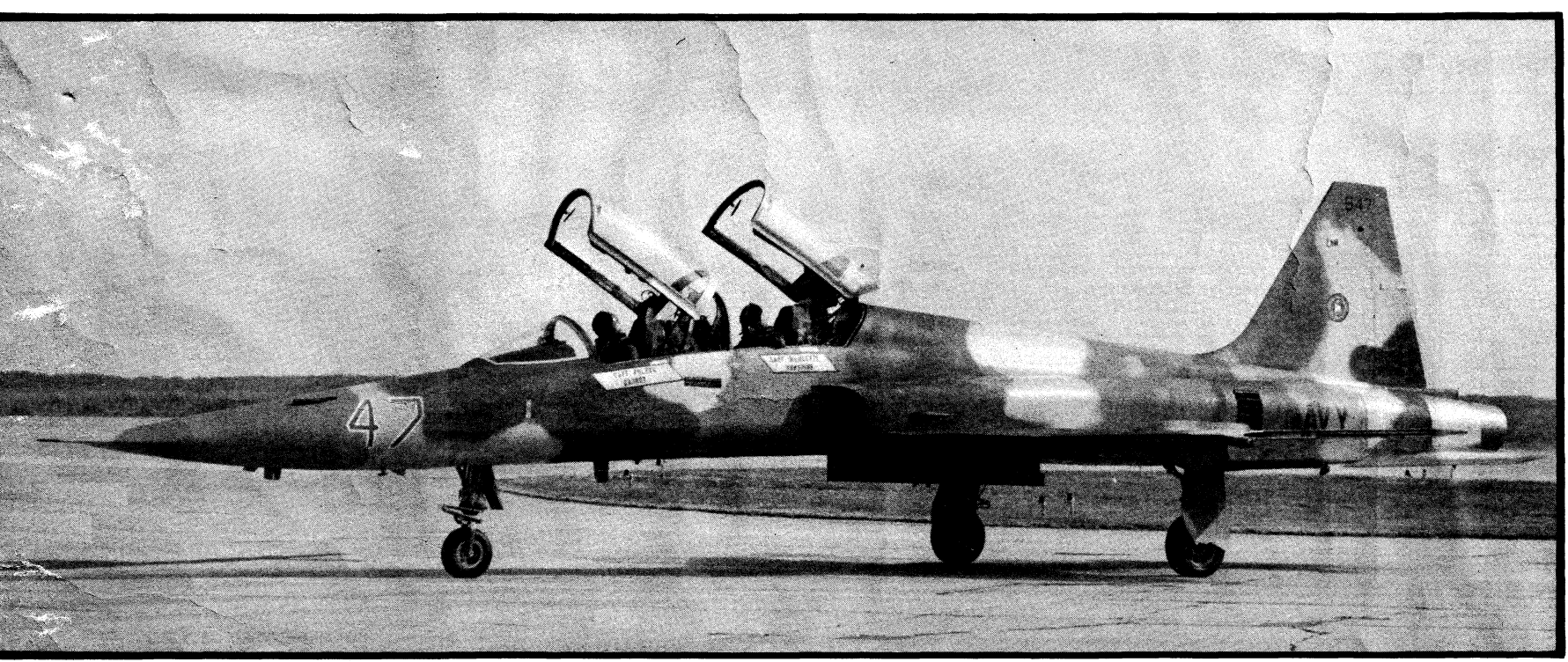
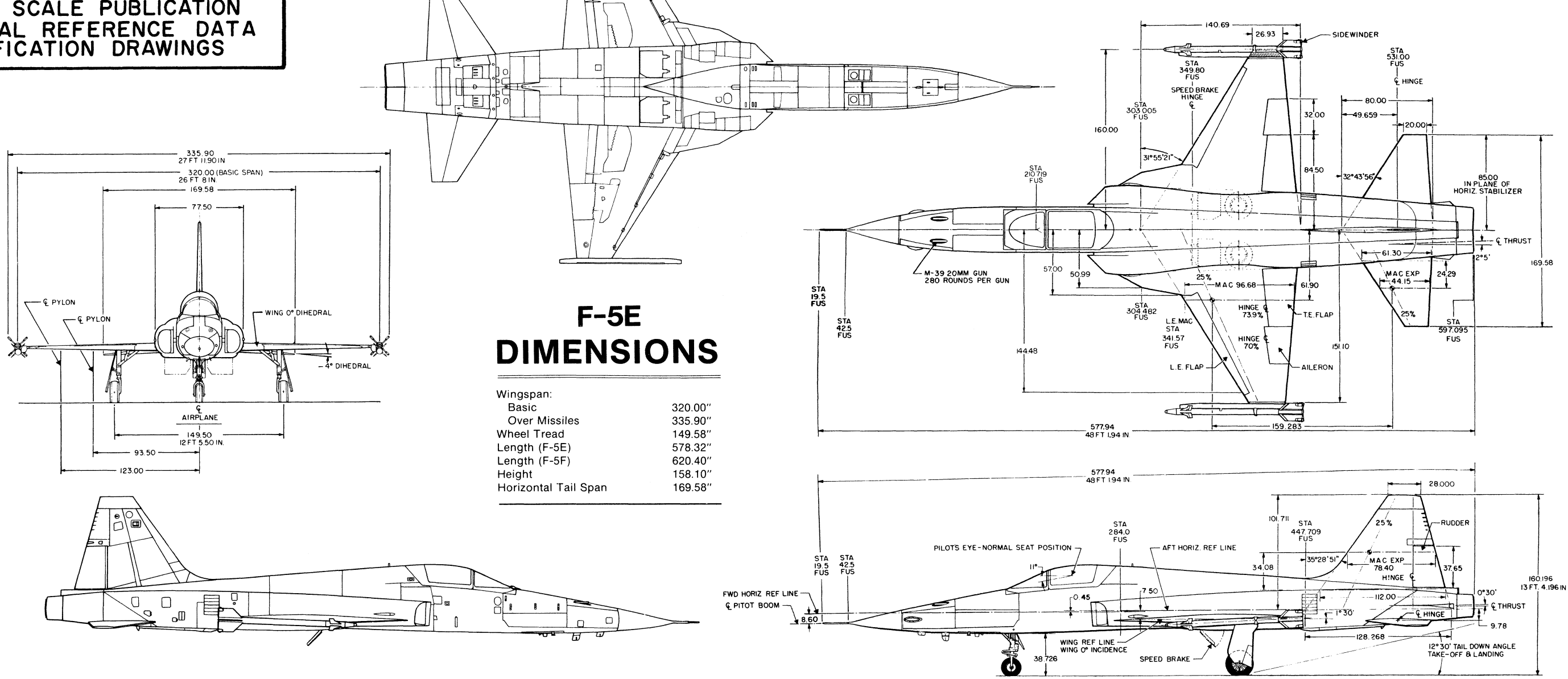
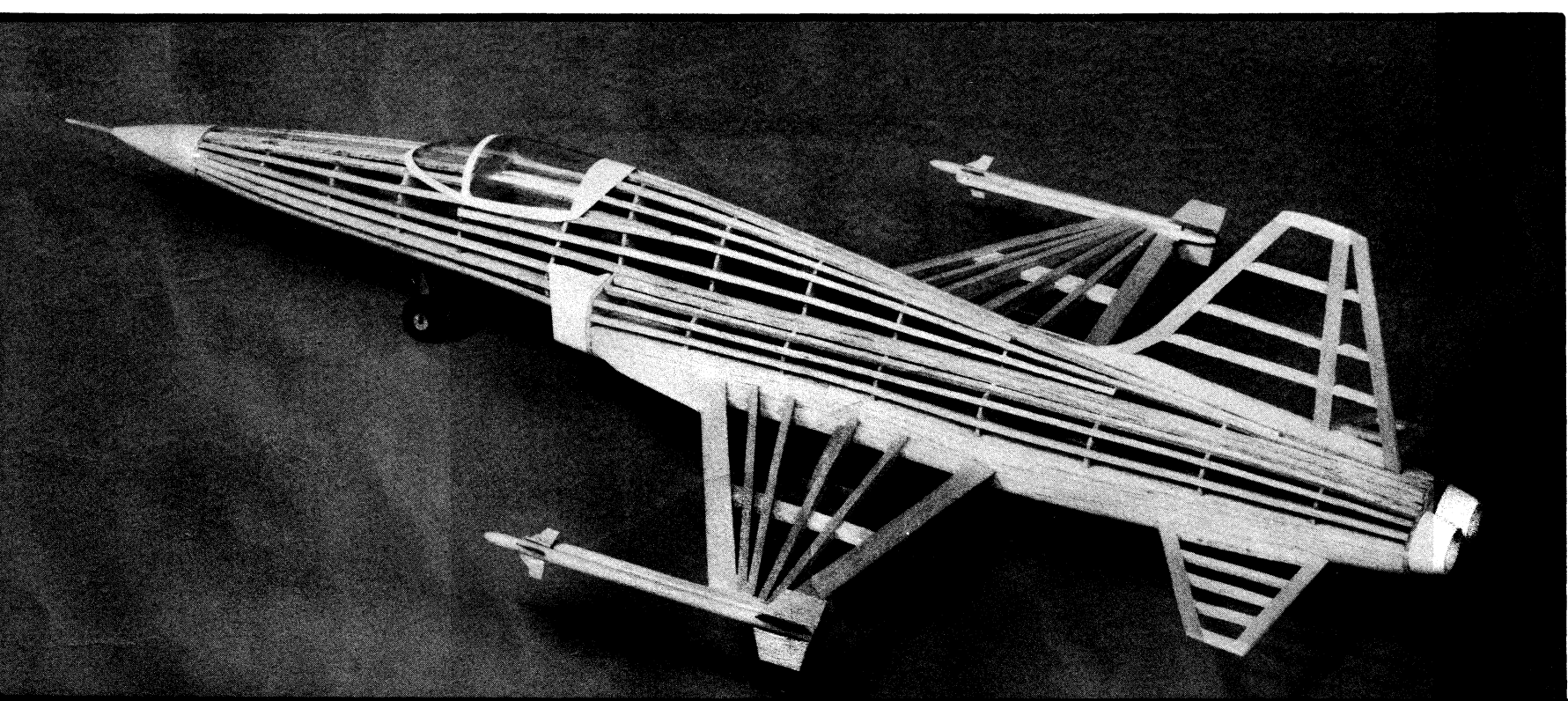
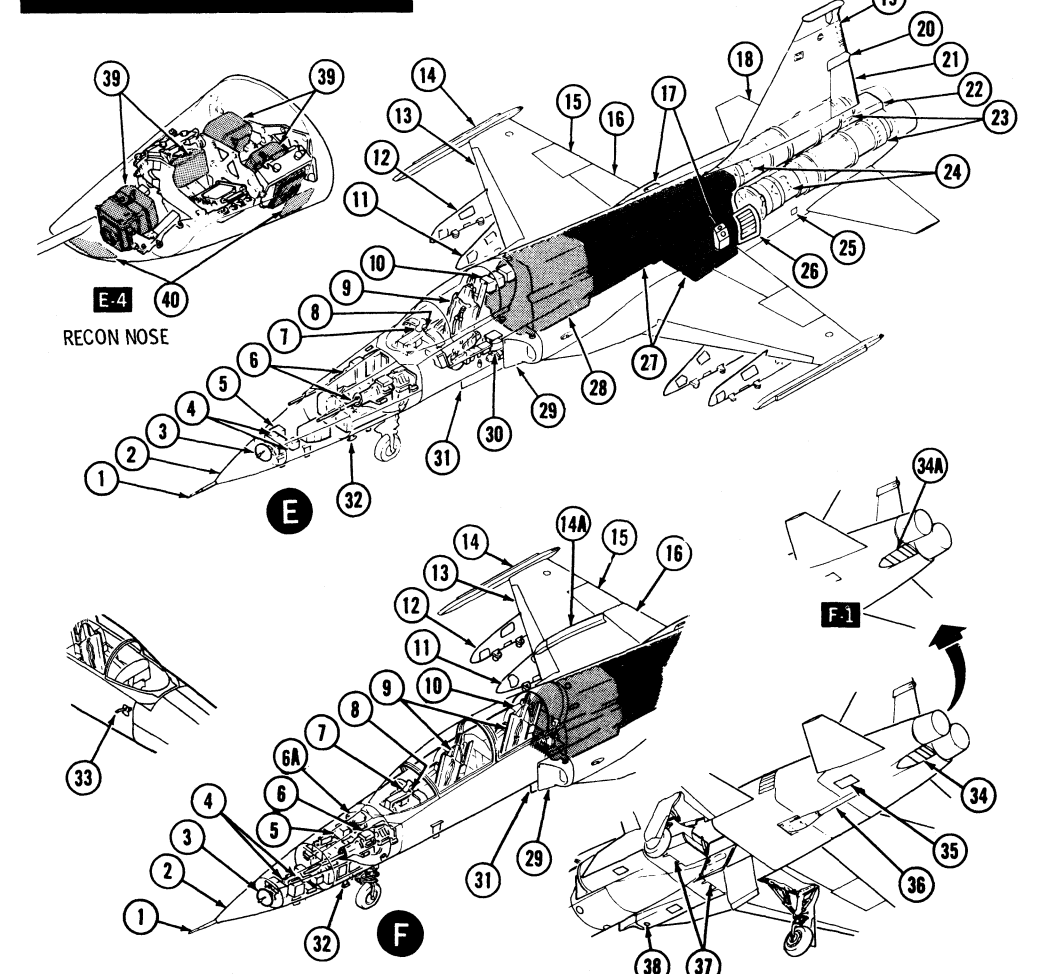


Photo of Real F-5F Showing Similar Paint Scheme George Cockle Photo

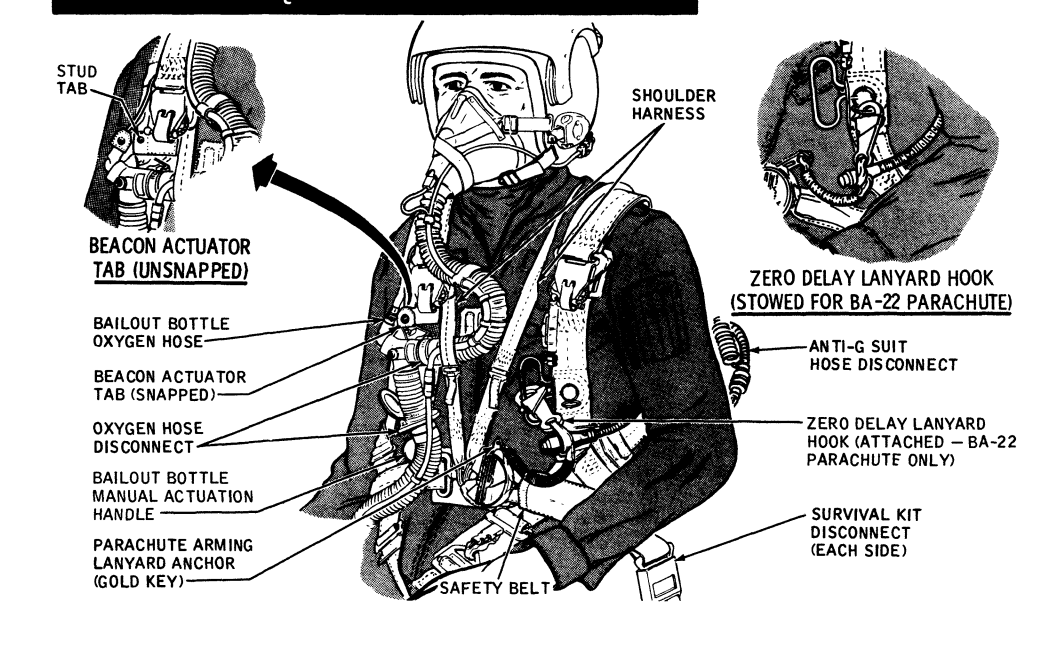


## GENERAL ARRANGEMENT

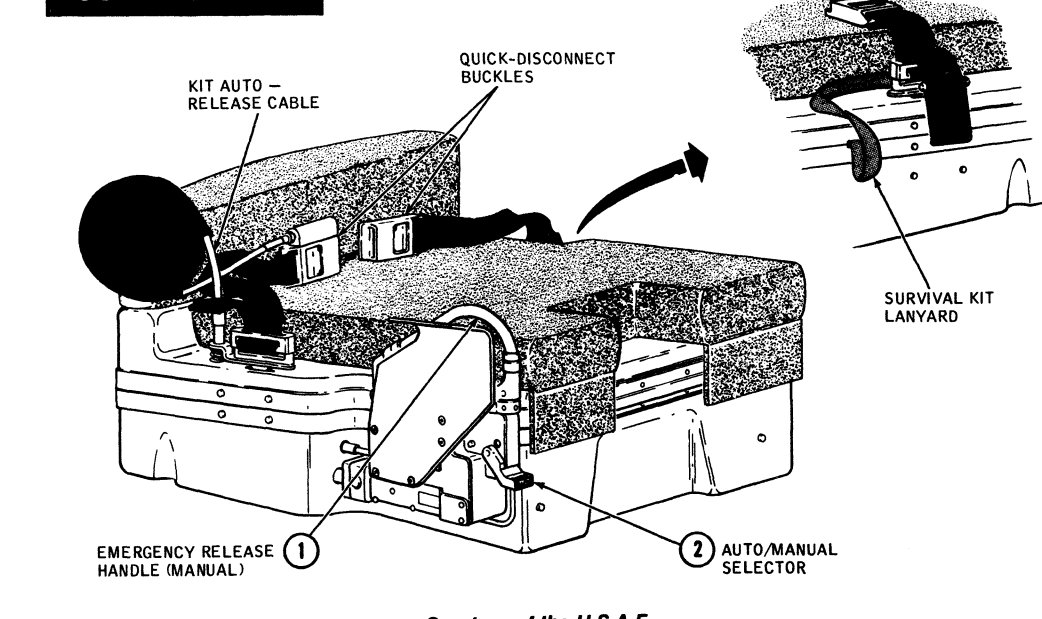


- 1 PITOT-STATIC BOOM
- 2 RADOME
- 3 RADAR ANTENNA
- 4 AVIONICS EQUIPMENT BAYS
- 5 BATTERY
- 6 GUNS (LEFT ONLY)
- 7 LIQUID OXYGEN CONVERTER
- 8 COMPUTING OPTICAL SIGHT
- 9 NIGHT CAMERA (ON SIGHT)
- 9 ENGINE STARTER AIR INLET
- 10 EJECTION SEAT
- 11 INSTRUMENT EQUIPMENT BAY
- 11 INBOARD PYLON
- 12 OUTBOARD PYLON
- 13 LEADING EDGE FLAP
- 14 WING FINCE (BOTH SIDES)
- 15 ALERON
- 16 TRAILING EDGE FLAP
- 17 HYDRAULIC RESERVOIRS
- 18 HORIZONTAL TAIL
- 19 VERTICAL STABILIZER
- 20 FUEL VENT
- 21 BRIDER
- 22 DRAG CHUTE COMPARTMENT
- 23 ENGINE OIL RESERVOIRS
- 24 RECEPTACLE
- 25 ENGINE AUXILIARY AIR INTAKE DOOR (EACH SIDE)
- 26 LAUNCHER RAIL
- 27 FUEL (AUTO) SYSTEM CELLS
- 28 L FUEL (PWO) SYSTEM CELLS
- 29 ENGINE AIR INLET DUCT (EACH SIDE)
- 30 LIQUID OXYGEN CONVERTER
- 31 CENTERLINE PYLON
- 32 TOTAL TEMPERATURE PROBE
- 33 AOA NAME TRANSMITTER
- 34 EXTERNAL TAIL BALLAST - TOTAL BRIDER
- 34A EXTERNAL TAIL BALLAST - TOTAL BRIDER
- 35 ENGINE STARTER AIR INLET
- 36 EXTERNAL ELECTRONIC
- 37 SPEED BRAKE
- 38 ENGINE AUXILIARY AIR INTAKE DOOR (CROSS DOWN TO PILOT)
- 39 NIGHT CAMERA
- 40 CAMERA WINDOWS (5 TOTAL)

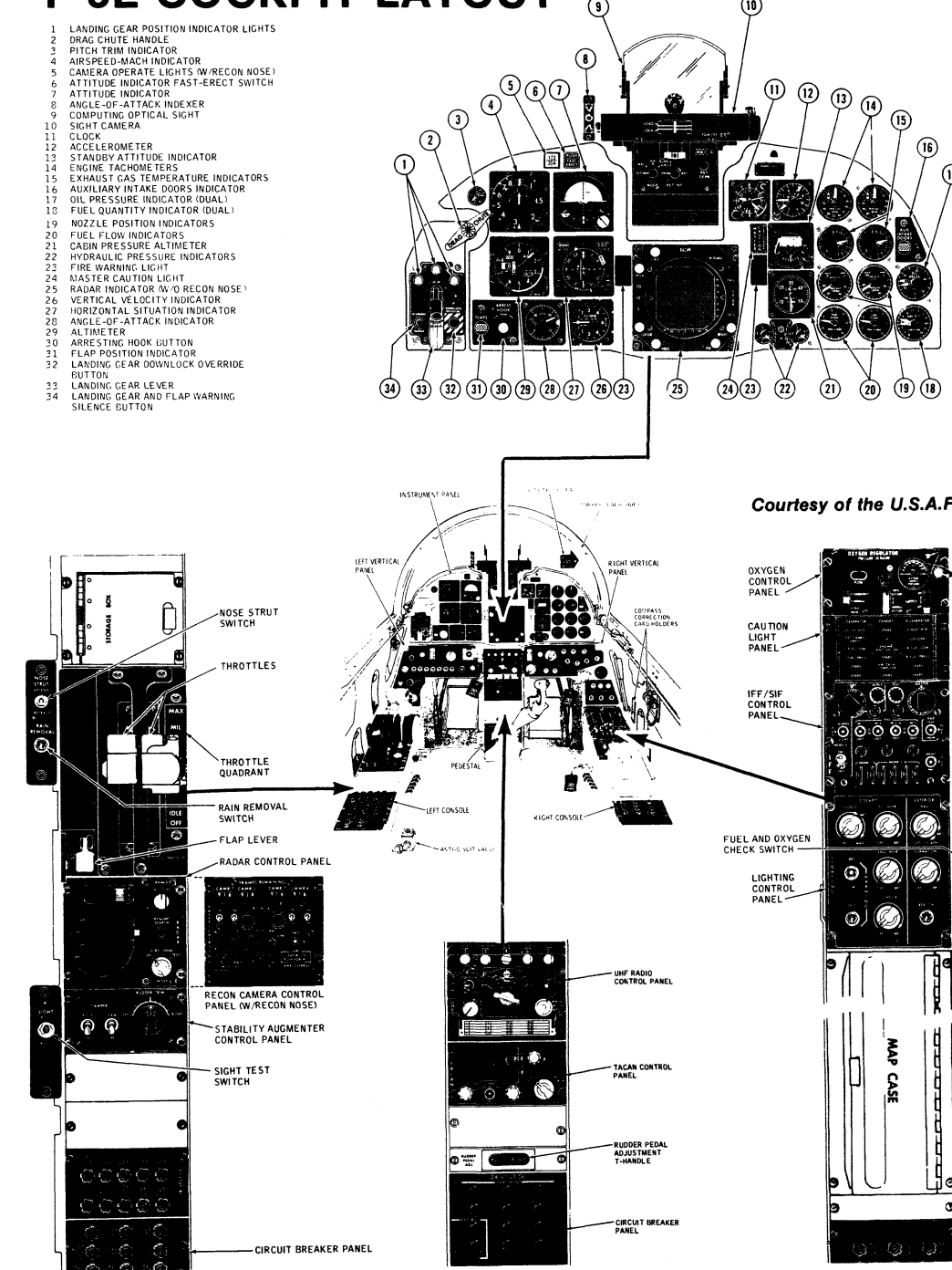
## PERSONAL EQUIPMENT CONNECTIONS



## SURVIVAL KIT



## F-5E COCKPIT LAYOUT



## F-5E TECHNICAL DATA

GUNS			
No.	Type	Rate	Max. EA Location
2	M-39	2000 - 250 - 1	Nose
ROCKETS			
Number	Type	Location	
4	LA-5A	Wing Pylons	
1	TD-117B	Wing Tip	
2	855-20 A/A	Centerline	
1	BMI-16A	Centerline	
BOMBS			
No.	Weight	Type	
3	100	M-137A1/D5 GLP	
5	100	M-137A1/D5 GLP	
5	100	M-137A1/D5 GLP	
5	100	M-137A1/D5 GLP	
5	100	M-137A1/D5 GLP	
5	100	M-137A1/D5 GLP	
ELECTRONICS			
First Flight (F-5E-25, Test Bed)	Mar 69		
First Flight (F-5E-25, Test Bed)	Jun 72		
First Flight (F-5E-25, Test Bed)	Jul 74		
First Flight (F-5E-25, Test Bed)	Jul 74		
First Flight (F-5E-25, Test Bed)	Jul 74		
WEIGHTS			
Empty	15,075 (lb)	1.33	
Basic	16,241 (lb)	1.33	
Design	16,241 (lb)	1.33	
Combat	16,241 (lb)	1.33	
Max Takeoff	16,241 (lb)	1.33	
Max Land	21,819 (lb)	1.33	
POWER PLANT			
Type	General Electric		
Rated Thrust (at 15,000 ft)	11,000 (lb)		
Length	117.3"		
Diameter	50.0"		
Weight (dry)	675 lb		
Fuel Type	Aviation Gasoline		
Augmentation	Afterburner		
ENGINE RATINGS			
Max Thrust	15,000 (lb)	1.33	
Max Power	16,241 (lb)	1.33	
Max Torque	16,241 (lb)	1.33	
Max Land	21,819 (lb)	1.33	
Max Altitude	50,000 (ft)	1.33	
FUEL			
Location	Type	Capacity	
Center Cell		100 (lb)	
Wing Cells		100 (lb)	
APC Cell		100 (lb)	
Field (Internal)		100 (lb)	
Passage Pylon		100 (lb)	
Other		100 (lb)	
Total		600 (lb)	
OIL			
Capacity	5.0 (US Gal)		
Specifications	MIL-1551 (S)		